8TH INTERNATIONAL BLACK SEA COASTLINE COUNTRIES SCIENTIFIC RESEARCH CONFERENCE

AUGUST 29-30, 2022 / SOFIA, BULGARIA
BULGARIAN ACADEMY OF SCIENCES,
INSTITUTE OF ORGANIC CHEMISTRY
WITH CENTRE OF PHYTOCHEMISTRY

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ABSTRACTS BOOK

EDITORS

Prof. Dr. Pavlina DOLASHKA
Dr. Kaldygul ADILBEKOVA

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CONFERENCE ID

CONFERENCE TITLE

8th INTERNATIONAL BLACK SEA COASTLINE COUNTRIES SCIENTIFIC RESEARCH CONFERENCE

DATE AND PLACE

AUGUST 29-30, 2022/ SOFIA, BULGARIA

SOFIA TECH PARK, BOULEVARD "TSARIGRADSKO SHOSE

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PARTICIPANTS COUNTRY (24 countries)

TÜRKİYE (80) BULGARIA (69) INDIA (4) TUNUSIA (2) HUNGARY (1) MOROCCO(5) ROMANIA (11) THAILAND (2) NIGERIA (4) IRAQ (3) ALGERIA (3) AZERBAIJAN (7) PORTUGAL (1) RUSIA (3) BELGRADE (2) GEORGIA (4) POLAND (1) INDINOZIA (2) USA (1) UKRANIE (1) UGANDA (1) SERBIA(1) ROME (1) LITHUANIA (1)

Total Accepted Article: 210

Total Rejected Papers: 37

Accepted Article (Turkey): 80

Accepted Article (Other Countries): 130

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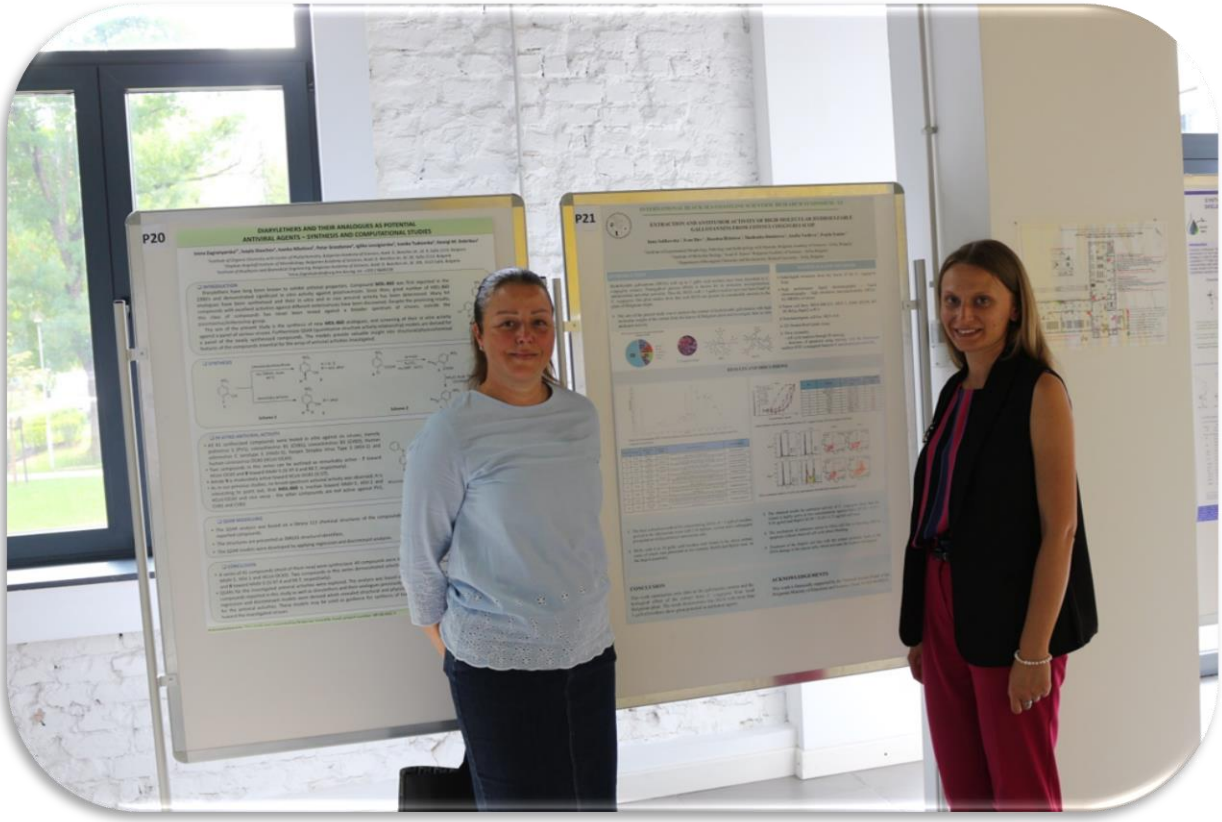

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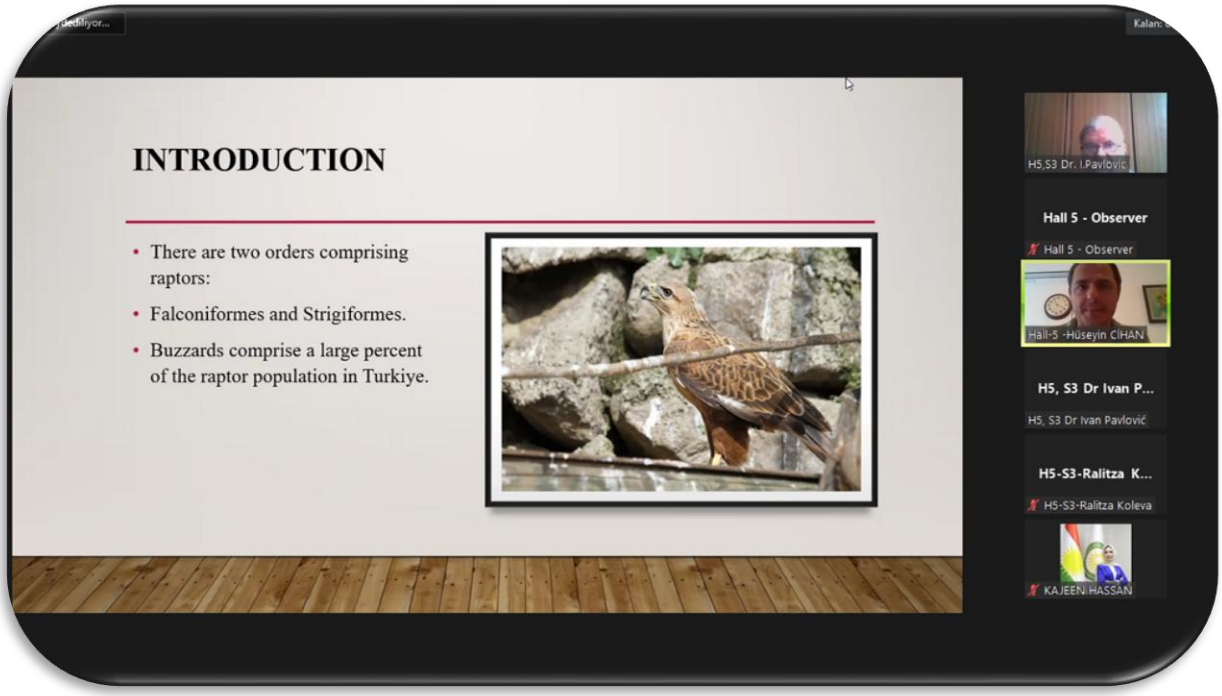

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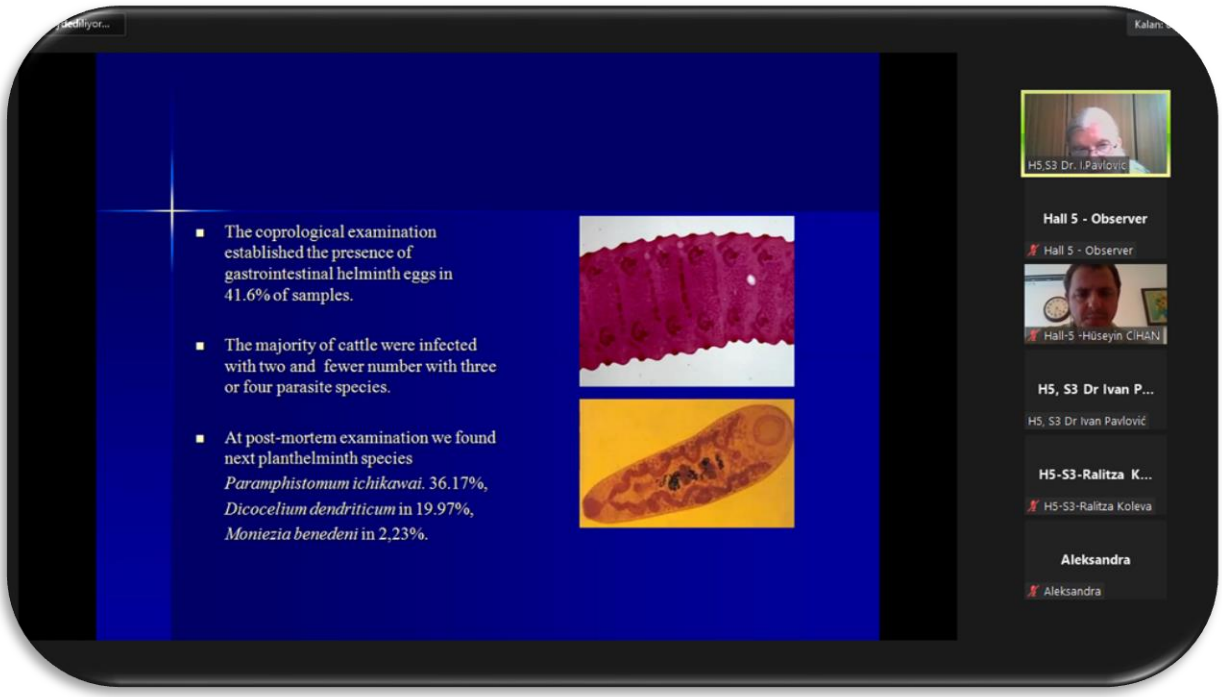

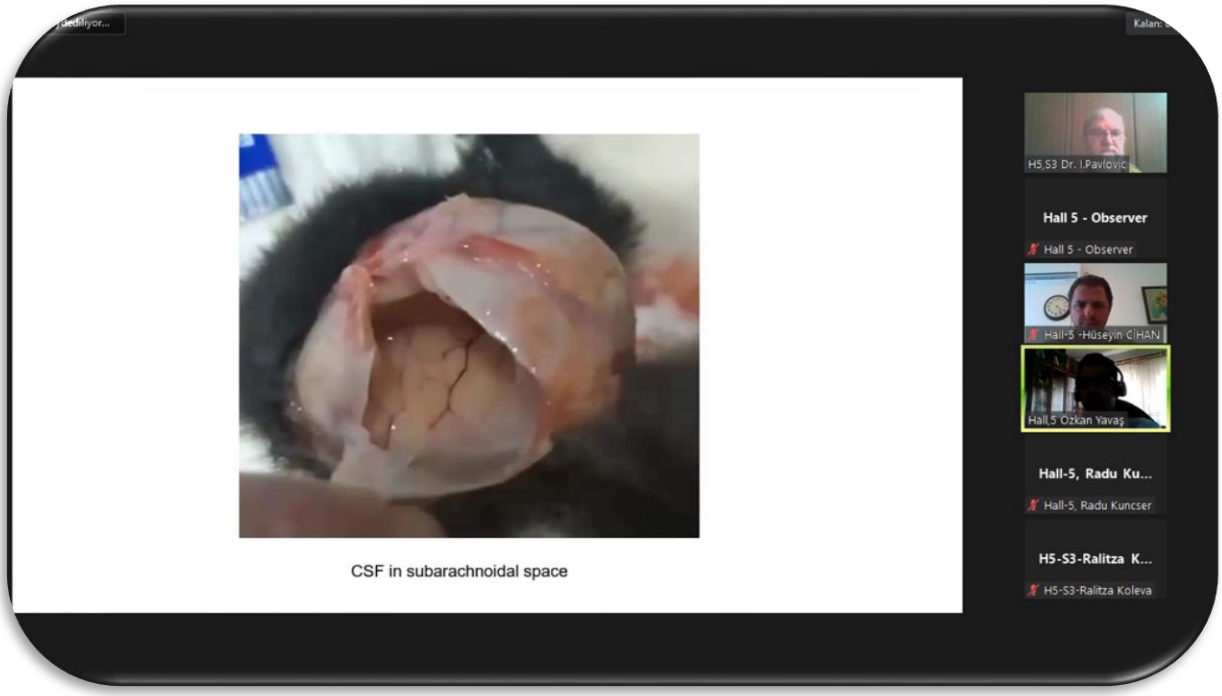

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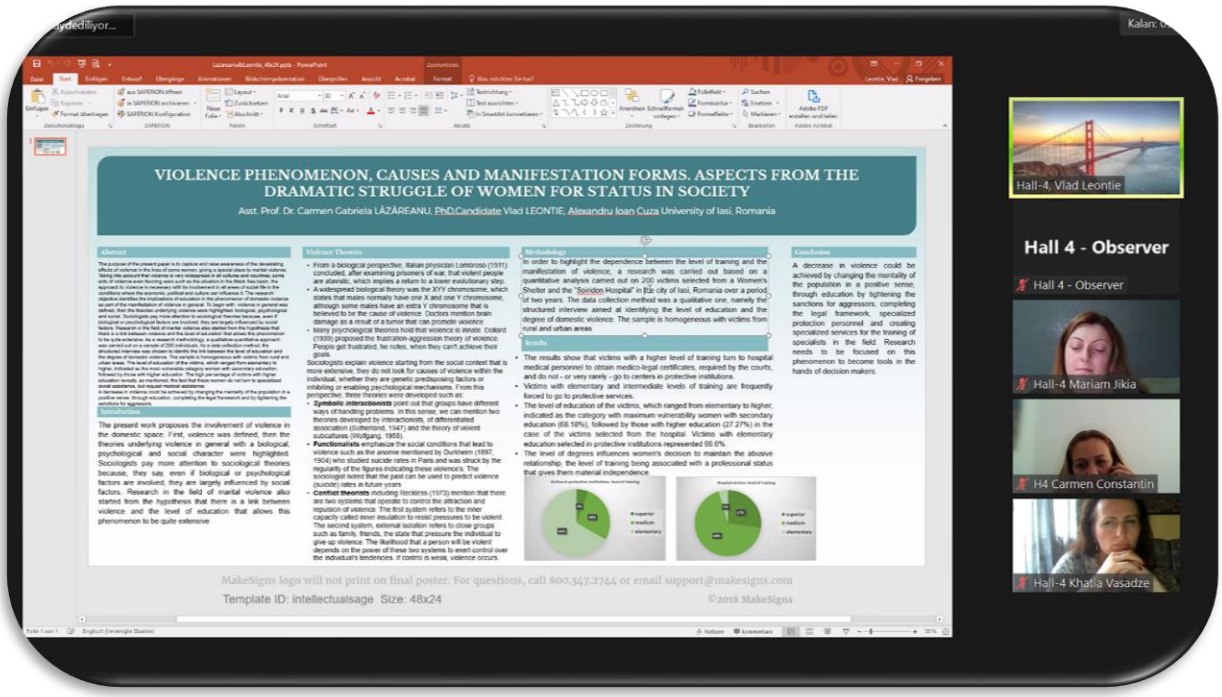

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8th INTERNATIONAL BLACK SEA COASTLINE COUNTRIES SCIENTIFIC RESEARCH CONFERENCE

August 29-30, 2022

Country Partner: Bulgarian Academy of Sciences Institute of Organic Chemistry with Centre of Phytochemistry
Venue: Sofia Tech Park, Boulevard "Tsarigradsko Shose" 111

CONFERENCE PROGRAMME

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-

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OPENING SPEECHES

9:00-10:00- Registration

9:30-10:00- Opening Ceremony

Welcome Speeches

Moderator: *Prof. DSc Pavlina DOLASHKA*

Prof. Dr. Vanya KURTEVA

Dr. Kaldygul ADILBEKOVA

IN PERSON PROGRAM -29.08.2022

August 29-30, 2022, Sofia, Bulgaria

29.8.2022		
9:00-10:00	**Registration**	
10:00-10:20	**Open Ceremony**	**Prof. DSc. PAVLINA DOLASHKA** **Prof. Dr. VANYA KURTEVA – IOCCP-BAS** **DR. KALGYGUL ADILBEKOVA - İKSAD Institute**
10:20-12:30	**Lectures**	**Chairmen : Prof. Iva Ugrinova and Yulian Voynikov**
10:20-10:45	**L1 Invited speaker** **Prof. Iva Ugrinova**	Recent studies of the antitumor activity of the newly isolated low-toxic biologically active agents/systems
10:45-11:00	**L2** Zlatina Vlahova	Antitumor activity of bioactive compounds from Rapana venosa against a panel of human breast cell lines
11:00-11:15	**L3** Alexander Dushkov	Investigating the in vitro antitumor and antiproliferative potential of an Amanita muscaria extract against lung and prostate cancer cell line
11:15-11:30	**L4** Dimitar Kaynarov	Selective Cytotoxicity of Hemocyanins againstT Bladder Carcinoma T24 Permanent Cell Line and Mechanism of Antitumor Action
11:30-11:45	**L5** Momchil Kermedchiev	A new approach of treatment of hard to heal wound and chronic wounds with natural substances
11:45-12:00	**L6** Yulian Voynikov	High-throughput HR-LC-MS analysis of natural compounds in complex mixtures
12:00-12:15	**L7** Tülay Tekin Yilmaz	A sociological look to the theory of learned helplessness
12:15-12:30	**L8** Kazım Biber	Development of a grade scoring key to determine the levels of pedagogical art criticism of 5-6 years old children
12:30-13:30	**Lunch**	
13:30-15:00	**Lectures**	**Chairmen: Prof.Reni Kalfin and Lyubka Tancheva**
13:30-13:45	**L9 Invited speaker** **Prof. Reni Kalfin**	Mechanisms underlying therapeutic potential of Helix aspersa extract in experimental Alzheimer's disease
13:45-14:00	**L10** Lyubka Tancheva	Neuroprotective properties of Helix aspersa snail extract in Parkinsons's disease experimental model
14:00-14:15	**L11** Ventseslav Atanasov	Proteomic analysis on scopolamine rat model of Alzheimer's disease with application of snail extract as neuroprotective agent
14:15-14:30	**L12** Neda Anastassova	Neuroprotective and antioxidant properties of 5-methoxyindole-hydrazone hybrids as potential multi-target drugs for the treatment of neurodegenerative disorders
14:30-14:45	**L13** Dimitar Serbezov	Markedly elevated population frequency of two rare variants associated with Alzheimer's disease in ancient Caribbean communities compared to contemporary human populations
14:45-15:00	**L14** Dragomira Nikolova	A Necessity for expanding the newborns' screening panel in Bulgaria – comparison with other countries from Europe and with USA
15:00-15:30	**Coffee break**	
15:30-17:00	**POSTER SESSION**	

30.8.2022		
9:30-11:00	**Lectures**	**Chairmen: Prof. Yana Topalova and Boyko Tsyntsarski**
9:30-10:00	**L15 Invited speaker** **Prof. Yana Topalova**	Scientific and Technological Achievements of Center of Competence ”Clean Technologies for Sustainable Environment – Water, Waste, Energy for Circle Economy”
10:00-10:15	**L16** Boyko Tsyntsarski	Methods for elemental analysis of carbon materials
10:15-10:30	**L17** Ivanka Stoycheva	TG-DSC analysis of various organic materials
10:30-10:45	**L18** Peter Petrov	Water from mineral springs - composition and healing potential
10:45-11:00	**L19** Gloria Issa	Activated Carbon from used Motor Oils: Synthesis and Application as Supports of Nanosized Fe-Cr Oxides
11:00-11:30	**Coffee break**	
11:30-12:30	**Lectures**	**Chairmen: Nikolay Vassilev and Valentin Nenov**
11:30-11:40	**L20** Hristiyana Kanzova	Capacity of the alien pacific oyster to adapt to the marine environment of the Bulgarian Black Sea area
11:40-11:50	**L21** Huseyin Yemendzhiev	Modified Procedure for Immobilization of Electrochemicaly Active Bacteria on Carbon Cloth Electrodes
11:50-12:00	**L22** Angelina Kosateva	Raman Microscope as powerful tool for the study of carbon materials, biological objects and microorganisms for water purification
12:00-12:10	**L23** Martin Tsvetkov	Mechanochemical synthesis of La1-xCexFeO3 for photo-Fenton-like activation of peroxydisulfate.
12:10-12:20	**L24** Olga Antonova	Strategy and a flexible workflow for biomarker determination and potential for targeted therapy in bladder cancer
12:20-12:30	**L25** Olga Antonova	Distribution of SNPs related to socially-significant disorders in Bulgarian population– a pilot study
12:30-13:30	**Lunch**	
13:30-16:00	**Lectures**	**Chairmen: Prof. Radostina Aleksandrova and Prof. Albena Alexandrova**
13:30-14:00	**L26 Invited speaker** **Prof. Radostina Aleksandrova**	War of the Worlds or Science Strikes Back
14:00-14:15	**L27** Karina Marinova	Metal nanoparticles from medicinal plants with antibacterial effect
14:15-14:30	**L28** Lyudmila Velkova	New Peptides from the Cornu Aspersum Mucus and Mechanism of Antibacterial Action - Proteome Analysis
14:30-14:45	**L29** Nikolay Vassilev	Comparatively study of metabolites profiling of *Helix aspersa* mucus, *Helix lucorum* and *Rapana venosa* hemolymph using 1H NMR and mass spectrometry
14:45-15:00	**L30** Mihaela Belouhova	Fluorescence systems for control of the microbiological processes in the clean technologies
15:00-15:15	**L31** Albena Alexandrova	Oxidative stress indices as integrative tools for assessment of the ecological state of the Black sea coastal ecosystem: the bivalve example
15:15-15:30	**L32** Delka Salkova	Situation and control of echinococcosis in Bulgaria over the last twenty years
15:30-15:40	L33 Anika Alexandrova	Investigation of morphological properties of erythrocytes in experimental models of blood clots in patients with type 2 diabet mellitus, using scanning electron microscope
15:40-15:50	L34 Anika Alexandrova	Examination of morphological and mechanical properties of erythrocytes in patients with type 2 diabet mellitus, using atomic force microscope
15:50-16:00	**L35** Aleksandar Dolashki	Products with snail extract – When science meet business
CLOSING CEREMONY		

POSTER SESSION		
P1	Dessislava Gerginova	Sugar profile of Bulgarian honeys from Black Sea region by NMR
P2	Ekaterina Krumova	Synergistic Antifungal Effect of Eriphia Verrucosa Fractions Combined with Extracts from Gentiana SP AND Thymus Vulgais
P3	Jeny Miteva-Staleva	Antifungal Activities of Natural and Modified Zeolites
P4	Olya Stoilova	Electrospun Poly(3-Hydroxybutyrate) materials for regenerative medicine
P5	Kuentin Radev	Modulating the oxidative stress during Fe-induced oxidative degradation of lecithin and deoxyribose using indole-3-propionic acid hydrazone derivatives and study on their chelating properties
P6	Bilyana Petrova	Investigation of the porous texture of carbon materials obtained from different raw materials and treatment conditions
P7	Yuliana Raynova	Research of Influence of Gamma-Radiation Almonds Nuts
P8	Svetlana Momchilova	Fat content, fatty acids composition and quality of 52 genotypes of Camelina sativa grown in Bulgaria
P9	Zhanina Petkova	Phenolic compounds and antioxidant activity of dry rose extract, a new by-product from rose concrete production
P10	Viktoria Ivanova	Chemical composition and antioxidant capacity of the fruit skins of European plum cultivar “Čačanska Lepotica” grown on different rootstocks
P11	Kalina Danova	Anticancer Potential and Main Phytochemical Components of Wild collected Hypericum Species from Bulgaria
P12	Adriana Slavova-Kazakova	Buckwheat (Fagopyrum Esculentum Moench) By-Products as a Source of Antioxidant Compounds
P13	Marina Marcheva	Microbial Consortium with Nitrogen-Fixing and Mineral Solubulizing Activities for the Growth of Camelina (Camelina sativa L. Crantz)
P14	Marina Marcheva	Developing Intercropping Systems with Camelina to Increase the Yield and Quality Parameters of Local Underutilized Crops –Bulgarian Participation in New Organic Project
P15	Lubomir Petrov	Biologically Active Substances Isolated from Marine Organisms with Potential Role in the Therapy of Pathological Conditions with Oxidative Stress Etiology
P16	Elina Tsvetanova	Oxidative Stress as a Measure of the Adaptive Capacity of Ecologically Important Fish to Different Environmental Conditions of the Bulgarian Black Sea
P17	Dragomira Nikolova	Rare Exome variants Associated with Frontotemporal Dementia in Bulgarian Patients
P18	Marta Mihaylova	The Genetic Architecture of Unspecified Dementia - Rare Variants
P19	Sena Karachanak-Yankova	Detection of Pathogenic Variants in Alzheimer’s Disease Related Genes in Bulgarian patients by Pooled Whole Exome Sequencing
P20	Irena Zagranyarska	Diarylethers and Their Analogues as Potential Antiviral Agents – Synthesis and computational Studies
P21	Inna Sulikovska	Extraction and Antitumor Activity of High-Molecular Hydrolyzable Galootannins from *Cotinus Coggygria Scop.*
P22	Zhanina Petkova	Synthesis Of New Arylidenecamphors And Pyrimidines With Camphane Skeleton – Structural Characterization And Complex Evaluation Of Their Antibacterial Activity And Cytotoxicity

Virtual Sessions

Virtual Session

HALL-1

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Prof. Dr. Yusuf Kağan KADIOĞLU

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Aslıhan KORKMAZ Prof. Dr. Yusuf Kağan KADIOĞLU	*Ankara university, Türkiye*	RAMAN CHARACTERISTICS OF MINERALS IN METAMORPHISM PROCESSES: Fillosilicate Minerals
Güldane AKILLI Yusuf Kağan KADIOĞLU	*Ankara university, Türkiye*	DETERMINATION OF GRAPHITE MINERAL PROPERTIES BY RAMAN SPECTROSCOPY: KIRKLARELI DEMIRKÖY, TURKIYE
Fatma Nur ERCAN Yusuf Kağan KADIOĞLU	*Ankara university, Türkiye*	INVESTIGATION OF KARSTIFICATION AND CAVE FORMATIONS BY RAMAN AND SEM METHODS: TULUMTAŞ CAVE, ANKARA, TURKIYE
Büşra ÇELİK Dr.Kıymet DENİZ	*Ankara university, Türkiye*	PROPERTIES AND USAGE OF PERLITES OF CUBUK (ANKARA-TÜRKİYE) AS INDUSTRIAL RAW MATERIAL
Asst. Prof. Dr. Musa Avni AKÇE Prof. Dr. Yusuf Kağan KADIOĞLU	*Nevşehir Hacı Bektaş Veli University,* *Ankara university, Türkiye*	RAMAN SPECTROSCOPIC CHARACTERISTICS OF MELANITE BEARING FOID SYENITES: YOZGAT INTRUSIVE COMPLEX
Nural Merve ERTEKİN Prof. Dr. Yusuf Kağan KADIOĞLU	*Ankara university, Türkiye*	EFFECTS OF HYDROTHERMAL ALTERATION OF ULTRAMAFIC ROCKS ON BIODIVERSITY: BEYNAM FOREST, ANKARA, TURKIYE
Awaleh Djama ILTIREH Prof. Dr. Yusuf Kağan KADIOĞLU	*Ankara University, Türkiye*	PETROGENESIS OF INKI-GARAYTO BASALTS OF ASAL-GHOUBBET AREA,REPUBLIC OF DJIBOUTI
Prof. Dr. Yusuf Kağan KADIOĞLU Dr. Kiymet Deniz Prof. Dr. Tamer Koaralay Dr. Bahattin Güllü	*Ankara University, Türkiye*	COMPARISON OF COARSE AND FINE CRYSTALLINE PYROXENES WITHIN THE KARAKAYA GABBRO, CENTRAL ANATOLIA
Emine Sernur DURSUN Dr. Kıymet DENİZ	*Ankara University, Türkiye*	THE PROPERTIES OF THE IGNEOUS GRAVELS WITHIN THE ASMABOĞAZI FORMATION (AKSARAY), CENTRAL ANATOLIA, TURKEY

Virtual Session

HALL-2

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Prof. Dr. Sacide PEHLİVAN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assist.Prof. Dr. Nurten Elkin Prof. Dr. A.Emel Önal Prof.Dr. Bedia A.Özyıldırım Prof.Dr. Gülbin Gökçay	*Istanbul University, Türkiye*	RESEARCH ON SERVICES REQUESTS AND UTILISATION STATUS AND SATISFACTION IN A FAMLIY HEALTH CENTER IN ISTANBUL
Uzm. Dr. Ahmet KÜÇÜK Prof. Dr. Erkan TOPKAN	*Adana Baskent University, Türkiye*	HIGH PRE-CHEMORADIOTHERAPY PAN -IMMUNE- INFLAMMATORY VALUE MEASURES INDICATE DIMINISHED SURVİVAL OUTCOMES IN LOCALLY ADVANCED NASOPHARYNGEAL CANCERS
Fırat AKAT Yakup TATAR Hümeyra ÇELİK Hakan FIÇICILAR Ali Doğan DURSUN Metin BAŞTUĞ	*Ankara University, Türkiye*	THE EFFECT OF EXERCISE ON ISCHEMIA/REPERFUSION INJURY AND MYOKINE PROFILE IN DIABETIC CARDIOMYOPATHY
Yasemin OYACI Mehmet BEKERECİOĞLU Sacide PEHLİVAN	*Istanbul University, Türkiye*	INVESTIGATING THE rs33989964 VARIANT AND THE PROMOTER REGION METHYLATION STATUS OF SOCS-1 GENE IN TURKISH PATIENTS WITH MICROTIA
Hemşire Arif Ertuğ TAŞKIN Assoc.Prof.Dr. Selda ÇELİK Assoc.Prof.Dr. Feride TAŞKIN YILMAZ	*University of Health Sciences, Türkiye*	THE EFFECT OF THE COVID-19 PANDEMIC ON THE PROCESS OF APPLICATION TO HEALTH INSTITUTION OF PATIENTS WITH ACUTE MYOCARDIC INFARTUS
Assoc.Prof.Dr. Feride TAŞKIN YILMAZ Assoc.Prof.Dr. Selda ÇELİK	*University of Health Sciences, Türkiye*	THE RELATIONSHIP WITH EMERGENCY SERVICE ADMISSION AND HOSPITALIZATION OF DIABETES EDUCATION IN PATIENTS WITH TYPE 2 DIABETES
Müberra YILDIZ Aslı YİĞİT	*Suleyman Demirel University Türkiye*	NUTRIGENETIC AND NUTRIGENOMIC APPROACHES TO IMPROVE CARDIOMETABOLIC HEALTH
Müberra YILDIZ Aslı YİĞİT	*Suleyman Demirel University, Türkiye*	EFFECTS OF TIME-RESTRICTED FEEDING MODEL IN OBESITY TREATMENT
Dr. Cengiz CEYLAN	*Inonu University, Türkiye*	IMPORTANCE OF LAPAROSCOPIC SURGERY IN PEPTIC ULCER PERFORATIONS
Prof. Dr. Sacide PEHLİVAN Assoc.Prof.Dr. Seda TURAL ÖNÜR Yasemin OYACI Dr. Neslihan Boyracı Prof. Dr. Mustafa Pehlivan	*Istanbul University, Türkiye*	INVESTIGATED THE IL-1 RECEPTOR ANTAGONIST (IL-1RN) AND INTERLEUKIN-4 (IL-4) VNTR PROFILES IN PULMONARY EMBOLISM PATIENTS

Virtual Session

HALL-3

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Prof. Dr. Şükrü KARATAŞ

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Prof. Dr. Şükrü KARATAŞ	*Kahramanmaraş Sütçü İmam University, Türkiye*	TEMPERATURE-DEPENDENT ANALYSIS OF THE IDEALITY FACTOR AND BARRIER HEIGHTS OF AL/GO/P-TYPE SI METAL SEMICONDUCTOR STRUCTURES
Prof. Dr. Şükrü KARATAŞ	*Kahramanmaraş Sütçü İmam University,Türkiye*	TEMPERATURE-DEPENDENT ANALYSIS OF THE IDEALITY FACTOR AND BARRIER HEIGHTS OF AL/(GO:PTCDA)/P-TYPE SI METAL SEMICONDUCTOR STRUCTURES
Ahmet TUNA Assist. Prof. Dr. Serap YİĞİT GEZGİN Assist. Prof. Dr. Yasemin GÜNDOĞDU Prof. Dr. Hamdi Şükür KILIÇ	*Selcuk University, Türkiye*	SIMULATION AND DESIGN OF A HG/CD/TE HOMOJUNCTION INFRARED PHOTODETECTOR
Assoc.Prof.Dr. Uğur DURAN	*Iskenderun Technical University, Türkiye*	ON GOULD-HOPPER BASED FULLY DEGENERATE TYPE2 POLY-GENOOCHI POLYNOMIALS WITH A q PARAMETER
Assoc.Prof.Dr. Uğur DURAN	*Iskenderun Technical University, Türkiye*	ON HERMITE-BELL BASED STIRLING NUMBERS OF THE FIRST AND SECOND KINDS
Dr. Bircan ÇALIŞIR	*Firat University, Türkiye*	INVESTIGATION OF DL PERFORMANCE FOR OFDM AND NOMA SYSTEMS
Cem GÜLER Asst. Prof. Dr. Sena Esen BAYER KESKİN	*Kirklareli University, Türkiye*	A NOVEL TWO-ELEMENT ARRAY WITH DGS FOR 5G APPLICATIONS
Sedat AKTAŞ Egemen ULUSOY Prof. Dr. Remzi YILDIRIM	*Yildirim Beyazit University, Türkiye*	TACTICAL: RAM IMAGE RETRIEVAL IN LINUX USING PROTECTED MODE ARCHITECTURE'S PAGING TECHNIQUE
Asst. Prof. Muzaffer ASLAN Assoc. Prof. Ömer Faruk ALÇİN	*Bingöl University, Türkiye* *Turgut Özal University, Türkiye*	CLASSIFICATION OF HOUSEHOLD APPLIANCES BY STATISTICAL FEATURES

Virtual Session

HALL-4

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Prof. Dr. Ahmet Niyazi ÖZKER

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Prof. Dr. Ahmet Niyazi ÖZKER	*Bandirma Onyedi Eylul University, Türkiye*	ISSUES AND POST CORONA-19 FISCAL PROJECTIONS TO GLOBAL FISCAL RISK MANAGEMENT IN EMERGING ECONOMIES
Assist.Prof.Dr.Muhammed SAMANCI	*Yozgat Bozok University*	IMPORTANCE OF PUBLIC FINANCE IN EXTRAORDINARY PERIODS: CASE OF TURKEY
Prof. Dr. Özcan SEZER Leyla UMA	*Zonguldak Bulent Ecevit University,*	AN ASSESSMENT OF THE FUNCTION OF CITY COUNCILS IN THE DEVELOPMENT OF LOCAL POLITICAL PARTICIPATION
Öğr. Gör. Merve KAPLAN Assist.Prof.Dr.Bülent DEMİRAĞ Assoc.Prof.Dr. Sinan ÇAVUŞOĞLU	*Gaziantep University Bingol University,*	EXAMINING THE RELATIONSHIP BETWEEN BRAND IMAGE, BRAND PERSONALITY, BRAND TRUST AND BRAND LOYALTY: A RESEARCH FOR CONSUMERS USING DOMESTIC CAR BRANDS MANUFACTURED IN TURKEY
Pavlo SELEZEN	*State Tax University Irpin, Ukraine*	FEATURES OF DOMESTIC REGULATION OF SPECIFIC CASE MUTUAL AGREEMENT PROCEDURE ON THE BASIS OF DOUBLE TAXATION TREATIES IN UKRAINE
Ass. Prof. Viswan M.G. Asst. Prof. Dr. Sreeja Sukumar K	*Department of Commerce, SSV College, Valayanchirangara, Ernakulam, Kerala, India*	KEY DETERMINANTS OF IPO INITIAL RETURNS IN INDIA
Asst. Prof. László, TÖRÖK	*University of Debrecen, Enterprise Debrecen, Hungary,*	THE ROLE OF HOUSEHOLDS AND NON-PROFIT ORGANIZATIONS IN HELPING THEM FINANCING THE STATE'S GROSS CONSOLIDATED DEBT IN THE EUROPEAN UNION
Nahide DAKHCH	*Ibn Tofail University, LRSGO Laboratory, ENCG, Kénitra, Morocco*	CONTRIBUTION TO A STUDY OF THE DETERMINANTS OF LOGISTICS PERFORMANCE: DEFINITION AND MEASUREMENT AN INVESTIGATION IN THE FOOD RETAILING SECTOR
Adirek Vajrapatkul Piyasiri Ruangsrimun	*School of Economics, Sukhothai Thammathirat Open University, Thailand*	MODELING AND FORECASTİNG THE TOP 5 CRYPTOCURRENCIES' RETURN
Adirek Vajrapatkul Piyasiri Ruangsrimun	*School of Economics, Sukhothai Thammathirat Open University, Thailand*	THAILAND'S EFFICIENCY AND PRODUCTIVITY IN DRIVING GDP

Virtual Session

HALL-5

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Asst. Lect. Kajeen Hassan Jasim

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Shanu M A Mbochi C. A Labbo Z	*Shehu Idris College of Health Sciences and Technology, Makarfi, Kaduna State, Nigeria*	COMPARATIVE ASSESSMENT OF GESTATIONAL WEIGHT GAIN, SUPPLEMENT USED AND IRON STATUS AMONG PREGNANT WOMEN FROM PUBLIC AND PRIVATE HOSPITALS IN KADUNA STATE, NIGERIA
Mouad MOUHSIN Mustapha OUBENALI Samir CHTITA Mohamed MBARKI	*Hassan II University of Casablanca Morocco*	QSAR AND DRUG-LIKENESS STUDIES OF THIADIAZOLE DERIVATIVES AGAINST LUNG CANCER
Fattouche Maroua Belaidi Salah Soualmia Fatima Samir Chtita	*University of Biskra, Biskra, Algeria.*	DRUG DESIGN OF ISOTHIAZOLE DERIVATIVES AGAINST HCV IN A QSAR STUDY USING ARTIFICIAL NEURAL NETWORKS
I. AMEZIANE EL HASSANI H. ASSILA, K. KARROUCHI F. LAZRAK Y. RAMLI M. ANSAR	*Mohammed V University, Rabat, Morocco*	SYNTHESIS AND DESIGN OF NEW PYRAZOLE DERIVATIVES WITH POTENTIAL PHARMACOLOGICAL ACTIVITIES
Spartak Yanakiev Stefan Velikov Nadejda Kostova-Kamburova Mila Moskova Elina Micheva	*Medical college "Y. Filaretova", Medical University – Sofia, Sofia, Bulgaria*	ATTITUDES OF THE STUDENTS OF THE "DENTAL TECHNICIAN" SPECIALTY AT MEDICAL COLLEGE "Y. FILARETOVA" ON THE USE OF CAD/CAM TECHNOLOGIES
Ivaylo Slavchev Maria Schröder Maria Petrova Zlatina Vlahova Georgi M. Dobrikov Evdokia Pasheva Iva Ugrinova	*Bulgarian Academy of Sciences Sofia, Bulgaria*	IN VITRO ANTICANCER ACTIVITY OF TWO CAMPHOR DERIVATIVES AGAINST LUNG CANCER CELLS
Asst. Lect. Kajeen Hassan Jasim Asst. Prof. Suad Yousif Alkass Asst. Lect. Husni Muhammed Hasan Asst. Prof. Yousif Ali Prof. Daniele Suzete Persike de Oliveira	*College of Health Science, University of Cihan, Kurdistan Region,Iraq.*	INTERNALLY DISPLACED YAZIDE WOMEN IN NORTHERN IRAQ: PTSD AND HORMONAL EVALUATION

Virtual Session

HALL-6

SESSION-1

Date and Time (Sofia, Ankara)

29.08.2022

10:00-12:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Dr. Abbas KARAAĞAÇLI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Yelda EGELİ	*Maltepe University Türkiye*	THE PROCESS OF BUILDING A DESIGNER BRAND THE EXAMPLE OF BARBAROS APAYDIN AND GÖKHAN SLOW
Mohammed ISA ISA Assist. Prof. Dr. Çilen ERÇİN	*Near East University Mersin, Türkiye*	EVALUATION OF QUALITY OF PUBLIC OPEN SPACES FOR THE ELDERLYPEOPLE: A CASE STUDY OF BARIŞ MANÇO PARK, TRNC
Sevil Aliyeva	*Azerbaijan State Academy of Fine Art Baku, Azerbaijan*	EAST AND WEST: ROUTES OF CROSSING IN MODERN FASHION
Abbas KARAAĞAÇLI Aleyna BİNAY	*Giresun University,Türkiye*	SURPRISING ARCHITECTURAL FEATURES AND VITAL FUNCTIONS OF IMERA MONASTERY AND SIMILAR HISTORICAL REMAINS IN GÜMÜŞHANE HELL CREEK VALLEY CANYON
Assoc.Prof.Dr. Akın TEMÜR	*Ondokuz Mayıs University, Türkiye*	SAMSUN-VEZİRKÖPRÜ NEOKLAUDIOPOLIS ANCIENT CITY AND TERRITORY SURVEYS AND RESULTS
Prof. Dr. İsmail BAKAN Halil İbrahim OLUCAK	*Kahramanmaras Sutcu Imam University, Türkiye*	IS ORGANIZATIONAL CITIZENSHIP BEHAVIOR EFFECTIVE IN INNOVATIVE WORK BEHAVIOR?
Assist. Prof. Dr. Mehmet Emin KALGI	*Ardahan University, Türkiye*	RELIGIOUS LIFE IN TERMS OF SOME VARIABLES (AGE AND GENDER)
Dr. Çiğdem YEL	*Sivas Cumhuriyet University*	DIGITILITASATION IN THE FIELD OF HEALTH
Ömer AKSOY Dr. Öğr. Rahmi BAKİ	*Aksaray University*	FACTORS AFFECTING USERS & BEHAVIORS FOR ONLINE HOTEL BOOKING
Mert Kutluk	*Istanbul Bilgi University*	REDEFINING THE PHOTOGRAPHER IN THE AGE OF COMPUTATIONAL PHOTOGRAPHY. CASE STUDY ON SMARTPHONE PHOTOGRAPHY APPLICATIONS

Virtual Session

HALL-1

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Prof. Dr. İhsan ÇAPCIOĞLU

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Shabab Sarvar	*Jawaharlal Nehru University (JNU), New Delhi, Republic of India*	ASIAN SECURITY PARADIGM: A CASE OF COMPETING INTERESTS OF INDIA AND CHINA
Dr. Seçil Özdemir	*Bartin University, Türkiye*	THE PRACTICES OF MOHAMMAD REZA SHAH: THE INFRASTRUCTURE OF A REVOLUTION
Prof. Dr. İhsan ÇAPCIOĞLU Aygün ALİYEVA	*Ankara university, Türkiye*	A SOCIOLOGICAL ASSESSMENT ON THE CONCEPTIONS OF VIOLENCE, WAR AND TERROR
Zeynep Bilge ESEN	*Ankara university*	THE IMPORTANCE OF BOSPHORUS IN TERMS OF BLACK SEA COASTAL STATES AND THE EVALUATION OF THE TRANCID PASSAGE REGIME
Assos. Prof. Dr. İNCİ ERDOĞDU	*Ankara university*	THE IMPORTANCE OF CHINA'S & ONE BELT AND ROAD & PROJECT FOR BLACK SEA COUNTRIES: THE ROLE OF CONFUCIUS INSTITUTES IN THIS PROJECT
Assoc.Prof.Dr. Ensar YILMAZ	*Istanbul Medeniyet University,*	A SOCIOLOGICAL ASSESSMENT OF THE RELATIONSHIP BETWEEN URBANIZATION AND CRIME
Associate Professor NAMAZOV NIZAM RZA	*Sumgait State University,Azerbaijan*	ANTIMICROBIAL PROPERTIES OF COMPOSITION OF ESSENTIAL OILS OF DIFFERENT ESSENTIAL PLANTS WITH DIFFERENT MAJOR COMPONENTS AND WHITE NAFTALAN (NAPHTHALANE) OIL

Virtual Session

HALL-2

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Dr. Öznur DÜLGER KUTLU

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. Öznur DÜLGER KUTLU	*Yıldız Technical University,*	SYNTHESIS, CHARACTERIZATION AND PHOTOPHYSIOCHEMICAL INVESTIGATION OF MAGNESIUM PHTHALOCYANINE WITH QUINOLINE FUNCTIONAL GROUPS
Assist. Prof. Dr. Okan UÇARLI	*Giresun University,*	INVESTIGATION OF CATALYTIC EFFECT OF NITRITE ON COBALT-HYDROXYNAPHTHOL BLUE COMPLEX WITH GRAPHITE AND GRAPHENIZED ELECTRODE BY ELECTROCHEMICAL METHODS
Mina Abdulaal ABDULAZEEZ Assist. Prof. Dr. Ayşe Elif BÜYÜKBAYRAM	*Karabük University,*	EXTRACTION AND PURIFICATION OF POLYPHENOL OXIDASE ENZYME FROM SIRTIGÖKÇE MUSHROOM (Russula Cyanoxantha, L.)
Dr.Eng. AnaMaria BACIU Dr.Eng. Corina ORHA PhD. Eng. Sergiu VASILIE PhD. Eng. Mircea Nicolaescu Prof. Florica MANEA	*Politehnica University of Timisoara, Romania, National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara,Romania,*	COMPARATIVE ASSESSMENT OF POROUS UNDOPED AND DOPED (Sb, La, F) TIN OXIDES FOR DEGRADATION AND MINERALIZATION OF DOXORUBICIN FROM WATER
Lect. Aniela POP PhD.Eng. Mina Ionela POPESCU Dr.Eng. Corina ORHA Dr.Eng. AnaMaria BACIU Prof. Florica MANEA	*National Institute Timisoara,Romania*	ASSESSMENT OF COMMERCIAL GRANULAR ACTIVATED CARBON FOR SORPTION OF CAPECITABINE FROM WATER
Dr. Rui J.C. FERNANDES Prof. Raul D.S.G. CAMPILHO Dr. Rui B.P.M. MARQUES Dr. B. AUGUSTO	*Instituto Politécnico do Porto, Porto, Portugal*	DEVELOPMENT OF A TESTING SETUP TO ESTIMATE THE PERMEABILITY OF COMPOSITE MATERIALS

Virtual Session

HALL-3

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Assoc. Prof. Lyubka PASHOVA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Asst. Andrey POPATANASOV Asst. Asen ASENOV	*Bulgarian Academy of Sciences, Institute of Neurobiology, Sofia, Bulgaria*	CANOPY EFFECTS ON THE DISTRIBUTION OF ORCHIS PURPUREA HUDS. IN COAST AREAS NEAR PRIMORSKO
Asst. Andrey POPATANASOV Asst. Asen ASENOV	*Bulgarian Academy of Sciences, Institute of Neurobiology, Sofia, Bulgaria*	ORCHID FLORA OF THE SOUTHERNMOST BULGARIAN BLACK SEA COAST FLORISTIC REGION – CURRENT STATUS AND THREATS
Assoc. Prof. Lyubka PASHOVA Assoc. Prof. Liliya DIMITROVA Asst. Prof. Emil OYNAKOV Asst. Prof. Davis DINKOV	*Bulgarian Academy of Sciences Sofia, Bulgaria*	REVIEW OF TSUNAMI RESEARCH ON THE BULGARIAN BLACK SEA COAST
Dr. Aylin GEÇER	*Ankara University,*	INTERPRETATION OF CLAY, GRAIN SIZE, PETROPHYSICAL PARAMETERS, AND ATR-FTIR SPECTRA IN SANDSTONE RESERVOIR, NORTHWEST OF THRACE BASIN, TURKEY
Assoc. Prof. Dr. Arif PARMAKSIZ	*Harran University, Türkiye*	PHYLOGENETIC ANALYSIS OF CARASOBARBUS LUTEUS (HECKEL, 1843) LIVING IN ATATÜRK DAM LAKE BASED ON MTDNA COI SEQUENCES
Assoc. Prof. Dr. Arif PARMAKSIZ	*Harran University, Türkiye*	PHYLOGENETIC ANALYSIS OF CARASOBARBUS LUTEUS (HECKEL, 1843) LIVING IN ATATÜRK DAM LAKE BASED ON mtDNA cyt b SEQUENCES
Maria PARASCHIV Carmen Gabriela CONSTANTIN Corina IȚCUȘ Laura POPA Manuela SIDOROFF	*University Politehnica of Bucharest, Bucharest, Romania*	EVALUATION OF THE WATER QUALITY OF THE DANUBE RIVER (THE SECTION CĂLĂRAȘI - BORCEA BRANCH – HÂRȘOVA - VADU OII, ROMANIA) - INITIAL STUDY
Carmen Gabriela CONSTANTIN Aurora DOBRIN Andrei PETRE Muguraș i CONSTANTIN Maria PARASCHIV	*University Politehnica of Bucharest, Bucharest, Romania*	FESTUCA ARUNDINACEA – A POTENTIAL CANDIDATE FOR RENEWABLE ENERGY

Virtual Session

HALL-4

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Ophelia KANEVA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Svetlana Məmmədova	*Azerbaijan State Pedagogical University, Azerbaijan*	POSSIBILITIES OF PROCESSING MODAL VERBS IN ENGLISH
Asst. Prof.Ph. Elizaveta SAGAJDACHNAYA Asst. Prof.Ph. Victoria CHEREMINA	*Rostov State Economic University, Rostov on Don, Russia*	FEATURES OF THE SPEECH STRATEGIES OF THE RUSSIAN PRESIDENT V.PUTIN
Asst. Prof.Ph. Elizaveta SAGAJDACHNAYA Dr. Larissa ABROSSIMOVA Elena MARTINENKO	*Southern Federal University, Sadovaya St., Rostov on Don, Russia*	THE INTERCONNECTION OF INTERNAL MOTIVATION OF STUDENTS AND THE PREFERRED TYPES OF THE TASKS IN A DIGITAL ENVIRONMENT OF AN ENGLISH CLASS
Mammadova Asmetkhanim Bayahmad gizi	*Azerbaijan State Pedagogical University, Azerbaijan*	HOMOPHONES – IN PHONETIC, DISTRIBUTIVE RESEARCHES
Asst. Prof.Ph. Elizaveta SAGAJDACHNAYA Elena RYABIKINA	*Rostov State Economic University Rostov on Don, Russia*	THE USE OF NEURO-LINGUISTIC PROGRAMMING TECHNOLOGIES IN EDUCATIONAL PODCASTS AND ADVERTISING TITLES OF EDUCATIONAL PLATFORMS
Ophelia KANEVA	*Plovdiv University, Bulgaria*	HORIZONTAL SUPPORT FOR TEACHERS THROUGH MODERN APPROACHES
Fidan NƏSİROVA	*Azerbaijan National Academy of Science, Azerbaijan*	FATHER OF IRANIAN CHILDREN'S POETRY – MOSTAFA RAHMANDOOST
Alsu SHAKMAEVA	*University of Warsaw, Faculty of Education Warsaw, Poland*	MATHEMATICS AND EMOTIONS: MATHEMATICS ANXIETY AND AN EXPLORATION OF INTERVENTION STRATEGIES
MOMOZOKU, Umaru Salihu TIJJANI, Ahmed Asabe AUDU, Abdulmalik Onubedo	*Federal College of Education, Kontagora-Niger State*	PROBLEMS INHIBITING MATHEMATICS EDUCATION IN PRIMARY SCHOOLS
Professor Lili Petriashvili	*Technical University of Georgia*	APPLICATION OF ARTIFICIAL INTELLIGENCE IN BIOINFORMATICS

Virtual Session

HALL-5

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Assoc.Prof.Dr. Ahmet FEYZİ

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assist.Prof.Dr.Gülşah ÖZDEMİR	*Sivas Cumhuriyet University, Türkiye*	THE CHANGE OF DETECTION AND EDUCATION OF GIFTED/TALENTED CHILDREN IN THE VISUAL ART FROM THE RENAISSANCE TO THE PRESENT
Assoc.Prof.Dr. Esen DURMUŞ Dilan KURUYER Müşerref Kübra KINACI	*Firat University, Türkiye*	THE ANALYSIS OF THE STUDIES CONDUCTED IN TURKEY ON EVIDENCE-BASED EDUCATION
Assist.Prof.Dr.Cüneyt TAŞKIN Assoc.Prof.Dr. Umut CANLI	*Trakya University, Türkiye*	ADAPTATION STUDY OF THE LEISURE ATTITUDE SCALE TO THE FIELD OF SPORTS SCIENCES
Assist.Prof.Dr.Cüneyt TAŞKIN Assoc.Prof.Dr. Umut CANLI	*Trakya University, Türkiye*	ATTITUDES OF SPORTS SCIENCES STUDENTS ABOUT LEISURE TIME ACTIVITIES
Assist.Prof.Dr.Seda SABAH Prof. Dr. Soner ÇANKAYA	*Amasya University Ondokuz Mayıs University, Türkiye*	INVESTIGATION OF SELF FEAR LEVELS OF AMATEUR AND PROFESSIONAL ATHLETES
Assoc.Prof.Dr. Esen DURMUŞ Müşerref Kübra KINACI Dilan KURUYER	*Firat University, Türkiye*	THE OPINIONS OF TEACHER CANDIDATES ON SUSTAINABLE ECOLOGICAL RESPONSIBILITY
Assoc.Prof.Dr. Ahmet FEYZİ Oğuzhan Şafak KURT	*Ataturk University, Türkiye*	A FIELD STUDY ON THE DETERMINATION OF BAĞLAMA PLAYING TERMS USED IN BAĞLAMA EDUCATION BUT NOT IN THE LITERATURE
Assoc.Prof.Dr. Ahmet FEYZİ Oğuzhan Şafak KURT	*Ataturk University, Türkiye*	AN EXAMPLE FIELD STUDY ON THE DETERMINATION OF BALGING TERMS THAT HAVE THE SAME MEANING BUT WITH DIFFERENT NOMINATIONS

Virtual Session

HALL-6

SESSION-2

Date and Time (Sofia, Ankara)

29.08.2022

13:00-15:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Dr. Caner GÜNERBÜYÜK

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. Caner GÜNERBÜYÜK Prof. Dr. Ali Fahir ÖZER	*Koç University,*	CLINICAL OUTCOMES FOLLOWİNG CERVICAL OPEN-DOOR LAMINOPLASTY FOR 24 PATIENTS WITH CERVICAL SPONDYLOTIC MYELOPATHY
Assist. Prof. Iskra Sainova Assist. Prof. Iliana Ilieva	*Bulgarian Academy of Sciences, Bulgarian*	CHANGES IN THE LEVELS OF ANTI-OXIDANT PEPTIDE GLUTATHIONE IN VARYING IN VITRO CONDITIONS
Vanya MANTAREVA Ivan ILIEV Inna SULIKOVSKA Ivan ANGELOV	*Bulgarian Academy of Sciences, Sofia, Bulgaria*	COBALT PORPHYRINOID COMPLEX (B12) WITH OPTIONAL NON-PHOTODYNAMIC ANTICANCER ACTIVITY
Aleksandra SANČANIN Sofija SANČANIN Asst. Prof. Branislav SANČANIN	*University - Belgrade, Faculty of Management, Sremski Karlovci, Serbia*	THE SIDE EFFECTS OF BREAST CANCER RADIOTHERAPY
Rodolfo Reda Alessio Zanza Dario Di Nardo Marco Seracchiani Luca Testarelli	*University of Rome La Sapienza Rome*	CYTOTOXICITY ANALYSIS OF TWO DIFFERENT TREATED PORCINE DERMAL MATRICES
Herbert Tumusiime Alex Barakagira Amos Ronald Kalukusu	*Herbert Tumusiime; King Ceasor University Uganda*	IMMUNIZATION COVERAGE AGAINST DISEASES AMONG CHILDREN AGED FIVE YEARS AND BELOW IN MAWOGOLA HEALTH SUB-DISTRICT, SEMBABULE DISTRICT, UGANDA
Margaretha MONALISA Mada Triandala SIBERO Agus SABDONO	*Diponegoro University, İndonesia*	GORGONIAN Ellisella sp.-ASSOCIATED BACTERIA AS A PROMISING ANTIPATHOGENIC AGENT AGAINST SKIN DISEASES IN HUMANS
Vera Renta Siahaan Yeyen Damanik Renny Sinaga	*Polytechnic of Health Ministry of Medan, Indonesia*	DIFFERENCES IN THE KNOWLEDGE OF PREGNANT WOMEN ABOUT EXCLUSIVE BREASTFEEDING IN THE HEALTH DEVELOPMENT CLINIC IN SIMALUNGUN DISTRICT
Surayya BABIROVA	*Azerbaijan State Pedagogical University, Baku, AZ1000, Azerbaijan*	SOME SPECIFICS OF TRANSPORTATION OF ILL AND INJURED

Virtual Session

HALL-1

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Prof. Dr. İsmühan POTOĞLU ERKARA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assist.Prof.Dr. Sultan ACUN Prof. Dr. Hülya GÜL	*Amasya University, Suleyman Demirel University,Türkiye*	ANTIOXIDANT ACTIVITIES AND TOTAL PHENOLIC CONTENTS OF KARAKILÇIK WHEATS GROWN IN DIFFERENT REGIONS OF TURKEY
Dr. Huzur DEVECİ	*Tekirdag Namık Kemal University, Türkiye*	ESTIMATION OF WHEAT YIELD UNDER COMBINATIONS OF DIFFERENT CLIMATE PARAMETERS WITH THE LINTUL MODEL IN THE THRACE REGION
Vesile YALÇIN Assoc.Prof. Dr. Hülya TORUN	*Duzce University, Türkiye*	THE PROTECTIVE EFFECT OF INDOLE-3-ACETIC ACID AGAINST CADMIUM STRESS IN REDROOT PIGWEED (Amaranthus retroflexus L.)
Vesile YALÇIN Assoc.Prof.Dr. Hülya TORUN	*Duzce University, Türkiye*	THE EFFECTS OF EXOGENOUS MELATONIN ON DROUGHT TOLERANCE IN SUNFLOWER (Helianthus annuus L.)
Prof. Dr. İsmühan POTOĞLU ERKARA Assoc. Prof. Dr. Okan SEZER	*Eskişehir Osmangazi University, Türkiye*	PALYNOMORPHOLOGICAL CHARACTERIZATION OF THE KAZDAĞI RARE ENDEMIC Armeria trojana Bokhari & Quézel
Prof. Dr. İsmühan POTOĞLU ERKARA Assoc. Prof. Dr. Okan SEZER	*Eskişehir Osmangazi University, Türkiye*	COMPARATIVE POLEN MORPHOLOGY OF SOME Jasminum L. (Oleaceae) TAXA GROWING IN ESKİŞEHİR
Asst. Prof. İsmail NANELİ	*Sakarya Applied Sciences University, Türkiye*	DETERMINATION OF ENGINEERING CHARACTERISTICS OF SOME VARIETIES OF DENT CORN (Zea mays indentata)
Assist.Prof.Dr.Sibel BÖLEK	*University of Health Sciences, Türkiye*	DETERMINATION OF BIOACTIVE COMPOUNDS IN TRABZON PERSIMMON PITS AND INVESTIGATION OF POTENTIAL USES IN FUNCTIONAL FOOD PRODUCTION
Assist.Prof.Dr.Sibel BÖLEK	*University of Health Sciences, Türkiye*	EFFECTS OF FLUIDIZED BED ROASTING ON BIOAVAILABILITY AND ANTINUTRITIONAL FACTORS OF SACHA INCHI (Plukenetia volubilis)
S.N. Okey I.C.Okoli O.N. Okey	*Federal University of Technology, Nigeria*	PERFORMANCE AND CARCASS CHARACTERISTICS OF BROILER CHICKENS FED DIETS SUPPLEMENTED WITH AGRICULTURAL WASTE-DERIVED ACTIVATED CHARCOAL

Virtual Session

HALL-2

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Dr. Yıldırım İsmail Tosun

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assoc.Prof.Dr. Tacettin GEÇKİL Mehmet Mahmut TANYILDIZI Ceren Beyza İNCE	*Inonu University Türkiye*	THE EFFECT OF BLAST FURNACE SLAG-ADDITIVE CONCRETES ON ROAD PAVEMENT THICKNESS FOR DIFFERENT BASE SOILS
Assoc.Prof.Dr. Tacettin GEÇKİL Mehmet Mahmut TANYILDIZI Ceren Beyza İNCE	*Inonu University Türkiye*	INVESTIGATION OF THE USAGE OF FIBER CONCRETE WITH BLAST FURNACE SLAG (BFS) ADDITIVES AS ROAD PAVEMENT ON VERY WEAK BEARING STRENGTH SOIL
Öznur Biricik Burcu Aytekin Ali Mardani	*Bursa Uludag University, Türkiye*	UTILIZATION OF WASTE POWDER IN CEMENTITIOUS SYSTEMS
Burçin SALTIK Assoc.Prof.Dr. Mehmet YENİOCAK	*Mugla University, Türkiye*	DETERMINATION OF SOME MECHANICAL PROPERTIES OF WOOD MATERIALS DRY WITH MICROWAVE TECHNOLOGY
Dr. Yıldırım İsmail Tosun	*Şırnak University, Türkiye*	SYNGAS H 2 REFORMING IN DOUBLE COLUMN WASTE GASIFIER WITH MICROWAVE CHAMBER THERMOCATALYTIC TAR CRACKING USING FE2O3-SUPPORTED PBO/ZNO CATALYST
Dr. Yıldırım İsmail Tosun	*Şırnak University, Türkiye*	MICROWAVE BUBLING SYNGAS REFORMING ON BIOMASS PYROLYSIS TAR BY SERPENTINITE GRANULES IN SALT/CHAR/CARBON SEMI-MOLTEN SALT

Virtual Session

HALL-3

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Radu KUNCSER

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Oualid Rholam	*National School of Applied Sciences (ENSA), University Ibn Tofail, Kenitra, Morocco*	HERMITE-HADAMARD INEQUALITIES FOR CONVEX STOCHASTIC PROCESS VIA FRACTIONAL INTEGRAL
Svetlana KUNSKAJA	*Lithuanian Energy Institute, Kaunas, Lithuania,*	INNOVATIVE ENERGY TECHNOLOGIES: TOWARDS SUSTAINABLE ENERGY
SURESH KUMAR SUBBARAYALU MURALIDHAR MANAPURAM	*North Eastern Regional Institute of Science and Technology, India*	MATERIAL SELECTION FOR LIGHT MOTOR VEHICLE PISTON FOR 3 DIMENSIONAL PRINTING BY ANALYTICAL HIERARCY TECHNIQUE
Radu KUNCSER Maria PARASCHIV Septimiu VALASUTEAN Marius ENACHE Malina PRISECARU	*University Politehnica of Bucharest Bucharest, Romania*	ALTERNATIVE BIOFUELS OBTAINED THROUGH PYROLYSIS OF PRE-PROCESSED MSW FROM URBAN LANDFILL
Radu KUNCSER Maria PARASCHIV Ana CRACICA Marius ENACH Malin PRISECARU	*University Politehnica of Bucharest Bucharest, Romania*	HALOPHYTE PLANTS FOR SUSTAINABLE BIOENERGY PRODUCTION
Kamar ZAIEM Dr. Hichem BOURAS Prof. Mohamed Faouzi RACHEDI	*Badji-Mokhtar Annaba University, Annaba, Algeria,*	A GEAR FAULT DIAGNOSIS USING A COMPARISON OF EMPIRICAL SIGNAL TECHNIQUES WITH ANFIS
Prof. MOHAMMED BARMAKI	*University Hassan II Casablanca, Morocco*	PARIS AGREEMENT IN INDIA: EFFORT TOWARDS MITIGATING CLIMATE CHANGE STOCHASTIC PROCESSES TOPICS ON FRACTIONAL INEQUALITIES OF THE HERMITE–HADAMARD

Virtual Session

HALL-4

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Prof. Anatolii Bezpalenko

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Prof. Mariam Jikia Assistant of Prof. Khatia Vasadze	*Georgian Technical University Tbilisi, Georgia*	CHALLENGES OF THE CONFLICT IN ABKHAZIA IN NEGATIVE PEACE CONDITIONS
Assoc. Prof. Dr. Sophio Demetrashvili Prof. Dr. Mariam Jikia	*Georgian Technical University Tbilisi, Georgia*	THE CORRELATION OF DISPROPORTIONALITY OF ELECTORAL DISTRICTS AND EQUALITY PRINCIPLE IN PARLIAMENTARY ELECTIONS OF GEORGIA
Prof. Anatolii Bezpalenko	*Taras Shevchenko National University of Kyiv, Ukraine*	DISTRIBUTION OF VOWELS IN INDO-EUROPEAN ROOT IN PROBABILISTIC ASPECT. BAYES'THEOREM
Asst. Prof.Dr. Carmen Gabriela LĂZĂREANU Vlad LEONTIE	*Alexandru Ioan Cuza University, Iaşi, Romania*	VIOLENCE PHENOMENON, CAUSES AND MANIFESTATION FORMS. ASPECTS FROM THE DRAMATIC STRUGGLE OF WOMEN FOR STATUS IN SOCIETY
Okafor Nestor Chika Ugwuoti Amos Iloabuchi	*Department of Geoinformatics and Surveying, University of Nigeria Nsukka*	COASTAL SURVEY AND MAPPING FOR THE SHORELINE RECLAMATION OF OBOLO- CREEK, AKWA-IBOM STATE, NIGER DELTA, NIGERIA
Asst. Prof. Juanita GOICOVICI	*University Babeş-Bolyai of Cluj-Napoca Romania*	LEGAL ASPECTS CONCERNING THE HYBRID PRODUCT CONFORMITY ASSESSMENT SYSTEM: OBJECTIVE CONFORMITY VS. SUBJECTIVE CONFORMITY
Asst. Prof. Mohammad Owais Farooqui Asst. Prof. Mohd Imran Siddiquei	*University of the People, Pasadena, CA, USA*	A SOCIO-LEGAL STUDY ON VACCINE TOURISM IN THE CONTEXT OF CURRENT COVID-19 TRAVEL RESTRICTIONS
Ms. Latika Choudhary	*Assistant Professor, School of Law, UPES, Dehradu nİndia*	THE BLACK SEA AND NUCLEAR SECURITY -GAUGUNG THE CONCERN OF TRAFFICKING IN CONTESTED SPACES AND THE MULTINATIONAL POTENTIAL
Gvantsa Geliashvili	*Caucasus International University, Faculty of Business, Management Department, Tbilisi, Georgia.*	LABOR RIGHTS AND CORPORATE SOCIAL RESPONSIBILITY
Mediu Ridvana Ntovolis Konstantinos	*Faculty of Applied Science, University College LOGOS, Tirana , Albania*	THE ROLE OF MARKETING FOR EDUCATION SECTOR

Virtual Session

HALL-5

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072

PASWORD: 293031

HEAD OF SESSION: Acc. Res.Fell. Ivan PAVLOVIC

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Maria PARASCHIV Carmen Gabriela CONSTANTIN Radu KUNCSER Ana CRACICA Marius ENACHE Malina PRISECARU	*University Politehnica of Bucharest Bucharest, Romania*	GREEN OPTION FOR MANAGING SALTED SOILS
Maria PARASCHIV Carmen Gabriela CONSTANTIN Aurora DOBRIN Andrei MOŢ Radu KUNCSER Ana CRACICA Marius ENACHE	*University Politehnica of Bucharest Bucharest, Romania*	SALICORNIA HERBACEA – PLANT SPECIES THAT CAN BE PRODUCED ON LANDS UNSUITABLE FOR TRADITIONAL AGRICULTURE
Ralitza Koleva Valentin Nenov	Burgas University "Asen Zlatarov"	STRUVITE FROM WASTE. TECHNOLOGY AND PRODUCT IMPROVEMENT
Özkan YAVAŞ Senem Esin YAVAŞ Elif Rana YILDIZ	*Bursa Uludag University, Türkiye*	A CASE OF POST-INFECTIOUS EXTERNAL HYDROCEPHALY DUE TO BACTERIAL ENCEPHALITIS IN A KITTEN
Assoc.Prof.Dr. Hüseyin CİHAN	*Bursa Uludag University, Türkiye*	HEMATOLOGIC PARAMETERS OF WILD BUZZARDS (BUTEO BUTEO, B. RUFINUS) IN TURKIYE
Acc. Res.Fell. Ivan PAVLOVIC Sen. Res.Ass. Violeta CARO PETROVIC Prof. Jovan BOJKOVSKİ Prof. Narcisa MEDERLE Res.Ass.Aleksandra Tasic	*Scientific Institute of Veterinary Medicine of Serbia, Belgrade, Serbia*	PREVALENCE OF GASTROINTESTINAL HELMINTS IN CATTLE IN NORTHEASTERN PART OF SERBIA (BANAT)
Res. Ass. Dr. Aleksandra Tasić Dr. Ivan Pavlović Milan Stevanović	*Scientific Institute of Veterinary Medicine of Serbia, Belgrade,*	THE INFLUENCE OF HMF FORMATION IN HONEY

Virtual Session

HALL-6

SESSION-3

Date and Time (Sofia, Ankara)

29.08.2022

16:00-18:30

Zoom Meeting

ID: 820 4463 1072 **PASWORD: 293031**

HEAD OF SESSION: Prof. Kamilova Nigar MirNagi

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Asst. Lect. Husni Muhammed Hasan Prof. Asst. Suad Yousif Alkass Asst. Lect. Kajeen Hassan Jasim Asst. Prof. Yousif Ali Prof. Daniele Suzete Persike de Oliveira	*University of Duhok,* *Duhok , Iraq*	INTERNALLY DISPLACED YAZIDE WOMEN IN NORTHERN IRAQ: PTSD AND PHYSIOLOGICAL DISTURBANCE
Nedjla Khelfa Prof. Salah Belaidi Fatima Soaulmia Prof. Samir	*University of Biskra, Biskra, Algeria*	DEVELOPMENT AND VALIDATION OF A PREDICTIVE QSAR-BASED ON ARTIFICIAL NEURAL NETWORK FOR EFFECTIVE DESIGN OF PFDHFR INHIBITORS
Prof. Kamilova Nigar MirNagi Mamedova Gulshan S.	*Gynecology,Azerbaijan Medical University, Baku, Azerbaijan*	MACRONUTRIENT LEVELS IN PREGNANT WOMEN WITH DIFFERENT TYPES OF ARTERIAL HYPERTENSION
Professor Daniele Suzete Persike de Oliveira Dr Hussein Mohammed Rashid Professor Fouad Kasim Mohammad	*College of Pharmacy, Department of Medicinal Chemistry, University of Dohuk, Duhok, Iraq*	TYPE 2 DIABETES MELLITUS: CHOLINESTERASE ACTIVITY AND OXIDATIVE STRESS
Assist. Prof. Dr. Felicia ANDREI Prof. Dr. Simona DRAGAN Prof. Dr. Dan GAITA	*University of Medicine and Pharmacy, Timisoara, Romania*	ANTITHROMBOTIC AND ANTICOAGULANT PROPERTIES OF LOCAL CULTIVATED FRUITS USED IN CARDIOPREVENTION
Ben Ahmed Raja BOURIGA Nawzet Gammoudi Mehrez	*Université de Tunis El Manar, Tunis, Tunisia*	EMBRYONIC DEVELOPMENT OF THE TURTLE BLOODFEEDING LEECH: PLACOBDELLA SP.(HIRUDINEA: GLOSSIPHONIIFORMES) FROM TUNISIA
Mehrez GAMMOUDI Nawzet BOURIGA Raja BEN AHMED	*Université de Tunis El Manar, Tunis, Tunisia*	FIRST DESCRIPTION FROM TUNISIAN WATERS OF BASEODISCUS DELINEATUS (DELLE CHIAJE, 1825) (NEMERTEA, PILIDIOPHORA)
Svetlana MIHOVA Valentina DONCHEVA Kremena STEFANOVA Violin RAYKOV Mariela DAMYANOVA Elitsa STEFANOVA Mariya YANKOVA Dimitar DIMITROV	*Institute of Oceanology-BAS, Varna, Bulgaria*	PLASTIC INGESTION BY MULLUS BARBATUS FROM THE BLACK SEA

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L1 ANTITUMOR ACTIVITY OF DIFFERENT LOW-TOXIC BIOLOGICALLY ACTIVE SYSTEMS (BAS)

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In today's lecture, I will briefly present a part of the Scientific Program of which most of the conference participants from Bulgaria are part. As the person responsible for one of the work packages in the program, I will turn your attention to working on that package. We aim to investigate the **antitumor** activity of the low-toxic biologically active systems (BAS) isolated and characterised by our colleagues. The antineoplastic activity of newly isolated BAS is studied in in vitro and in vivo models of malignant diseases. Our most challenging goal is to establish the molecular mechanism of their action.

Acknowledgements: This work was fully supported by the Bulgarian Ministry of Education and Science under the National Research Programme "Innovative Low-Toxic Bioactive Systems for Precision Medicine (BioActiveMed)", approved by PMC №658/14.09.2018, Grant Д01-217/30.11.2018; agreements ДО1-323/18.12.2019, ДО1-358/17.12.2020, ДО1-278/03.12.2021.

L2 ANTITUMOR ACTIVITY OF BIOACTIVE COMPOUNDS FROM MARINE SNAIL RAPANA VENOSA AGAINST A PANEL OF HUMAN BREAST CELL LINES

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This study is the first report describing the promising antitumor activity of biologically active compounds isolated from the Black Sea marine snail Rapana venosa, tested on a panel of human breast cell lines – six lines of different molecular subtypes of breast cancer MDA-MB-231, MDA-MB-468, BT-474, BT-549, SK-BR-3 and MCF-7, and the non-cancerous MCF-10A.

We conducted an in vitro cell-based assay in which the cells were treated with hemolymph of Rapana venosa. Half-maximal inhibitory concentration (IC50) of the bioactive compounds was obtained from an experimentally derived dose-response curve. We also tested combinations of the products with cisplatin and tamoxifen for synergistic effect. A hemolymph fraction with Mw 50-100 kDa showed good antitumor activity manifested by a significant decrease in cell viability, altered morphology, and autophagy activation in treated cancer cells. A significant effect was observed when the hemolymph fraction was combined with the classical chemotherapeutic drugs - cisplatin and tamoxifen. The combined treatment was about three times more effective compared to treatment with chemotherapeutics alone. An apparent synergistic effect was established for cisplatin combined with hemolymph fraction Mw 50-100 kDa for all tested cell lines, including the triple-negative MDA-MB-231 and BT-549. In conclusion our study describes a new active fraction isolated from the marine snail Rapana venosa, revealing new perspectives for the application as an antitumor agent used alone or as a booster in combination with different chemotherapies.

Keywords: hemolymph, Rapana venosa, breast cancer, cisplatin, tamoxifen, bioactive compounds

Acknowledgments: This work was fully supported by the Bulgarian Ministry of Education and Science under the National Research Programme “Innovative Low-Toxic Bioactive Systems for Precision Medicine (BioActiveMed)”, approved by PMC №658/14.09.2018, Grant Д01-217/30.11.2018, agreements ДО1-323/18.12.2019, ДО1-358/17.12.202, ДО1-278/03.12.2021.

L3 INVESTIGATING THE IN VITRO ANTITUMOR AND ANTIPROLIFERATIVE POTENTIAL OF AN AMANITA MUSCARIA EXTRACT AGAINST LUNG AND PROSTATE CANCER CELL LINES

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Cancer is a disease with major social significance, affecting millions of people every year. According to Cancer Research UK, in 2018 there were 17 million new cases of cancer worldwide, with two of the most common types being lung and prostate cancer. In light of this, we turned our attention towards examining the antitumor potential of an extract from the Amanita muscaria mushroom in vitro. We tested the cytotoxic and antiproliferative activity of an A. muscaria ethanol-water (1:1) extract supplied to the team by the mycotherapist Vladimir Vazharov, as well as an A. muscaria ethanol-water (1:1) extract prepared by us in the lab against several lung cancer cell lines and a prostate cancer cell line; we performed an MTT cytotoxicity assay, EdU assay and FACS analysis for investigation of cell proliferation and the state of the cell cycle, as well as EU/BrU assays for investigation of RNA synthesis after treatment of the cells with the A. muscaria extract. Our results show that both A. muscaria ethanol-water extracts exhibit a significant cytotoxic effect on all the cell lines and impact the magnitude of cellular proliferation and the cell cycle in the treated lung cancer cell lines. The team observed no RNA aggregates in the nucleus, which would be expected in the presence of significant quantities of amatoxins; however, RNA aggregates were observed in the cytoplasm and identified as stress granules. Our future aims include elucidating the precise compounds behind the observed effects, as well as their mechanism of action.

Keywords: cancer, ethanol extract, Amanita muscaria, cytotoxicity, cell cycle arrest, stress granules

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L4 SELECTIVE CYTOTOXICITY OF HEMOCYANINS AGAINST BLADDER CARCINOMA T24 PERMANENT CELL LINE AND MECHANISM OF ANTITUMOR ACTION

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Some molluscan hemocyanins (Hcs) have significant immunological and antitumour potential, enabling their application in oncology. The antitumour activity of Hcs from marine snails Rapana venosa (RvH), giant keyhole limpet Megathura crenulata (KLH) and garden snails Helix lucorum (HlH), as well as their different derivatives, were studied in vitro on a permanent T24 cell line of bladder cancer and normal urothelial cell line HL 10/29 compared to doxorubicin. The antiproliferative activity of the tested Hcs was determined by WST-1 and BrdU ELISA assays. Morphological changes in both urothelial cell lines were confirmed by fluorescence microscopy. The proteomic analysis of a cell line of bladder cancer before and after treatment with functional unit (FU) βc-HlH-h using 2D-PAGE and mass spectrometry revealed differences in the expression of some proteins. Studies prove that the T24 tumor cell line is dose- and time-dependent, sensitive to the action of the tested isoforms and it glycosylated FU of these Hcs. Selective inhibition of T24 cell growth was observed after incubation with βc-HlH, RvHI and RvHII and FUs (βc-HlH-h and RvHII-e). The FU βc-HlH-h demonstrated the highest antiproliferative effect (similar to doxorubicin), in which predominantly apoptotic and less late apoptotic or necrotic changes in the tumour cells were observed by fluorescent electron microscopy. For the first time, a significant change in protein expression of T24 tumor cell line was shown under the action of βc-HlH-h, and a number of proteins, associated with the apoptosis pathway, were identified by proteomic analysis.

Keywords: molluscan hemocyanins, T24 cell line of bladder cancer, selective antitumour effect, functional unit βc-HlH-h, proteomic analysis.

Acknowledgements: This work was supported by the Bulgarian Ministry of Education and Science, Grant D01-217/30.11.2018 under the National Research Programme “Innovative Low-Toxic Bioactive Systems for Precision Medicine (BioActiveMed)” approved by DCM # 658/14.09.2018.

L5 NATURAL AND SURGICAL APPROACH IN THE TREATMENT OF DIFFICULT TO HEAL AND CHRONIC WOUNDS.

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Some types of wounds arise and do not obey the standard teaching of tissue healing and present a challenge. They can be considered hard-to-heal and chronic wounds. Many chronic systemic diseases lead to the formation of such wounds, and doctors and scientists must take into account all the factors related to the wound. In addition to surgical treatment of the wound as the "Gold Standard", appropriate and modern measures should be taken to correct the underlying causes of difficult wound healing. Given the new results and scientific discoveries, a serious revision in the treatment methods for such patients is necessary. Knowledge of the therapeutic effect of snail mucus and various types of herbs has been known since the known written history that has reached us. Snail farms and their combination when used on wounds are described in Egyptian cryptograms and papyri, Pliny the Elder (AD 23) wrote that snails were “a sovereign remedy for pain associated with burns, abscesses and other wounds ". Patients with difficult to heal and chronic wounds of different age and genesis (Diabetic gangrene, Chronic venous insufficiency, Chronic arterial insufficiency and pressure ulcers), as well as with different comorbidities, were selected prospectively of different sexes and ages. Applied is the same prospective new protocol, new wound antisepsis approach, new pace and type of dressings, treatment plan, training the patient and kinsfolk to self-help and dressings. Results of a number of parameters were reported during the treatment process: Local wound status, pH-metry, local inflammatory process, bacterial flora, pain level, healing rate. Comorbidity analysis. Presentation of intermediate results from the treatment of difficult to heal and chronic wounds of different genesis. The new approach used in the treatment of difficult to heal wounds with snail mucus from Helix aspersa and herbal essential oils shows promising results. There is a significant reduction in the time for wound healing, rapid and effective reduction of the local inflammatory process and chronic pain. Improving the general and psycho-emotional state of the patient, significantly improving the quality of life. The obtained results suggest that the healing of such wounds is promoted not only by limiting bacterial infection, but also by stimulating the growth of tissues and providing them with an adequate local alkaline-acid, moist and nutritious environment. Early and regular application of our proposed new approach to treatment will lead to the prevention of amputation of the legs and would serve as a basic therapy for the treatment of chronic wounds.

Keywords: Heal wounds, chronic wounds, treatment, snail Helix aspersa, Essential oils.

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L6 HIGH-THROUGHPUT HR-LC-MS ANALYSIS OF NATURAL COMPOUNDS IN COMPLEX MIXTURES

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A major obstacle in accurate metabolite annotation in liquid chromatography high-resolution electrospray ionization mass spectrometry (LC-HR-ESI-MS) is the lack or good reproducibility between instruments as the LC behavior and ESI ionization of compounds are prone to significant variation. Even though more software tools, including online MS libraries, are rapidly developing, the reliability of unknowns' annotation remains uncertain. Herein, we present a MS and MS/MS data analysis approach using the R programming language, applicable in both targeted, and non-targeted annotation. Raw MS data is converted to mgf and .ms1 and further manipulated with the R programming language (Microsoft R Open, 4.0.2) under RStudio (09.01.2021, Build 372). Chromatographic and MS filters are applied, including the presence/absence of specific fragment ions (considering intensities), neutral losses, or mass differences. Scans presumably belonging to the same compound are grouped, rendering an added MS/MS spectrum. To illustrate the functions of this approach, we present the non-targeted annotation of compounds using an in-house library, as well as the targeted screening of pyrrolizidine alkaloids, in plant extracts. We have chosen pyrrolizidine alkaloids since they are very diverse and widely spread. This natural compound class itself has several subclasses with specific MS features that are exploited for their differentiation. Depending on the compound class screened, specific elemental composition restrictions are applied, significantly narrowing the possible candidates. Moreover, we present distance measurement between spectra (distance matrices), k-means clustering, PCA plots, and their visualization. With the advance of mass spectrometry instrumentation, large amounts of MS data become more readily available, which warrants the utilization of effective tools for high-throughput mass spectrometric data analysis.

Keywords: R scripting, Data analysis, HR-LC-MS, Clustering

Acknowledments: This work was financed by Grant № 99/04.06.202 by the Council of Medical Sciences, Medical University of Sofia, Bulgaria.

L7 A SOCIOLOGICAL LOOK TO THE THEORY OF LEARNED HELPLESSNESS

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In cases where the organism cannot control the consequences of its behavior, that is, when it learns that no matter what it does, it cannot change the result, it experiences some behavioral, mental and cognitive changes. But most importantly, he stops acting in similar situations in the future, almost giving up and giving up trying. This process was first understood in animal experiments by Seligman and Maier in 1967 and defined as learned helplessness. This theory has been used to understand human psychology in the following years, and it has been observed that the process of making sense of events in humans, unlike animals, is effective. With this process, which is defined as attribution, the theory of learned helplessness has deepened even more. However, despite the passage of time, this theory has been used more in the field of psychology and the link between the individual and the social has been ignored. However, these areas are not independent from each other, on the contrary, they are forms of existence areas that are intertwined and affect each other. For this reason, in this study, it will be shown that learned helplessness, which seems to be an individual and psychological process, is affected by the social one and the roots of the causes that cause this situation are also sociological. In the study, the definition and history of learned helplessness will be conveyed by keeping a theoretical approach, and then attention will be drawn to the sociological aspect that is missing in the explanations of this theory. In this context, the cultural dimensions of both learning and attribution/meaning will be discussed, and it will be emphasized that the cultural is sociological. In addition, it will be revealed that the phrases such as proverbs/idioms used for groups that are not accepted by the general public and the representation of these groups by the mass media cause learned helplessness as sociological elements. In addition to all these, it will be emphasized that being in a disadvantageous position, that is, being exposed to uncontrollable negative life experiences can cause learned helplessness. As a result, the aim of this study is to show that the theory of learned helplessness, which is an analysis method confined to the field of psychology, can also be used in the field of sociology, and therefore, social processes in our individual worlds can be more effective than expected.

Key Words: Learned Helplessness, Attribution, Sociology

L8 DEVELOPMENT OF A GRADE SCORING KEY TO DETERMINE THE LEVELS OF PEDAGOGICAL ART CRITICISM OF 5-6 YEARS OLD CHILDREN

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The aim of this research is to develop a rubric (analytical rubric) to determine the level of pedagogical art criticism of 5-6 year old children attending pre-school education and to determine the reliability of this rubric. The study group of the research consists of 30 children attending pre-school education in the districts of Balıkesir, Altıeylül and Karesi, which were determined by the typical sampling method, one of the purposeful sampling methods. While developing the rubric to be used to determine the level of children's pedagogical art criticism, a literature review was made, the criteria were listed, the scoring strategy and performance levels were determined, and expert opinions were taken. The situations of responding to the questions in the description, analysis, interpretation and judgment steps of pedagogical art criticism were determined and four dimensions were determined. In this study, the answers given to the questions in the Pedagogical Art Criticism Interview Form were scored by two independent evaluators in order to determine the reliability of the rubric. The reliability results of the rubric were obtained by making Cohen's Kappa analyzes on the scoring results. The value of the Kappa statistic obtained as a result of the calculations has been found to be,902. This value indicates that the raters score the answers given by the same children in a similar way and that there is an almost perfect agreement between the two raters. As a result of the analysis, it was concluded that the rubric developed is a reliable tool that can be used to determine the level of children's pedagogical art criticism.

Keywords: Rubric, rubric development, pedagogical art criticism

L9 MECHANISMS UNDERLYING THERAPEUTIC POTENTIAL OF HELIX ASPERSA EXTRACT IN EXPERIMENTAL ALZHEIMER'S DISEASE

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Alzheimer's disease is a complex neurodegenerative disorder with multifactorial etiology, unsatisfactory treatment and necessity for broad-spectrum active substances for cure. On the other hand, mucus from Helix aspersa snail is a mixture of bioactive molecules with antimicrobial, anti-inflammatory, antioxidant and anti-apoptotic effects. We studied mechanisms of action underlying beneficial effects of snail extract (SE) from Helix aspersa on learning and memory deficits in Alzheimer's type dementia (ATD) induced by scopolamine (Sco) in male Wistar rats. SE (0.5 mL/100 g) was applied orally through a food tube for 16 consecutive days: 5 days before and 11 days simultaneously with Sco (2 mg/kg, intraperitoneally). At the end of Sco treatment, using behavioural methods, we evaluated memory performance. Additionally, in cortex and hippocampus the acetylcholinesterase (AChE) activity, acetylcholine and monoamines (dopamine, noradrenaline and serotonin) content, levels of main oxidative stress markers, expression of brain-derived neurotrophic factor (BDNF), and cAMP response element-binding protein (CREB) were determined. SE significantly improved the cognitive deficits induced by Sco. Furthermore, SE possessed AChE inhibitory activity, moderate antioxidant properties and the ability to modulate monoamines content in brain structures related to memory. Moreover, multiple SE applications not only restored the depressed by Sco expression of CREB and BDNF, but significantly upregulated it. We demonstrated that complex mechanisms underlie the beneficial effects of SE on impaired memory in Alzheimer's type dementia.

Keywords: Alzheimer's disease, Neuroprotection, Snail Extract, Dementia

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L10 NEUROPROTECTIVE PROPERTIES OF HELIX ASPERSA SNAIL EXTRACT IN PARKINSONS'S DISEASE EXPERIMENTAL MODEL

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Parkinson's disease (PD) is a progressive, neurodegenerative disease with unclear pathology and insecure treatment. In the present study, we provide evidences for the neuroprotective effect of snail extract (SE) in 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) animal model of PD. The snail mucus was collected from Helix aspersa snails, grown in Bulgarian eco-farms using patented technology without the suffering of snails. Male mice (C57BL/6, male, 8 weeks old) were used for mouse Parkinson's disease model via MPTP treatment. MPTP+SE (0.1 ml/10g

b.w) group received fresh water snail extract for 12 consecutive days. All animals were submitted to some behavioral tests (for motor coordinationa and memory) on the 16th and 17th days. At the end of experiment the two main brain structures related to memory (prefrontal cortex and hippocampus) were separated for the biochemical and histological analysis. Twelve days of SE treatment (7 days before and 5 days simultaneously with MPTP) was able to improve impaired motor and memory disturbance of the experimental animals with MPTP model of PD. SE protects dopaminergic neurons as can be seen in our histological results as well as in biochemical studies. Twelve days after first MPTP treatment the reduction of brain DA was by 73% as compared to controls. Multiple SE administration increased DA brain level (by 176 %) and decreased those of NA (by 42 %,) as compared to MPTP group. We observed significant anti-inflammatory effect of SE. SE could find a place in experimental treatment of PD.

Keywords: Neuroprotection, Snail Extract, Parkinson's Disease, MPTP

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L11 PROTEOMIC ANALYSIS ON SCOPOLAMINE RAT MODEL OF ALZHEIMER'S DISEASE WITH APPLICATION OF SNAIL EXTRACT AS NEUROPROTECTIVE AGENT

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Alzheimer's disease (AD) is the most widespread neurodegenerative disorder. The scopolamine is frequently used agent for induction of Alzheimer type of dementia in experimental animals. We used scopolamine model for assessment of potential neuroprotective effect of extract from garden snail Helix aspersa on neurodegenerative processes in vivo. We used male sexually mature experimental rats. They are divided on three groups: a control group of healthy rats, a scopolamine group (treated with scopolamine) and an experimental group treated with scopolamine and snail extract together. Two major memory-related brain structures (hippocampus and prefrontal cortex) are isolated. The obtained proteins were separated by SDS – PAGE and analyzed with MALDI-MS. Using MASCOT Peptide Mass Fingerprint, ImageQuant™ TL & Melanie 9 software the cortex and hippocampal proteins have been identified and compared.

Keywords: Alzheimer's disease, scopolamine model, Helix aspersa, experimental rats

Acknowledgment: This research was carried out with the support of D01-217/30.11.2018 National scientific program "Innovative low-toxic biologically active precise medicine (BioActiveMed).

L12 NEUROPROTECTIVE AND ANTIOXIDANT PROPERTIES OF 5-METHOXYINDOLE-HYDRAZONE HYBRIDS AS POTENTIAL MULTI-TARGET DRUGS FOR THE TREATMENT OF NEURODEGENERATİVE DISORDERS

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Neurodegenerative disorders represent a broad group of neurological diseases of which Alzheimer's and Parkinson's diseases are with the highest prevalence. Despite years of extensive research and considerable advances made towards a better understanding, nowadays the underlying cause still remains unknown. Nevertheless, there is compelling evidence regarding the involvement of oxidative stress in early events preceding the dopaminergic degeneration and senile plaques formation. The highly complex multifactorial pathogenesis including contributing genetic and environmental factors requires a multi-targeted approach since the so-far applied one-targeted drugs have provided only symptomatic treatment with adverse side effects. Our objective was to synthesize and study a series of compounds containing pharmacophore subunits (indole, arylhydrazone, catechol, hydroxy and methoxy moieties) with proven activity targeted upstream the neurotoxic cascade, with special emphasis on antioxidant activity. The compounds' neurotoxic potential was evaluated by measuring the viability of isolated rat brain synaptosomes and of SH-SY5Y neuroblastoma cell line. The neuroprotective activity was assessed on an in vitro model of H_2O_2-induced oxidative stress on SH-SY5Y and on 6-hydroxy dopamine-induced neurotoxicity in synaptosomes by measuring the viability and the levels of reduced glutathione (GSH). The compounds showed low neurotoxic potential at concentrations of 1 and 10μM and were able to preserve the cell viability to higher extent than the reference compounds rasagiline and melatonin. All tested compounds revealed promising neuroprotective effects, of which the two vanilloid hybrids protected the synaptosomal viability by 56% and the GSH level – by 50%. The inhibition of the hMAOB enzyme was similar to the clinically applied rasagiline and selegiline.

Keywords: Neurodegeneration, multi-target drugs, indole-hydrazone hybrids, oxidative stress

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L13 MARKEDLY ELEVATED POPULATION FREQUENCY OF TWO RARE VARIANTS ASSOCIATED WITH ALZHEIMER'S AND PARKINSON'S DISEASES IN PRE-CONTACT CARIBBEAN COMMUNITIES

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Genetic disease burden in ancient communities has barely been evaluated despite an ever expanding body of ancient genomes becoming available. For this study, we examine human genome-wide data from pre-contact Caribbean communities for the presence of mutations in genes associated with neurodegenerative disorders. We examined 173 publicly available

genome-wide data obtained from pre-contact Caribbean human DNA samples, dated 2900-400 BP for the prevalence of pathogenic variants in genes associated with neurodegenerative diseases in contemporary patients.Two rare pathogenic variants, the rs34637584 variant associated with Parkinson Disease in the LRRK2 gene, and rs2234255 associated with Alzheimer's Disease in the TREM2 gene, are estimated to have much higher population frequencies in pre-contact Caribbean communities compared to contemporary human populations, 16 and 41 times, respectively. Small population sizes, limited founder number and a lack of naturally occurring gene flow could have led to higher levels of inbreeding, as often might have been the case in ancient human communities. Neurodegenerative diseases are however often with poorly understood pathogenesis, where, along with the genetic, other factors might have influence such as adverse environmental effects, specific selective pressures and migration processes. Data on molecular predisposition to neurodegenerative disorders in ancient genomes could be instructive to modern medical diagnostic and therapeutic practices.

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L14 A NECESSITY FOR EXPANDING THE NEWBORNS' SCREENING PANEL IN BULGARIA –COMPARISON WITH OTHER COUNTRIES FROM EUROPE AND WITH USA

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The neonatal screening involves testing all newborns for certain hereditary diseases, the early diagnosis of which is key to the treatment process. To be included in a screening program, the disease should meet certain conditions, such as 1. to be curable;2. to be relatively common in the population and 3. to have fast, accessible, cheap and effective methods for early diagnosis. Neonatal screening is the best way to detect dangerous conditions for the child's health, which, in the first months of its life, do not give concrete manifestations. The earlier a health problem is diagnosed, the more likely it is that the child will receive timely and adequate care that will "suppress" the manifestations of the disease. In Bulgaria, neonatal screening includes only three diseases - phenylketonuria, congenital hypothyroidism and congenital adrenal hyperplasia. Each year, over 6.5 million babies worldwide are born with congenital genetic abnormalities. In our country, the screening is extremely insufficient to provide precise and comprehensive information about the health status of the baby. Unlike Bulgaria, in most of the other countries of the EU, the screening covers from 5 to 30 different genetic conditions due to the specifics of individual populations and the financial capabilities of individual member countries. A significant percentage of diagnosed conditions are rare diseases, with an incidence of 1 in 100,000 births or less. Currently, the number of rare diseases is over 7,000, and for 6-7% of them, therapies have been developed. The purpose of this study is to compare the screening programs in Bulgaria and other countries in EU, as well as in different states of USA, in order to emphasize the need to expand the panel of diseases included in the national screening program. In addition, we would like to present the capabilities of the next-generation sequencing technology to be used as a main screening method.

Keywords: NBS (newborn screening) panels, Bulgaria, EU, USA, necessity, expansion

L15 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENTS OF CENTER OF COMPETENCE" CLEAN TECHNOLOGIES FOR SUSTAINABLE ENVIRONMENT – WATER, WASTE, ENERGY FOR CIRCLE ECONOMY"

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team of the Clean&Circle

Center of competence Clean&Circle (CoC) is founded with financial support of **OPSESG** with more than BGN 23.6 million European financing and BGN 3,5 million - national co-financing. CoC "Clean&Circle" is union of the biggest players in the area of clean technologies for sustainable environment and creation of circular solutions for key ecological, eco-technological, eco-/bio-technological problems in nowadays preliminary in our region. The goal of this complex and holistic project is three components: 1) building up of innovative infrastructure (buildings, laboratories, apparatus, expert potential – specialists from different ages, with powerful arsenal of methods, methodological approaches, indicative technologies and good laboratory, scientific, educational practices; 2) creation of working and balanced system for innovative scientific products – papers, models, patents, technologies with verified high TRL in the most perspective clean technologies; 3) creation of system of technology transfer to the business by means of some of well-developed mechanisms – establishment of start up or spin off companies or direct transfer to large companies – associates partners of CoC "Clean&Circle"or other operated in the field of clean technologies including introduction and improvement of ISO 14000 and ESG standards. The essential part of the activities of CoC "Clean&Circle", important priority is the elaboration of education and training programs for qualified expert potential – MsD, PhD, Post-doctors, young scientists possessed high scientific-technological qualifications as well as appropriate soft skills and economic/managerial/leadership skills to develop high technologies and technological entrepreneurship. In the presentation have been given the exciples for the developed in the CoC "Clean&Circle" 10 innovative clean technologies for circular solutions of the key real environmental problems: technologies for elimination of toxic pollutants by means of hybrid combination biotechnological stimulation+plasma treatment, bioindication for precise management of biogas production on the base of waste – sludges, food and agricultural solid waste, bioindicative system for early diagnostic of contents of Sars Cov2 in waste water, other circular solution in water sector and in sector of building wastes.

Keywords: Center of competence "Clean&Circle", clean technologies, circular economy, technologies with high TRL, technology transfer.

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L16 METHODS FOR ELEMENTAL ANALYSIS OF CARBON MATERIALS

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The elemental composition of substances significantly affects their properties. Presence of heteroatoms, such as O, N, S, etc. can play important role in different applications. C/H ratio shows the degree of aromaticity. There are different methods of elemental analysis. The classical method is based on sample combustion and determination of the elements in the gases formed. There are modern methods, which also can give infromation about elemental analysis - Energy dispesive X-ray spectroscopy (EDAX), Atomic adsorption spectroscopy (AAS), Inductively coupled plasma mass spectrometry (ICP-MS), etc. Usually in classical and automated methods of elemental analysis, the sample is not completely oxidized in the pyrolysis zone. Therefore, the reagents facilitating the complete oxidation of the pyrolysis products are placed downstream in the reaction tube. The modern macro elemental analyzer Vario Macrocube can perform simultaneous carbon, hydrogen, nitrogen, and sulfur determination of one sample (1-100 mg). This universal analyzer for macro sized samples is designed to offer both scientific and industry-grade versatility in elemental analysis. In some industrial productions, a permanent elemental

analysis of the manufactured products is carried out to monitor their quality. Possible applications range from testing solids such as petroleum coke, lignite, and bituminous coal to viscous and liquid samples, such as tar or marine residual fuels of various types. Combined with its outstanding precision, the vario MACRO cube is a versatile and reliable equipment for the analysis of soils, fossil fuels, and derived products in 24/7 mode.

Keywords: Elemental analysis, XPS, EDAX, ICP-MS, AAS, C/H ratio

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L17 TG-DSC ANALYSIS OF VARIOUS ORGANIC MATERIALS

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Thermal analysis methods is widely used in the analysis of materials such as clay, ceramic, polymers, salt mixtures, mineral salts, alloys, metals, pharmaceuticals, and in the field of quality control. In analysis methods, each technique is defined according to the types of physical changes analyzed. The most common thermal analysis techniques are differential scanning calorimetry (DSC), thermogravimetric analysis (DTG), and derivative thermogravimetric analysis (TGA). DSC is a thermal analysis technique that measures the temperature and heat flow between sample and reference sample associated with material transitions as a function of time and temperature. TGA detects the temperature at which a material loses weight or does not lose weight. It creates the rate of change in weight as a function of time or temperature. The purpose of DTG analysis is to see the temperature at which the material loss is the most. Accordingly, it creates a function of time or temperature versus the speed of the weight loss of the material. In the laboratory, analyzes of various organic materials were performed on a differential thermal analysis apparatus (Simultaneous Thermal Analyzer –STA 449 F3 (Netzsch)). The obtained data on the weight loss and the thermal effects of the ongoing processes during heat treatment of the sample to high temperature provide valuable information about the depth of thermal destruction of the material and the nature of the ongoing reactions /exothermic or endothermic/. This is valuable information that allows determining the appropriate mode of heat treatment of the analyzed material, such as rate of temperature rise, holding time at a given temperature, through which to regulate the depth of degradation of the material and to influence the nature of the reactions taking place during its heat treatment.

Keywords: Organic materials, TG-DSC analysis, Calorimetric

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L18 WATER FROM MINERAL SPRINGS – COMPOSITION AND HEALING POTENTIAL

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As rich and important water resource on the territory of Bulgaria water from mineral springs is widely used for drinking and therapeutic purposes. However, its composition is not completely determined and its potential for healing and cosmetic uses is not fully achieved. Therefore, the main objective of our study is to determine the composition of water from several mineral springs, test their antimicrobial properties and compare them as to find out the best ones to incorporate in medicinal and cosmetic products. To achieve this, samples from 8 mineral springs were subjected to elemental analysis for the determination of 70 elements using inductively coupled plasma-mass spectrometry and were compared to previously obtained data. The specific antimicrobial properties of the water of each mineral spring was determined using agar well diffusion method and resazurin assay method. Furthermore, dry residue samples were analyzed with a Raman microscope and revealed several different crystalline structures, some of which of a sulphate nature, which presumably contribute to the healing properties of the water. The obtained information can be used for updating and expanding the data on the composition of water from mineral springs, for specifying the healing effect of mineral waters and for determining the possibilities for the use of water or their ingredients as additives to medicinal and cosmetic preparations.

Keywords: mineral water, elemental analysis, Raman spectroscopy, cosmetic, medicinal

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L19 ACTIVATED CARBON FROM USED MOTOR OILS: SYNTHESIS AND APPLICATION AS SUPPORTS OF NANOSIZED Fe-Cr OXIDES

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The study is aimed at the preparation of high-quality activated carbons from waste materials. The first time, a mixture of spent motor oil and plastic residues, such as high-density polyethylene (HDPE) or thermoplastic phenol formaldehyde resins (PFR) were used as AC precursor. The obtained carbon materials were modified with iron-chromium oxide nanoparticles. The texture, surface properties and phase composition of the parent activated carbons and their metal oxide modifications were studied in details by Boehm analyses, Low-temperature nitrogen physisorption, XRD, TPR, FTIR and Moessbauer spectroscopies. The catalytic properties of the obtained composites in methanol decomposition as a source of hydrogen was also in the focus of the study. The additives of high density polyethylene residues to the spent motor oil provides the formation of activated carbon with well-developed mesoporosity, which promotes stabilization of finely dispersed, well-accessible and highly active in methanol decomposition Fe-Cr mixed oxides. The higher microporosity in the activated carbon, which is produced by the addition of thermoplastic phenol-formaldehyde resins to the spent motor oil, restricts the formation of bi-component oxides, partially blocks the active phase within the micropores and facilitates segregation of bigger magnetite particles on the external carbon surface. This provokes lower catalytic activity and difficult prediction of the catalytic performance of the supported Fe-Cr composites.

Keywords: activated carbons, iron-chromium oxide nanoparticles, methanol decomposition.

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L20 CAPACITY OF THE ALIEN PACIFIC OYSTER TO ADAPT TO THE MARINE ENVIRONMENT OF THE BULGARIAN BLACK SEA AREA

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Recently, interest in the farming of Pacific oysters (Magallana gigas Thunberg, 1793) (=Crassostrea gigas) in Bulgaria has grown and consequently feral oysters were found to invade the natural habitats of the Bulgarian Black Sea coast. It is not yet clearly established if conditions in the Black Sea are optimal for the settlement and development of Pacific oysters. The present study aims to carry out a preliminary evaluation of the adaptive capacity of M. gigas and their potential to form sustainable colonies in the conditions of Bulgarian Black Sea coastal area, based on oxidative stress (OS) analysis. Oysters were gathered both from shellfish farms and natural habitats. A set of OS indicators: lipid peroxidation, protein oxidation, glutathione level, and activity of antioxidant enzymes superoxide dismutase, catalase (CAT), glutathione peroxidase, glutathione reductase (GR), and glutathione-S-transferase (GST) were measured spectrophotometrically, using commercially available kits. Results indicated that the oysters found in more polluted localities (i.e. Varna Lake, Port of Burgas shipyard and ship-repair

factory) had significantly higher OS levels. However, the presence of activated antioxidant enzymes (CAT, GR, and GST) suggested that Pacific oysters were able to compensate the OS effects and hence have the potential to successfully adapt to different marine environmental conditions in the Bulgarian part of the Black Sea. Thus, it could be assumed that the spread of this alien species in Black Sea habitats is very likely. Further studies on the stress ecology and further distribution of feral M. gigas along the Bulgarian Black Sea coast are urgently needed.

Keywords: adaptive potential, Bulgarian Black Sea, Magallana gigas, oxidative stress

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L21 MODIFIED PROCEDURE FOR IMMOBILIZATION OF ELECTROCHEMICALY ACTIVE BACTERIA ON CARBON CLOTH ELECTRODES

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Cell immobilization is a widely used technique in industrial biotechnology with many benefits including better process control. There is a many methods to attach or include microbes on and in different carriers but few of them meet the specific requirements of the emerging bio-electrochemical technology. The typical Microbial fuel cells (as an example of bio-electrochemical system) rely on the ability of the electrogenic microorganisms to form biofilms (naturally occurred self-immobilization) on the electrode surface. However, in many occasions, especially when more sophisticated systems and applications are aimed this is not efficient enough. In this study, procedure for effective immobilization of electrochemically active bacteria on carbon electrode materials was developed based on the modification and combination of two existing methods. The approach applied aimed to provide covalent binding of bacterial cells to the carrier surface and good electrical conductivity and mass transfer between the bio-layer, electrode and medium. The samples obtained demonstrated high specificity and efficiency of immobilization on the Scanning Electronic Microscopy and electrochemical tests performed. The behavior of the immobilized bio-anode was compared with conventional electrode during operation lab-scale Microbial Fuel Cell. From the data obtained we could conclude that the bacterial immobilization increases the columbic efficiency and current generated by the bio-electrochemical reactor.

Keywords: Bio-electrochemical systems; Microbial Fuel Cell; Bacterial immobilization; Bio-electrodes

L22 RAMAN MICROSCOPE AS POWERFUL TOOL FOR THE STUDY OF CARBON MATERIALS, BIOLOGICAL OBJECTS AND MICROORGANISMS FOR WATER PURIFICATION

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Raman spectroscopy was used to analyze different type of carbon materials, microorganisms and biological objects. All the analysis were performed on Bruker Senttera II Raman microscope, equipped with laser with 532 nm wavelength (green) and uCuv-(N) cuvette holder for liquid sample measurement Adaptor for microscope (M25-0.75 threaded). Studied carbon materials are: activated carbon (AC), carbonized and green carbon foam (CF), and carbon adsorbents, produced from refuse derived organic fuel (RDF). The Raman spectroscopy allows assessment of surface chemistry, structure and the difference in the degree of the produced carbon materials structure ordering. Degree of ordering of carbon structures based on the identification of the intensity of spectral signals corresponding to the D band, characteristic for the amorphousity of carbon structures and the G band, indicating the ordering of carbon structures. Applying Gram staining technique we can observe Gram positive and Gram negative bacteria on the Raman Microscope. The technique allows seeing how contaminated with microorganism a given sample is. We can also use Raman spectroscopy to analyze aminoacids and peptides. We can assigned Amide I band, Amide II band and Amide III band. Also we can observe other important spectral features in proteins spectra: disulphide bridges (S-S bonds) and aromatic aminoacids (Phenylalanine - Phe, tryptophan - Trp, tyrosine - Tyr, hystidin - His). The uCuv-(N) cuvette holder for liquid sample measurement which is adaptor for the Raman microscope was bought recently but we already managed to do different liquid samples of mineral water of Velingrad, Bulgaria.

Keywords: Raman Microscope, Carbon materials, bacteria, proteins

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L23 MECHANOCHEMICAL SYNTHESIS OF La1-xCexFeO3 FOR PHOTO-FENTON-LIKE ACTIVATION OF PEROXYDISULFATE

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Recently mechanochemistry emerged as one of the most simple, versatile and interesting synthetic protocol to produce new materials. The development of mechanochemistry as synthetic method is supported by excellent results in wide range of applications. The major inspiration behind the rediscovery of mechanochemistry is green chemistry, specifically the need for cleaner, safer and more efficient chemical transformation. The possibility for easier production of nanomaterials for shorter and economically efficient way makes it especially suitable for catalysts preparation. In this work a series of La1-xCexFeO3 solid solutions (x= 0.01, 0.03, 0.05, 0.07) were prepared by a simple reactive grinding process in a planetary ball mill without any post-synthetic threatement. The as prepared samples were characterized by a series of physicochemical methods such as XRD, UV-VIS spectroscopy, TEM. All of the samples were tested for complete oxidation of tetracycline hydrochloride in aqueous solution in photo- Fenton like activation of peroxydisulfate. The results showed the beneficial effect of Ce-doping of the LaFeO3 catalyst, leading to increased activity of the samples. The mineralization efficiency was obtained by implementing TOC analysis and the reactive oxygen species (ROS) were determined by radical scavanging experiments and reaction mechanism was proposed.

Keywords: Mechanochemistry, perovskite, persulfate activation, water remediation

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L24 DISTRIBUTION OF SNPS RELATED TO SOCIALLY-SIGNIFICANT DISORDERS IN BULGARIAN POPULATION– A PILOT STUDY

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For the last 20 years a large amount of data has been gathered showing the genetic predisposition to common socially-significant disorders: dyslipidemia, overweight and obesity, diabetes mellitus, osteoporosis, hypertension etc. These are so-called polygenic-multifactorial diseases, related to combination of specific genetic variants and predisposing lifestyle. The aim of this study is to demonstrate the distribution of specific SNPs (single nucleotide polymorphisms) related to predisposition to common disorders among a cohort of Bulgarian population. Thirty-tree subjects from Bulgarian (European) origin were tested for 35 SNPs related to cardiovascular disorders: lipid and homocystein metabolism, oxidative stress, inflammation, coffee and salt metabolism, inflammation, detoxification, oxidative stress, bone density, hemochromatosis and lactose intolerance: LPL, CETP, APOC3, APOE, MTHFR, MTR, MTRR, CBS, IL1, IL6, TNFA, eNOS, MNSOD/SOD2, CYP1A1, CYP1A2, FADS1, ACE, AGT, HFE, MCM6, VDR1, VDR2, VDR3, COL1A1, PPARG, TCFL2, SLC2A2, FTO, COMT, GSTM1, GSTP1, GSTT1 and NQ01 (DNALYSIS, Biotechnology®, Denmark). All of the volunteers signed in a consent form and filled in a questionnaire for assessment of hazards, epidemiological and occupational exposure risk factors, as well as medical and family history. The mean age of the studied cohort is 35,5 and the mean BMI is 26,8, 30% are male and 70%-female. Two are overweight, nine with obesity, two report of insulin resistance, one of Hodjkin's Lymphoma, one of Pertes disease and four of Hashimoto's thyroiditis. Eleven of them smoke and fifteen have lack of physical activity. According to family history mostly reports of cardiovascular disorders, cancer and insulin resistance. Due to risk of cardiovascular diseases - 6% are carriers of predisposing variant for elevated LDL levels, 30% for low HDL, 3% are homozygous carrier of APOE and are related to high risk of elevated total cholesterol level and increased risk for Alzheimer disease. More than half - 69% are at risk for hyperhomocysteinemia and around 30% are carriers of salt sensitivity hypertension variants – 30,3 % for ACE (II) and 33% for AGT (CC). One subject is at risk for haemochromatosis, 60,6% have deletion of GSTM1 and 24,24% of GSTT1, 54,5% are predisposed for lactose intolerance and 45% are carriers of COL1A1, related to decreased collagen production and osteoporosis with lack of Calcium and vit.D exists. This small cohort demonstrates well established personalized approach - integration of risk allele variants with epidemiological risk factors - that could be used for prevention of the polygenic-multifactorial socially significant diseases. These data could be beneficial for risk stratification according to the type of predisposing disorder, so future efforts should be directed at expanding this research into specific patient groups and creating evidence basis to support clinical application of nutrigenetic tests.

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L25 STRATEGY AND A FLEXIBLE WORKFLOW FOR BIOMARKER DETERMINATION AND POTENTIAL FOR TARGETED THERAPY IN BLADDER CANCER

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Bladder cancer is still a poorly understood disease with lack of innovative treatment options in comparison to other oncological diseases. Low-grade non-infiltrating progressive, non-progressive and high-grade muscle-invasive cancer with relatively good prognosis and those with poor prognosis. This required improving the current knowledge of different bladder tumour variants and bladder cancer treatment options. The aim of our study was to select potential bladder cancer biomarkers for disease progression and targeted therapy. A total of 87 bladder

cancer samples staged pTa to pT4 and 4 negative controls were collected. The epidemiological data related to age, gender, recurrence, smoking habits and occupational exposure were taken from patients' questionarie. Pool gene expression analysis of 168 genes involved in pathways for Cancer drug resistance and metabolism (PAHS-004) as well as for Cancer drug targets (PAHS-507), Qiagene was performed on 40 samples staged pTa, pT1 and pT2. Conformational analyses were performed on 12 individual samples (4 per stage). Further validation on the selected genes for tumor invasion was performed in a cohort of additional 40 bladder cancer samples from all tumor stages pTa to pT4. Validation of genes for targeted therapy was performed by RT-PCR for mutation in EGFR (exones 18, 19, 20, 21) and PIK3CA (A3140T, A3140G, C3139T) SensiScreen®, and SNaPshot multiplex assay for activating FGFR3 mutations and MLPA for CDKN2A CNVs. Additional SNParray of 24 bladder cancer samples (pTa to pT4) was performed by Infinium OncoArray-500K BeadChip (Illumina). The four genes: AP1S1, FIGF, HDAC11 and CDK9 were selected for gene-expression analysis based on differences in the expression levels between invasive and non-invasive bladder carcinoma. The results revealed 4-12 fold change difference in the expression level between pT2 and pTa/pT1 non-invasive tumors for FIGF, HDAC11 and CDK9 genes. AP1S1 failed to show significant difference in expression levels between tumor stages. For the EGFR and PIK3CA only wild type of the tested genetic variants were detected. Mutations in FGFR3 were found in 50 % from the tested tumors: 65% from them were S249C, 30% Y375C and 5% G372C. Mutations in CDKN2A were detected in 37,5 % from the tested tumors: 53,3% - homozygous deletions, 40% heterozygous deletions and 6,7% duplications. A total of 524 chromosomal CNV aberrations, including 175 losses and 349 gains, were identified. Genomic imbalances in high-grade tumours was found to be n=227 and those in low-grade tumours n = 103. A total of 36 CNVs in high-grade bladder tumours were detected in chromosomes 1-5, 8-11, 14, 17, 19 and 20. Furthermore, five Loss of heterozygosity (LOH) variants containing 176 genes were observed in high-grade bladder cancer samples. FIGF, CDK9 and HDAC11 can be considered as potential biomarkers for the characterization of invasive tumor phenotype. The overexpression of the EGFR and PIK3CA was not found to be related to common mutation tested and so far these two molecules cannot be used as therapeutic targets for bladder cancer treatment. The relation between the type of mutation of FGFR3 and CDKN2A and tumor stage should be additionally determined. CNV profiling of bladder tumours could reveal specific chromosomal regions related to the metastatic potential, thus expanding the personalized therapeutic approach. **Grants:** BG NSF No KP-06-OPR01/3-2018.

L26 WAR OF THE WORLDS OR SCIENCE STRIKES BACK

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Expected with great hope and accompanied by unprecedented success of science and technologies, the third millennium has presented us with a number of health and societal challenges, showing that we are not untouchable. Old diseases reminded of themselves (cholera, plague, yellow fever), the Zika and Ebola viruses caught the attention of not only specialists, we went through the first influenza pandemic of the 21st century. In less than 2 decades, 3 new pathogenic human coronaviruses were identified – SARS-CoV-1, MERS-CoV and SARS-CoV-2. The last one caused the COVID-19 pandemic, in which the world has been living for more than 2 and a half years, took lives of almost 6.5 million people, the long-term manifestations of the disease (the so-called long covid) still hide a lot of unknowns. At the end of July 2022, another disease completely unknown to the general public until yesterday - monkeypox - was declared a public health emergency of international concern by the WHO. What's happening in the world of infectious agents and viruses; what is the driving force that makes them deviate from their usual behavior; where do new viruses come from; is it possible to predict their appearance and be prepared for such surprises in the future? Have we learned the lessons of the COVID-19 pandemic, how important is the role of scientists and whether our efforts alone are enough; will we be able to put into practice the concept of one health, joining humans, animals and the environment. Let us start the discussion now.

L27 METAL NANOPARTICLES FROM MEDICINAL PLANTS WITH ANTIBACTERIAL EFFECT

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Green synthesis of nanoparticles has many potential applications in environmental and biomedical fields. Green synthesis aims in particular at decreasing the usage of toxic chemicals. For instance, the use of biological materials such as plants is usually safe. Plants also contain reducing and capping agents. The existence of flavonoids and alkaloids was confirmed by the phytochemical analysis of the plant extract and these chemicals can be used as reducing, stabilizing and capping agents. We present the principles of green chemistry, and we review two methods of plant-mediated synthesis of nanoparticles and their antibacterial effect tested on different microorganisms. We have proven that the plant extracts from the traditional Bulgarian medicinal plants - Cotinus coggygria, Chammomilla recutita, Calendula officinalis and Plantago major are very rich in active substances, which in the presence of $ZnSO_4$ or $CuSO_4$ synthesize nanoparticles by green methods. The formation of NPs has been proven by various spectroscopic methods and techniques, such as UV-Vis spectroscopy, scanning electron microscopy, HPLC analysis and etc. Synthesized CuONPs and ZnONPs were tested for antibacterial activity with the agar-diffusion and disk-diffusion methods and showed an increase in antibacterial activity against different strains of Escherichia coli and Bacillus subtilis.

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Keywords: green chemistry, medicinal plants, metal nanoparticles, antibacterial effect

L28 NEW PEPTIDES FROM THE CORNU ASPERSUM MUCUS AND MECHANISM OF ANTIBACTERIAL ACTION - PROTEOME ANALYSIS

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The antimicrobial resistance is recognized as a major problem in the treatment of microbial infections. Extensively drug-resistant bacterial pathogens have cropped up lately defying the action of even the last resort of antibiotics. Therfore the discovery of new effective antibacterial agents with defferent mechanisem of action has proved extremely important. The Cornu aspersum mucus is a complex, multi-component mixture of biochemically active substances. After obtaining a series of fractions containing biocomponents with different molecular weight and properties, it was found that the peptide fraction with MW < 10 kDa showed antibacterial activity against various Gram^{-} and Gram^{+} bacteria, including Escherichia coli. In order to identify changes in the expression of proteins secreted by E. coli before and after treatment with active fraction, a proteomic analysis was performed, including two-dimensional gel electrophoresis (2D-PAGE), mass spectrometry and bioinformatics. A significant change was found in the expression of a number of proteins, such as Outer membrane protein A and Outer membrane porin F, which have an important role in the stability of the outer membrane and in the survival of bacterial cells under toxic stress, as well as other important proteins, such as Exodeoxyribonuclease III, Stringent starvation protein A, Succinate-CoA ligase, Enolase and DNA-directed RNA polymerase. The observed antibacterial effect is due to disturbances in the vital functions and cellular metabolism of E. coli, caused by the cytotoxic action of low molecular weight metabolites, peptides and glycopeptides in the active fraction, which exhibit a synergistic effect.

Keywords: Cornu aspersum mucus, peptide fraction, antibacterial effect, Escherichia coli proteomic analysis.

Acknowledgements: This work was supported by the Bulgarian Ministry of Education and Science, Grant D01-217/30.11.2018 under the National Research Programme “Innovative Low-Toxic Bioactive Systems for Precision Medicine (BioActiveMed)” approved by DCM # 658/14.09.2018.

L29 COMPARATIVELY STUDY OF METABOLITES PROFILING OF HELIX ASPERSA MUCUS, HELIX LUCORUM HEMOLYMPH AND RAPANA VENOSA HEMOLYMPH USING ^{1}H NMR AND MASS SPECTROMETRY

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Metabolic profiling based on ^{1}H Nuclear Magnetic Resonance (NMR) spectroscopy was applied with the aim to investigate the functional role of the metabolites in lyophilized mucus from garden snail Helix aspersa. Twenty metabolites were unambiguous identified by ^{1}H, 1D TOCSY, 2D J-resolved, 2D COSY and 2D HSQC NMR spectra with water suppression. The developed protocol for the determination and assignment of metabolites in mucus from H. aspersa by NMR spectroscopy [1] was adopted to study the low molecular weight fractions of hemolymph from H. lucorum (<1kD and <3kD) and fourteen metabolites were unambiguously identified [2]. The same protocal was applied to the low molecular weight fractions of hemolymph from R. venosa (<3kD) and eleven metabolites were unambiguously identified. In the all studies metabolites with known antioxidant, antibacterial and antimicrobial activity have been detected. Some of them were confirmed by mass spectrometric analysis. The primary structure of several peptides was identified in low molecular weight fractions (Mw<1 kDa) by tandem mass spectrometry.

Keywords: mucus, hemolymph, Helix aspersa, Helix lucorum, Rapana venosa, ^{1}H NMR, mass spectrometry, de novo sequencing, peptides, metabolites.

Acknowledgements: This research was funded by the Bulgarian Ministry of Education and Science through the National Scientific Program “Innovative Low-Toxic Biologically Active Means for Precision Medicine” BioActiveMed, grant number DO1-217/30.11.2018.

L30 FLUORESCENCE SYSTEMS FOR CONTROL OF THE MICROBIOLOGICAL PROCESSES IN THE CLEAN TECHNOLOGIES

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Fluorescence methods are a major group of instruments for biological research mainly because of the possibility of obtaining information from non-toxic reporter molecules. However, the development of technologies (microscopic and computer) allowed in recent years the use of fluorescence methods as part of complete systems for the diagnosis of complex biological and biotechnological processes. In our practice, in recent years, various fluorescence-based indicator systems have been used to control microbiological processes in clean technologies. The objective of this report is to present key examples from our practice of fluorescent control systems in the field of biotechnology in the circular economy. These systems rely on the use of highly sensitive fluorescence methods (based on nucleotide probes or physiological probes) in combination with digital processing of the obtained images and joint interpretation of the obtained data with data

from the clean biotechnologies. As specific cases the following examples can be given: the use of fluorescence in-situ hybridization (FISH) to establish the development of synergistic relationships and the restructuring of the microbial community in azo-dye purification technology; obtaining data on the intoxication of microbial cultures and communities in the presence of landfill leachate; evaluation of the potential of bacterial cultures for the construction of biofertilizer; biogas production optimization strategy based on FISH, physiological probes and community autofluorescence. These control systems provide precise and diverse information that has been verified in specific clean technologies. After an automation step, they can be applied directly in practice by treatment plant specialists and circular product manufacturers.

Keywords: Fluorescence indicator system, clean biotechnologies, circular solutions, microbial processes

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L31 OXIDATIVE STRESS INDICES AS INTEGRATIVE TOOLS FOR ASSESSMENT OF THE ECOLOGICAL STATE OF BLACK SEA COASTAL ECOSYSTEMS: THE BIVALVE EXAMPLE

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Traditionally, risk assessment of pollution on marine ecosystems was based mainly on water physicochemical analysis or contents of pollutants in sentinel marine organisms. Recently, increasing attention is being paid to the biological response of indicator organisms to the impact of multiple environmental stressors. The aim of the present study was to estimate marine environmental conditions along the Bulgarian Black Sea coast using oxidative stress (OS) biomarkers. The reaction of bivalves to environmental stressors can serve as indicator of the ecological state of their habitats. The mussel Mytilus galloprovincialis (Lamarck, 1819) is key species for sublittoral rocks and hard substrates habitats and the clam Donax trunculus (Linnaeus, 1758) is typical inhabitant of sandy bottoms. A Specific Oxidative Stress (SOS) index based on the ratio of the standardized data of pro- and antioxidant biomarkers in the two bivalve species was constructed. Using the SOS index we evaluated the state of the marine environment from the view point of the biotic response of the indicator bivalves to local environmental conditions. Our data showed some discrepancies in the assessed ecological state of water bodies by the Black Sea Basin Directorate (BSBD) and the SOS index, especially for the southern coast, where SOS of both bivalve species indicated bad ecological conditions compared to the good conditions estimated by the BSBD categories. In conclusion, it can be accepted that SOS can serve as an indicator of marine environmental changes on a much smaller scale and also as an early warning tool for marine ecosystem “health” risks.

Keywords: Donax trunculus, Mytilus galloprovincialis, oxidative stress, Specific Oxidative Stress index

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L32 SITUATION AND CONTROL OF ECHINOCOCCOSIS IN BULGARIA OVER THE LAST TWENTY YEARS

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Echinococcosis is a biohelminthosis caused by parasites of Echinococcus spp. (Cestoda: Taeniidae). Final hosts for these tapeworms are carnivores, mainly canids, and intermediate - almost all mammals, including humans. The disease is of global importance for public health, and the economic burden of losses for humans and animal husbandry is billions of dollars a year. The aim of this study was to collect information from research and official documents from European institutions on the distribution of echinococcosis among humans and animals in Bulgaria over the last 20 years, which will provide guidelines for effective control of this zoonosis. The collected data show that from 2006 to 2020 Bulgaria is first in the European Union in the number of reported cases of people with established cystic echinococcosis. This ranks it among the highly endemic countries for the disease. The assessment of the actual prevalence of the parasitosis in our country is difficult due to the high proportion of asymptomatic carriers, lack of diagnostic focus to seek this diagnosis, lack of targeted epidemiological studies in humans and animals - intermediate and final hosts of the parasites. Based on the summarized and analyzed data, recommendations for limiting the distribution of the echinococcosis in the country are given.

Keywords: Echinococcosis, Bulgaria, distribution, research

L33 INVESTIGATION OF MORPHOLOGICAL PROPERTIES OF ERYTHROCYTES IN EXPERIMENTAL MODELS OF BLOOD CLOTS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS, USING SCANNING ELECTRON MICROSCOPE

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The aim of the present study was to describe the morphological characteristics of erythrocytes in experimentally in vitro induced models of blood clots from healthy donors and patients with type 2 diabetes mellitus (T2DM), using scanning electron microscopy (SEM). The experimental models of blood clots from the healthy subjects and from the T2DM patients were formed using a rotational viscometer LS 30 Contraves. The scanning electron microscope JSM 6390 was used to study the morphological properties of erythrocytes in experimentally induced blood clots. In healthy individuals, the predominant part of the erythrocytes on the surface of the blood clots formed experimentally in vitro had a normal biconcave shape – discocytes. In patients with T2DM, the presence of discocytes was observed on the surface of the blood coagulates, but most of the erythrocytes had an atypical shape: knizocytes, erythrocytes with a "knotted" membrane, erythrocytes with a "helmet"-shape, etc. SEM images showed that in healthy subjects, blood clots contained erythrocytes "twisted" in thick fibrin fibers and/or "stranded" with thin fibrin fibers, forming a multi-pore network. In patients with T2DM, the formation of a dense fibrin network was observed, in which activated platelets and many atypical erythrocytes were "stranded". The results obtained by the method of scanning electron microscopy could be of importance for an individualized (personalized) diagnosis and treatment of patient with T2DM.

Keywords: type 2 diabetes mellitus (T2DM), erythrocytes, blood clots, scanning electron microscopy

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L34 EXAMINATION OF MORPHOLOGICAL AND MECHANICAL PROPERTIES OF ERYTHROCYTES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS, USING ATOMIC FORCE MICROSCOPE

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The aim of the present study was to evaluate the morphological parameters (diameter and roughness) and the mechanical properties (Young's modulus and adhesion force) of erythrocytes from healthy donors and patients with type 2 diabetes mellitus (T2DM), using atomic force microscope (AFM). Using ACM Dimensional ICON Bruker NanoScope V9 Instrument (ACM Bruker) erythrocytes from healthy donors and from patients with T2DM were examined. Morphological and mechanical properties of red blood cells were studied in parallel with PeakForce QNM (Quantitative Nano-Mechanical Mapping) mode of ACM. The resulting images were analyzed with the program NanoScope Analysis 1.9 (Bruker). The Young's modulus was calculated according to the physical-mathematical model of Johnson-Kendall-Roberts in its variety "two-point method". AFM images of the erythrocytes from the healthy donors showed that predominated erythrocytes with a normal biconcave shape. In patients with T2DM, the so-called erythrocyte polymorphism was observed. In patients with T2DM the diameter of erythrocytes increased statistically significantly by 14% ($p \leq 0.001$), Young's modulus of erythrocytes statistically significantly increased by 27% ($p \leq 0.001$), and the adhesion force statistically significantly increased by 41% ($p \leq 0.001$), compared to the data of healthy donors. A positive correlation relationship was established between Young's modulus and the adhesion force of erythrocytes ($p=0.04$; $r=0.542$), in patients with T2DM. The morphological and the mechanical parameters studied by atomic force microscopy could be used in clinical practice as precise bioindicators for the state of the red blood cells.

Keywords: type 2 diabetes mellitus (T2DM), erythrocytes, Young's modulus, adhesion force, atomic force microscope

Acknowledgments: This work has been accomplished with financial support by Grant № BG05M2OP001-1.002-0011-C02 financed by the Science and Education for Smart Growth Operational Program (2014-2020) and co-financed by the European Union through the European Structural and Investment funds. The study has been supported and by the Basic Research Project – 2018 (КП-06-Н27/13): “Development of experimental microfluidic system and methodology for assessing microrheological properties of blood. Analysis of the peripheral vasomotor reactivity and vascular endothelial function in patients with type 2 diabetes mellitus”, funded by the Bulgarian National Science Fund.

L35 PRODUCTS WITH SNAIL EXTRACT – WHEN SCIENCE MEET BUSINESS

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As a result of many years of scientific research and accumulated results, a start up was established. It aims to create innovative cosmetic products and food supplements based on studied biocomponents. Our products are developed after a successful research in collaboration with a number of prestigious foreign research laboratories and are based on natural components, such as high-quality purified extract of garden snail Helix aspersa and various plant species. They help speed up tissue regeneration and strengthen the body's immune system. The products do not contain parabens, silicones and artificial colours, so as not to cause allergic reactions. They are suitable for all skin types and for all ages, both for men and women. The unique properties of the developed products are due to the extract collected from the garden snail of the species Helix aspersa, which contains extremely important and valuable components such as collagen, elastin, allantoin, glucosamine glycans, proteoglycans, peptides and glycopeptides, glycolic acid, vitamins A, C and E. The active ingredients are very similar in composition and structure to those in the human body, which supports the processes of recovery and regeneration of the skin. Snail extract successfully protects and shields the skin from the harmful effects of the environment, causing premature ageing. The extract is gathered from snails without causing them any suffering or injury, after which they continue their normal lifestyle! The effectiveness and safety of the products have been proven through numerous tests that do not use animal experiments. Products are manufactured in a licensed facility in Sofia, Bulgaria. The facility for production of cosmetic products and food supplements has implemented a certified quality control system in accordance with the requirements of the International standard (GMP and HACCP).

Keywords: snail, biocompounds cosmetics, food supplement

P1 SUGAR PROFILE OF BULGARIAN HONEYS FROM BLACK SEA REGION BY NMR

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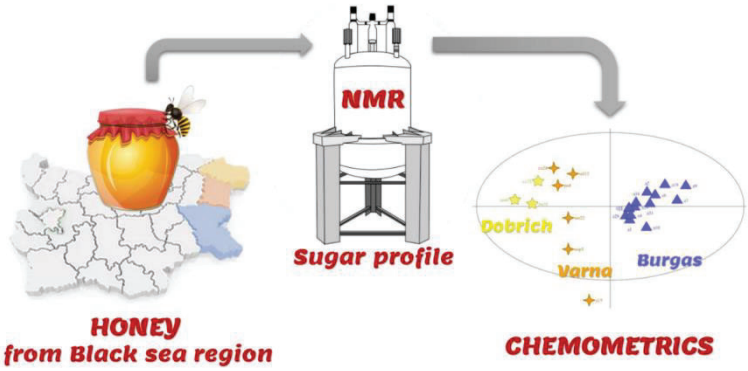
Honey is widely used in traditional and veterinary medicine, pharmacy and cosmetics, but is also the third most adulterated food. Advanced analytical methods have been used for authentication, determination of botanical or geographical origin and detection of adulteration. Beekeeping and honey production have long tradition in Bulgaria, where more than ten thousand tons are produced and exported. About 45% of all apiaries in Bulgaria are located in Black Sea region. Dobrich, Varna and Burgas are the main provinces on the Bulgarian Riviera. Strandzha Nature Park, where the most famous Bulgarian honey – Strandzha honeydew honey is produced, is situated in Burgas Province. This type of honey possesses a sign of Protected Designation of Origin. The aim of the present work was to compare the sugar profile of honeys from the provinces Dobrich, Varna and Burgas by NMR spectroscopy. We use classical and advanced 1D and 2D NMR experiments to determine the chemical composition of 23 honey samples from Black Sea region and to measure the quantity of a number of detectable components – carbohydrates, organic and amino acids, alcohols, HMF and other. Statistical methods provide ways to distinguish the characteristic substances, which depend on the geographical origin. The combination of NMR spectroscopy and chemometrics allows easy determination of the regions, where the honey is produced.

Acknowledgements: This work was supported by the National Science Program "Healthy foods for a strong bioeconomy and quality of life". Support for the analytical equipment was provided by the Bulgarian National Science Fund (UNA-17/2005, DRNF-02-13/2009) and the Ministry of Education and Science – Bulgaria (INFRAMAT project).



Keywords: Honey, NMR spectroscopy, Sugar profile, Chemometrics

P2 SYNERGISTIC ANTIFUNGAL EFFECT OF ERIPHIA VERRUCOSA FRACTIONS COMBINED WITH EXTRACTS FROM GENTIANA SP AND THYMUS VULGARIS

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Despite recent progress in clinical management, invasive fungal infections are still a difficult problem and have high mortality. This situation imposes the search for alternative treatment strategies. The marine environment is a huge source of discovered bioactive natural products. At the same time, the use of medicinal plants has a long history in the treatment of a range of diseases. Our previous research demonstrated a significant antifungal effect of the protein fraction of mollusk organisms or extracts of medicinal herbs against fungal strains from the divisions Zygomycota and Ascomycota. In this study, the synergistic antifungal effect of Eriphia verrucosa hemolymph protein fraction and extracts of Gentıana sp. and Thymus vulgarıs against potentially pathogenic filamentous fungi (Fusarium solani, Penicillium griseofulvum. Alternaria solani Mucor hiemalis, Aspergillus niger, Botrytis cinerea, and Candida albicans) was investigated. The hemolymph from E. verrucosa (HLEv) was collected and purified using different membrane techniques. Metanolic extracts of G. cruciata (GC1), G. asclepiadea (GA2), and T. vulgarıs (Ths2) were used in the experiments. Fungal growth inhibition was assayed by agar well diffusion (AWD) and broth micro-dilution (BMD) methods. The results revealed that the fractions used individually exhibit a fungicidal effect against F. solani, P. griseofulvum, M. hiemalis, and C. albican. The combined application of HLEv with the plant extracts leads to an increase in antifungal activity. The most effective and longest-lasting growth inhibition was achieved in the experiments with P. griseofulvum. The combined use of plant extracts enhances the growth inhibition effect of the E. verrucosa hemolymph.

Keywords: antifungal activity, Eriphia verrucosa, Gentıana sp., Thymus vulgarıs, synergistic effect

Acknowledgements: This research was carried out with the support of DO1-217/30.11.2018 National scientific program “Innovative low-toxic biologically active precise medicine (BioActiveMed)“.

P3 ANTIFUNGAL ACTIVITIES OF NATURAL AND MODIFIED ZEOLITES

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Antimicrobial and antifungal resistancesare serious problems nowadays. A need of improvement of existing and development of new products with antimicrobial and antifungal activity exist. Fungi can cause different diseases. Some strains belonging to the genus Aspergillus cause aspergillosis, ocular infections, sinusitis, otomycosis, osteomyelitis, endocarditis, urinary tract infection. Representatives of the genera Aspergillus, Penicillium, and Fusarium produce a large number of mycotoxins such as aflatoxins, citrinin, patulin, etc. that are toxic to plants, animals and humans. One of the approaches to fight against fungi is the time release of an antimicrobial agent over time from a microporous material such as zeolites. Zeolites possess ion-exchange properties through which various cationic modification could be obtained. The modification of the zeolites with silver, copper, zinc or other ions imparts antimicrobial properties. The aim of present study was to investigate antifungal activity of natural and modified zeolites on fourth fungal strains. Six substances based on natural zeolite from BeliPlast, Bulgaria, modified with silver, copper and iron ions were tested with Agar diffusion method for their antifungal activity against fourth fungal strains: Aspergillus niger, Aspergillus fumigatus, Mucor hiemalis, and Penicillium griseofulvum. A commercial antimicrobial substance; ZnO impregnated with Ag; and TiO2 impregnated with Cu were also tested for comparison. Clear inhibitory effect against all the strains were demonstrated by the substances copper modified zeolite, ZnO with Ag, TiO2 with up to 7 days after the beginning of strains cultivation. A. fumigatuswas influenced by the Fe zeolite up to 7 days. The commercial antimicrobial product has the effect on P. griseofulvum up to 7 days and on A. niger for up to 48 hours. The studied forms of zeolite have a potential as useful antifungal agents against A. niger, A. fumigatus, M. hiemalis, and P. griseofulvum. They couldbe perspective compounds for the next investigations.

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P4 ELECTROSPUN POLY (3-HYDROXYBUTYRATE) MATERIALS FOR REGENERATIVE MEDICINE

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In recent years great expectations have been reposed in nanomaterials and nanotechnologies in view of the various possibilities for their application, particularly in the area of medicine for treatment of human diseases (the so-called nanomedicine). Micro- and nanofibrous materials, in particular those of a great length, are very close to a wide practical application. Fibrous materials of this type are fabricated by the cutting-edge technology of electrospinning. Studies on the possibilities for their preparation, and moreover – the preparation of materials with a controlled composition and morphology, and targeted properties have been intensively carried out. In the present study fibrous materials were fabricated by electrospinning of poly(3-hydroxybutyrate) (PHB) (14% w/v) spinning solution in $CHCl_3$/DMF = 4/1 (v/v). Electrospinning was conducted at a voltage of 25 kV, tip-to-collector distance of 25 cm, feeding rate of the spinning solution of 3 ml/h and collector rotation speed of 1500 rpm. The morphology of the PHB materials was observed by SEM. In order to evaluate the materials as wound dressings for regenerative medicine, the biocompatibility of the mats was further tested.

Keywords: Electrospinning, PHB, regenerative medicine

P5 MODULATING THE OXIDATIVE STRESS DURING FE-INDUCED OXIDATIVE DEGRADATION OF LECITHIN AND DEOXYRIBOSE USING INDOLE-3-PROPIONIC ACID HYDRAZONE DERIVATIVES AND STUDY ON THEIR CHELATING PROPERTIES

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A new scaffold for treating neurodegenerative disorders has recently emerged – the indole propionic acid (IPA) as a potent antioxidant devoid of prooxidant activity able to inhibit aggregation of denatured proteins. IPA is also able of supressing the hydrogen peroxide-induced neuronal cell death. Because IPA has a similar structure to endogenous substances, such as melatonin, it has been considered in multiple studies as a target for drug discovery. We were interested in synthesizing new series of IPA derivatives containing hydrazone function that have showed promising activity in our previous studies. The studied compounds were tested spectrophotmetrically in model systems of iron-induced oxidative damage using lecithin and deoxyribose as substrate. In the lecithin model systems all derivatives demonstrated protection effect. The reference indolepropionic acid, and the two vanilloid derivatives (4-hydroxy-3-methoxy and 2-hydroy-4-methoxy) denoted equivalent antioxidant properties. The best antioxidant effect was denoted by the catecholid compound containing a 2,3dihydroxy moiety (AOA = 65%), followed by the syryngaldehyde derivative (37,3%). In the deoxyribose system the two vanilloid compounds had slight prooxodant effect. The other three compounds decreased the absorbance compared to the control which has been observed most prominently in the presence once again of the 2,3diOH derivative. None of the compounds demonstrated strong chelating properties but a capability to form an iron complex in the absence of 1,10-phenantrolin has been observed in the presence of 2,3-diOH. We can conclude that we have outlined a perspective compound of the seried with prominent antioxidant properties that will undergo further evaluation on in vitro biological models.

Keywords: indole propionic acid, antioxidants, indole-hydrazone hybrids, iron-induced oxidation, iron chelation

Acknowledgments: This work was financially supported by The National Science Fund of Bulgaria, Young scientist project КП-06-ПМ49/3.

P6 INVESTIGATION OF THE POROUS TEXTURE OF CARBON MATERIALS OBTAINED FROM DIFFERENT RAW MATERIALS AND TREATMENT CONDITIONS

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Classification of pores is one of the basic requisites of comprehensive characterization of porous carbon materials. The relative performance of different porous carbon material are highly dependent on its the internal pore structure. For better understanding of physical process, taking place within a porous medium, it is necessary to fully characterize the porous texture of porous materials like pore volume, pore size distribution, the size of the specific surface area etc. To evaluate the porous texture of porous carbon materials obtained in the laboratory, it was investigated by the amount of adsorbed nitrogen at 77 K. Analyzes were performed on an Autosorb iQ-MP VITON, Guantachrome instrument. The results obtained for pore volume, pore size distribution, the size of the specific surface area of porous carbons and carbon foam samples obtained from different raw materials and treatment conditions are presented. Based on the obtained results, a preliminary assessment of the possibilities for their application was made.

Keywords: Porous Carbon materials, Carbon foam, Classification of pores

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P7 RESEARCH ON THE INFLUENCE OF GAMMA-IRRADIATION ON ALMOND NUTS

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With the rising incidence of food-induced allergies in the western world and the increased global awareness of food allergies, efforts are needed to ensure the safety of sensitive consumers [1]. Dried fruits and nuts make up a significant portion of the commodities traded globally, and the presence of yeasts and molds on dried fruits and nuts can be a public health risk because of the potential for exposure to toxigenic fungi. Nuts are highly exposed to fungi contamination in the field during transport or storage and this can result in the production of mycotoxins. Therefore, some techniques to enhance their storage stability and safety such as are implied. Almond seeds offer many benefits to human health. They are rich in proteins – identified are more than 430 proteins involved in primary biological processes including metabolitic/catalytic, structural, and binding functions (2). Amandin is the major storage protein in almond seed, which belongs to the legumin class of seed proteins, which itself is a part of the globulin family (3). It accounts for about 70% of the total soluble proteins. Amandin is a hexamer and each monomer is composed of two polypeptide chains (α-chain of about 45 kDa and β-chain of about 20 kDa) linked with disulfide bridge. The processing and storage techniques may affect the chemical composition, structure and properties of almonds. The aim of the study is to determine the influence of γ-irradiation on the stability of the storage proteins of Prunus dulcis almond. Seeds are supplied by the local market (Bulgaria). The samples were irradiated separately at a radionuclide 60Co source with 8200 Ci activity. The chosen absorbed dose was 10 kGy. After the γ-irradiation, the seeds were grounded; almond flour was defatted with acetone, dried, and dissolved in water. The total protein content was estimated using Bradford protein assay. Control experiments with non-irradiated seeds were performed. A 7.5-12% gradient polyacrylamide gel electrophoresis (SDS-PAGE) was applied to monitor the changes in the profile of the protein fractions of the irradiated samples in comparison to non-irradiated samples. The results have shown that the major storage proteins in almond seeds remain unaltered after γ-irradiation at 10 kGy, which suggests that their nutrition properties are preserved, while the risk of fungal contamination is minimized.

Keywords: almond seeds; γ-irradiation; storage proteins, SDS-PAGE

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P8 FAT CONTENT, FATTY ACIDS COMPOSITION AND QUALITY OF 52 GENOTYPES OF CAMELINA SATIVA GROWN IN BULGARIA

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Camelina sativa is an oil crop which gains interest in many countries because of its modest requirements to the environmental factors as well as the potential for multipurpose application of its products. Although Bulgaria is a secondary source of origin for Camelina sativa the tradition for its use here has been replaced in the last century by sunflower cultivation. Thus, the advances in camelina improvement remain unfamiliar to local farmers. For that reason, the aim of our work was to evaluate the seed oil from 52 genotypes of local camelina landraces, introduced varieties and breeding lines from all over the world, regarding fat content, fatty acids composition and oil quality represented by the amount of conjugated dienes and trienes. Fat content was measured after extraction of oil with hexane in Soxhlet apparatus. Fatty acids composition was determined by gas chromatography on methyl esters. Conjugated dienes and trienes were analyzed directly in oil by spectrophotometry. The results revealed that fat content of seeds was between 31 and 38 %. Seventeen fatty acids were detected and among them the essential alpha-linolenic (18:3, omega-3), linoleic (18:2, omega-6) and oleic (18:1, omega-9) predominated in amounts of 25-36%, 15-23% and 15-19%, respectively. Conjugated dienes and trienes were at levels of 1.7-2.7 and 0.4-0.8 (K at 232 and 268 nm, respectively) showing a low level of oxidation products. So, Camelina sativa seeds are a valuable source of oil with high amount of essential unsaturated fatty acids, relatively stable to autoxidation processes.

Keywords: Camelina sativa, genotypes, fat content, fatty acids, conjugated dienes and trienes

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P9 PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY OF DRY ROSE EXTRACT, A NEW BY-PRODUCT FROM ROSE CONCRETE PRODUCTION

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Rose concrete is one of the main products in rose industry, prepared from fresh rose flowers by extraction with n-hexane. The product is a complex mixture of non-polar compounds, while polar compounds are retained in the waste material. Therefore, the recovery of valuable biologically active substances is an approach for reduction and valorization of the waste generated in the rose industry. The aim of this study was a phytochemical characterization and assessment of the antioxidant capacity of dry rose extract obtained by aqueous methanol extraction of rose flowers after concrete production. Total phenolic content and total flavonoid content, determined spectrophotometrically, were found to be 206±14 mg GAE/g DE and 139±8 mg RE/g DE. Further, the dry rose extract was re-extracted with EtOAc in order to obtain an extract enriched in flavonoids. The LC-MS-DAD of the resulting extract led to identification of 23 quercetin and kaempferol glycosides and their structures were confirmed by ^{1}H NMR of the individual flavonoids, isolated from the EtOAc extract by PTLC. The dry rose extract was found to be a good scavenger of DPPH$^{\bullet}$ (IC_{50} 0.34±0.01 mg/ml) and ABTS$^{\bullet+}$ (1.977±0.005 mM Trolox/g DE) and to possess high Fe-reducing power (5.40±0.14 µM Fe^{2+}/g DE). The obtained results indicate that the new by-product obtained from waste after rose concrete production might be a good source of natural antioxidants in food industry and cosmetics.

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Keywords: Rose dry extract, flavonoid glycosides, antioxidant activity

P10 CHEMICAL COMPOSITION AND ANTIOXIDANT CAPACITY OF THE FRUIT SKINS OF EUROPEAN PLUM CULTIVAR "ČAČANSKA LEPOTICA" INFLUENCED BY DIFFERENT ROOTSTOCKS

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Plum fruits are valuable sources of nutrients, vitamins, minerals, dietary fibers and antioxidant compounds, accumulating predominately in their skins (peels). This study aimed to investigate the influence of the rootstocks on the content of sugars, organic acids and antioxidant phenolic compounds in the fruit skin of European plum cultivar "Čačanska Lepotica" grown on 'Wavit', 'Janka', 'Ishtara', 'GF-677' and 'GXN-15' rootstocks.1H NMR of the methanol extracts led to the identification of sucrose, α- and β-glucose, sorbitol, fructose, malic and quinic acids, while LC-MS-DAD showed the presence of neochlorogenic and chlorogenic acids, cyanidin-3-O-glucoside, cyanidin-3-O-rutinoside, peonidin-3-O-glucoside, peonidin-3-O-rutinoside, hyperoside, isoquercitrin, rutin and an unidentified quercetin-3-diglycoside. The quantification of the individual compounds was performed by 1H NMR (sugars and organic acids) and HPLC (phenolic compounds). A good correlation was observed between the content of total phenolics, flavonoids, anthocyanins and individual phenolic compounds in the extracts of the fruit skins and their antioxidant capacity (DPPH, ABTS and FRAP). The obtained results revealed that the content of the nutritional and bioactive compounds in the plum fruit skin was significantly influenced by the rootstock. The 'Wavit' rootstock appears to provide good fruit quality due to the highest content of sugars, organic acids and antioxidant compounds in the fruit skin.

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Keywords: Plums; rootstock, fruit skin; sugars; organic acids; phenolic compounds; antioxidant activity

P11 ANTICANCER POTENTIAL AND MAIN PHYTOCHEMICAL COMPONENTS OF WILD COLLECTED HYPERICUM SPECIES FROM BULGARIA

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Three wild growing Hypericum species were collected from their natural habitats in Bulgaria - H. perforatum L. and H. tetrapterum Fries. from Western Balkan region and H. richeri Vill. from the regions of Vitosha and Rila Mountains. Their cytotoxic effect in cell cultures of breast cancer (MCF7- non-invasive low-metastatic and MDA-MB-231- highly metastatic) and normal (MCF10A) cell lines were studied. For this purpose hexane, chloroform and methanol extracts of the three species were prepared. In addition, the contents of hypericins and flavonoids were compared in the methanol extracts of the species. Noteworthy, the hexane and chloroform extracts of all three Hypericum species showed selectivity of inhibition of the two cancer cell lines as compared with the normal MCF10A one. This effect was strongest for the hexane and chloroform extracts of H. perforatum, with activity of the hexane extract exceeding the one of chloroform over 15 times. Similar selectivity, although to a lower extent was expressed for H. tetrapterum hexane extract. In H. richeri collected from the Vitosha Mountain, the hexane and chloroform extracts showed comparable activities of inhibition of cancer as compared with normal cell lines. Interestingly, the methanol extracts of all three species expressed a stimulating effect of cell growth both in normal and cancer cells, this effect being more profound for H. perforatum and H. tetrapterum. H. richeri collected from both habitats showed to be superior hypericin producer, followed by H. perforatum and H. tetrapterum. The highest flavonoid levels were established for H. richeri from Rila and H. perforatum and the lowest ones - for H. richeri, collected from Vitosha Mountain. The obtained results are indicative of the possible cell protecting rather than inhibitory effect of the high flavonoid contents in the methanol extracts which might explain their growth enhancing action the present experiment. The low correlation between cytotoxicity and hypericin content might be explained by the lack of photo-activation in the performed experimental design.

Keywords: Hypericum species, breast cancer, hexane, chloroform and methanol extracts
Acknowledgements: We are thankful to the National Scinetiic Fund, Bulgaria, Grant num. КП-06-Н39/6.

P12 BUCKWHEAT (FAGOPYRUM ESCULENTUM MOENCH) BY-PRODUCTS AS A SOURCE OF ANTIOXIDANT COMPOUNDS

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Plant-based milk alternatives are an ever-growing segment of food industry due to the recognition of their health benefits on the one hand and vegan food trends on the other. The research on buckwheat based beverages is very limited compared to other crops like soy and almond and more efforts are required to continue innovation of alternative plant based foods including milk substitutes. The aim of the current study is to evaluate the antioxidant capacity of by-products of buckwheat (Fagopyrum esculentum Moench) processing.

Preliminary soaked dehulled and whole buckwheat grains (Panda crop) were rinsed and ground in a blender with water at ratio 1:4. The obtained mixture was subjected to filtration in order to separate the water soluble milk-like extract from the dregs (okara). The phenolic compounds were extracted from buckwheat dregs using 80% methanol. After 15 minutes shaking at 70 °C the suspension was filtered and the residue was extracted again. The procedure was repeated three times. The collected filtrates were combined and, after evaporation, freeze-dried and subjected to antioxidant activity evaluation under lipid oxidation conditions. The process was monitored by subjecting the samples to lipid hydroperoxides determination. Methanolic extracts obtained from the okara of whole buckwheat grains showed relatively high radical scavenging and antioxidant activity. In conclusion, by-products from the production of buckwheat based beverages and milk alternatives can be favourable candidates as sources of antioxidants and other bioactive compounds.

Keywords: buckwheat dregs, milk alternatives, antioxidants

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P13 MICROBIAL CONSORTIUM WITH NITROGEN-FIXING AND MINERAL SOLUBİLİZİNG ACTIVITIES FOR THE GROWTH OF CAMELINA (CAMELINA SATIVA L. CRANTZ)

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Macronutrients, nitrogen (N), phosphorus (P) and zinc (Zn) are the basic need for plant growth and play several significant roles in the entire life of the plants. These nutrients perform beneficial activities in the metabolism of plants and protect them from various abiotic and biotic factors exerted by the outer environment. Bioinoculants provide a better opportunity for ecological farming practices to enhance crop productivity. The present study deals with the isolation of nitrogen-fixing, phosphorus and zinc solubilising microbes from rhizospheric soil and root's internal tissues of the camelina (Camelina sativa L. Crantz) crops. Rhizospheric and endophytic microorganisms were isolated from three different varieties of camelina (K1, K2, and K3) sown in spring alone or together with the two companion crops pea (Pisum sativum L.) and common vetch (Vicia sativa L.). A total of 55 rhizospheric and endophytic bacteria were isolated and screened for the plant growth promoting (PGP) traits of nitrogen fixation, solubilisation of phosphorus, and zinc. Screening for nifH gene, which encodes the dinitrogenase reductase, was done by using the genomic DNA of each microbial isolate. Then the microorganisms were screened for P-solubilisation and Zn-solubilisation qualitatively using Pikovskaya and ZnO agar plate assay. Among all the isolates, 36 were found to fix nitrogen, fifteen exhibited phosphorus and five zinc solubilisation activity, respectively. The microbial consortium of nitrogen-fixing and mineral solubilizing microbes could be used as biofertilizers for plant growth and soil health.

Keywords: Camelina sativa; Nitrogen-fixation; Phosphorus; Zinc

P14 DEVELOPING INTERCROPPING SYSTEMS WITH CAMELINA TO INCREASE THE YIELD AND QUALITY PARAMETERS OF LOCAL UNDERUTILIZED CROPS – BULGARIAN PARTICIPATION IN NEW CORE ORGANIC PROJECT

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Primary **s**trategical goals of the contemporary agri-food sector are the sustainability of food production and conservation of natural resources. Diversification of crops and cultivation systems are proven as beneficial technics specially in organic farming. The environmental impact as changes of the biodiversity of microorganism belowground, diseases, pest and weeds, CO_2 emmision, soil characteristics, food quality and yield of intercropping system of cash cover crop, underutilized in Bulgaria, but appreciated in the the rest of the world for its valuable oil and cake, as camelina (Camelina sativa L.),and well-know by farmers crops is evaluated within the new CORE Organic project. Each partner of the international team is identifying through local living labs with farmers, experts and other stakeholders the best companian-crop to be intercropped with camelina under different climatic conditions. Setting-up innovative post-harvest processing systems to efficiently separate seeds for specific food/feed applications and analyzing seed quality of the different species identifying those more suitable for meeting local consumers' needs and expectations are ather objects of the project. Demonstrating the feasibility of the proposed intercropping systems in large scale field trials at farm level is planned for organic farms. Bulgarian partner in the project "Developing intercropping systems with camelina to increase the yield and quality parameters of local underutilized crops (SCOOP)", is the Agricultural University-Plovdiv. Its certified organic fields, laboratory complex and partner organic farms are operative sites for 36 months of the project. Financial support from CORE Organic ERA-NET and the Bulgarian National Science Fund was gratefully acknowledged.

Keywords: Camelina sativa, intercropping, biodiversity, organic farming

P15 BIOLOGICALLY ACTIVE SUBSTANCES ISOLATED FROM MARINE ORGANISMS WITH POTENTIAL ROLE IN THE THERAPY OF PATHOLOGICAL CONDITIONS WITH OXIDATIVE STRESS ETIOLOGY

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In recent years, the interest in natural substances with protective and/or healing effects has increased. Substances isolated from marine organisms exhibit a variety of biological activities, incl. antioxidant effects. It can be assumed that these substances may have a beneficial effect on the prevention or treatment of diseases and pathological conditions with oxidative stress etiology. This work presents the in vitro study of the antioxidant capacity of hemolymph fractions, isolated from the marine snail Rapana venosa, as well as the in vivo regenerative capacity of chitosan, isolated from crustaceans, in a murine excisional wound model. Free radical generating systems

were used to evaluate the antioxidant capacity of the substances. To test the regenerative capacity of chitosan, 6 mm diameter wounds were made on mice backs, and were treated for 9 day swith 50% alcohol; polyethyleneglycol (MW=400) in 50% alcohol (PEG); chitosanin PEG (Chs), and combination chitosan+diosgeninin PEG (ChsDg). The results showed a very good antioxidant effect of hemolymph fraction with MW 10-50 kDa, suggesting its successful application in oxidative stress pathological conditions. The results of the in vivo experiments showed that ChsDg had the most pronounced overall effect on wound area reduction, followed by Chs and PEG. The clearly expressed positive effect in the studied models showed that chitosan, especially in combination with diosgenin, is an excellent therapeutic agent for the treatment of wounds. Undoubtedly, futurere search to clarify the mechanism of action and selection of the most active ingredients of marine organisms' substances are necessary.

Keywords: chitosan, hemolymph, murine excisional wound model, oxidative stress, Rapana venosa

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P16 OXIDATIVE STRESS AS A MEASURE OF THE ADAPTIVE CAPACITY OF ECONOMICALLY IMPORTANT FISH TO DIFFERENT ENVIRONMENTAL CONDITIONS OF THE BULGARIAN BLACK SEA

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The Black Sea is a semi-enclosed sea with a lowout flow and is considered to be heavily polluted. According to monitoring data fish stocks in the Black Sea have decreased. The present study aimed to assess the adaptive potential of seven fish species (Pontic shad, horse-mackerel, sprat, whiting, red mullet, goby and turbot) in the Bulgarian Black Sea part by measuring oxidative stress (OS). Fish specimens were caught from localities with different ecological conditions. OS in fish individuals was assessed by measuring lipid peroxidation (LPO), glutathione concentration, activities of superoxide dismutase, catalase (CAT), glutathione peroxidase, and glutathione-S-transferase (GST) in the liver. The result showed differences in the response to environmental conditions between fish with pelagic, demersal and semi-demersal lifestyle. Pelagic fish (Pontic shad, horse-mackerel, sprat) had no signs of OS except for their higher CAT activity which is the result of higher oxygen consumption and metabolic rate when

swimming fast. Demersal and semi-demersal fish (red mullet, goby, turbot) appeared to be adapted to the environment of their habitats, displaying also higher activity of GST, which is involved in detoxification of the organism. Only whiting demonstrated OS and attempts to compensate (high LPO and activated antioxidant system). It could be concluded that the studied fish can cope well with the present conditions of the marine environment, except for whiting which needs to activate compensatory mechanisms to overcome unfavorable changes in the environment. Obviously, further studies are needed for risk assessment of environmental changes of the Black Sea, including also global change.

Keywords: Black Sea, Bulgaria, demersal fish, oxidative stress, pelagic fish

Acknowledgments: This work was supported by grant КП-06-Н41/7/2020 of the National Science Fund, Bulgaria

P17 RARE EXOME VARIANTS ASSOCIATED WITH FRONTOTEMPORAL DEMENTIA IN BULGARIAN PATIENTS

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After Alzheimer's disease, frontotemporal dementia (FTD) is the second most common cause of dementia in people under the age of 65. There are still difficulties in its diagnosis because of the lack of recognition and the overlap of clinical symptoms with the other neurodegenerative disorders. According to the latest research, about 40% of FTD is inherited, mainly in autosomal dominant manner. The purpose of the study is to reveal predisposing variants to FTD using exome sequencing data of 140 Bulgarian patients with FTD. The patients' samples were divided into two DNA pools and exome sequenced by Novogene. Variants associated with FTD (144) were selected from DisGeNET database and compared with the sequencing data. The results showed that altogether five predisposing to FTD variants were identified in Bulgarian cohort of patients, among which three were common (MAP>1%) (TEPSIN rs2255166, CEP131 rs906175 and GRN rs9897526) and two were rare (MAF<1%) (RIMS rs377163259; UBQLN2 rs749463696). The frequency of the detected rare variants was 0.055% and 0.50%, respectively, the latter being associated with amyotrophic lateral sclerosis with FTD. In this study we declare several genetic variations conferring risk for FTD in Bulgarian patients. Their combination with a variety of environmental exposures may result in increased susceptibility to FTD.

Keywords. Frontotemporal dementia (FTD), exome sequencing, predisposing variants

Acknowledgement. The study is a part of the project KP-06-N33/5 from 13.12.2019 of the National Science Fund of Bulgaria

P18 THE GENETIC ARCHITECTURE OF UNSPECIFIED DEMENTIA - RARE EXOME VARIANTS

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The aim of this study was to reveal rare genetic variants involved in molecular pathways related to the pathogenesis of unspecified dementia. Whole exome sequencing (WES) was performed on DNA pool with probes from 91 unspecified dementia patients. In total, 453631 variants were detected, 58400 of which are with frequency <0.001 in the general population. Their prevalence in general and in Bulgarian population was obtained from the GnomAD Exome database. The clinical significance was determined from the Varsome and ClinVar database. Four clinically significant rare variants in heterozygous state with higher frequency in patients compared to their population frequency were identified: B9D1 rs373478202 G>T (0.0026 vs. 0.0000); CC2D2A rs200904521 C>T (0.0165 vs. 0.0030); ASS1 rs148918985 C>T (0.00493 vs.0.0000); rs121908641 G>A (0.0124 vs. 0.0007). The B9D1 and CC2D2A gene variants are associated with Joubert syndrome type 9 and Meckel syndrome type 6, related with problems in central nerves system (CNS) development along with other symptoms. The variants in the ASS1 gene are associated with Citrullinemia type, due to high levels of ammonia which are toxic to the nervous system, and can lead to permanent brain damage. Rare heterozygous variants are suspected to play a role in the etiology of unspecified dementia but are currently insufficiently investigated and need further WES research.

Acknowledgment: KP-06-N33/5 from 13.12.2019 - National Science Fund of Bulgaria.

P19 DETECTION OF PATHOGENIC VARIANTS IN ALZHEIMER'S DISEASE RELATED GENES IN BULGARIAN PATIENTS BY POOLED WHOLE EXOME SEQUENCING

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In order to better understand the genetic etiology of Alzheimer's disease (AD) we have performed high-coverage pooled whole exome sequencing (WES) of Bulgarian patients and screened pathogenic variants in AD related genes (PSEN1, PSEN2, APP, APOE, TREM2, HFE, CLU and CR1). WES was performed on a DNA pool sample from 66 patients. Reads were aligned to the reference genome (GRCh37/hg19) and variants were annotated using wANNOVAR.The study was approved by the Ethical Committee of Medical University-Sofia, Bulgaria. Participants were informed about the study and have signed informed consent prior to blood sampling. Among the detected variants one common (gnomAD MAF>0.01) and three rare (gnomAD MAF<0.001) did not show statistically insignificant difference in frequency between patients and Bulgarian gnomAD exomes. The common variant is rs429358 (APOE) - with widely established effect on AD development. The rare variants are represented by: rs63750053 (PSEN1) – with confirmed pathogenicity in different populations; rs28936380 (PSEN2) –the effect of which should be further examined, since the C>G substitution at the same position leads to familial AD; and rs104894002 (TREM2) – causative for the autosomal recessive Nasu-Hakola disease characterized by dementia. We have validated the role of four pathogenic/likely pathogenic variants in the complex genetic background of AD by pooled WES of Bulgarian patients. The presence and effect of these variants should be further investigated in individual samples and should be related to more specific phenotypes.

Acknowledgement. The study is part of the project KP-06-N33/5 from 13.12.2019 of the National Science Fund of Bulgaria.

P20 DIARYLETHERS AND THEIR ANALOGUES AS POTENTIAL ANTIVIRAL AGENTS – SYNTHESIS AND COMPUTATIONAL STUDIES

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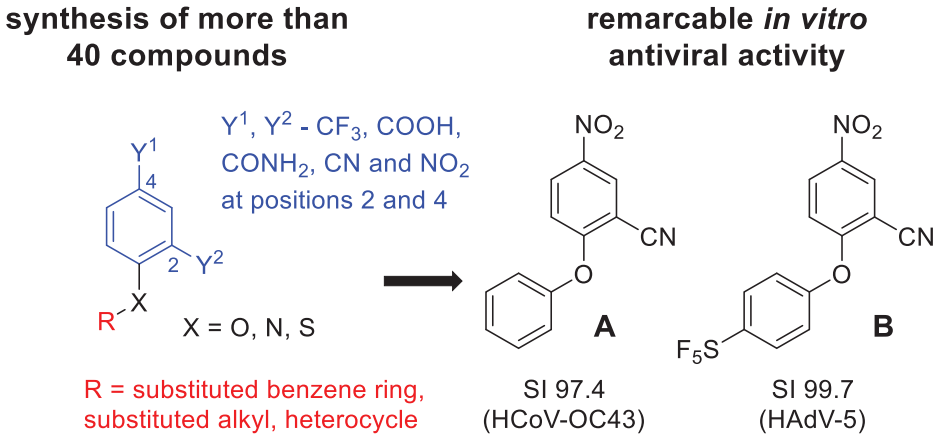
A series of diarylethers and their analogues were synthesized. All compounds were tested in vitro against six viruses (PV1, CVB1, CVB3, HAdV-5, HSV-1 and HCoV-OC43). Two compounds in this series demonstrated selective and remarkable activity – compound **A** toward Human Coronavirus OC43 and compound **B** toward Human Adenovirus 5 (SI 97.4 and 99.7, respectively). QSARs for the investigated antiviral activities were explored. The analysis was based on a large library of 113 diarylethers and their analogues comprising the newly synthesized compounds, as well as compounds previously published by us. Statistically reliable regression and discriminant models were derived which revealed structural and physicochemical features of the compounds important for the antiviral activities. These models may be used as guidance for synthesis of lead compounds with promising antiviral activity toward the investigated viruses.



Acknowledgments: This study was supported by Bulgarian Scientific Fund, project number: KP-06-H31-7.

Keywords: diarylethers, synthesis, coronavirus, adenovirus, QSAR

P21 EXTRACTION AND ANTITUMOR ACTIVITY OF HIGH-MOLECULAR HYDROLYZABLE GALLOTANNINS FROM COTINUS COGGYGRIA SCOP.

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Hydrolyzable gallotannins (HGTs) of up to 5 gallic acid residues have been described in C. coggygria extracts. Pentagalloyl glucose (PGG) is known for its antitumor, neuroprotective, antimicrobial and other acrivities. Thus far, HGTs with > 5 galloyl moities have not been found in C. coggygria. Our pilot studies show that such HGTs are present in considerable amounts in the plant of Bulgarian origin. The aim of the present study was to find a suitable extraction method for concentrating high molecular weight HGTs from the leaves of the Bulgarian plant and investigate their in vitro antitumor activity. Extractions were performed with different organic solvents. Their chemical compositions were determined by HPLC-LC-HRMS. The anti-proliferative activity of the obtained HGTs was studied in vitro by the NRU assay on various cultured human tumor cells in comparison to the non-tumorigenic MCF-10A cells. Flow cytometry was used to determine mechanisms of the HGTs' activity, specifically - cell cycle distribution and apoptosis. The best extraction method for concentrating HGTs of > 5 galloyl residues proved to be ethylacetate/water (pH 3.0) biphasic system and a subsequent precipitation of dicyclohexyl ammonium salts. The obtained results show that the studied extract is highly active against the HeLa (4.53 µg/ml) and HepG2 (21,03 µg/ml) cell lines. The mechanism of antitumor action in both cases was directing cells to apoptosis and blocking the cell cycle in the S-phase. In conclusion, HGTs of more than 5 galloyl residues are more powerful antitumor agents than PGG.

Keywords: hydrolyzable gallotannins, C. coggygria Scop., antitumor activity, cell cycle, apoptosis.

Acknowledgements: This work is financially supported by the National Science Fund of the Bulgarian Ministry of Education and Science, Grant No KP-06-N31/1.

P22 SYNTHESIS OF NEW ARYLIDENECAMPHORS AND PYRIMIDINES WITH CAMPHANE SKELETON – STRUCTURAL CHARACTERIZATION AND COMPLEX EVALUATION OF THEIR ANTIBACTERIAL ACTIVITY AND CYTOTOXICITY

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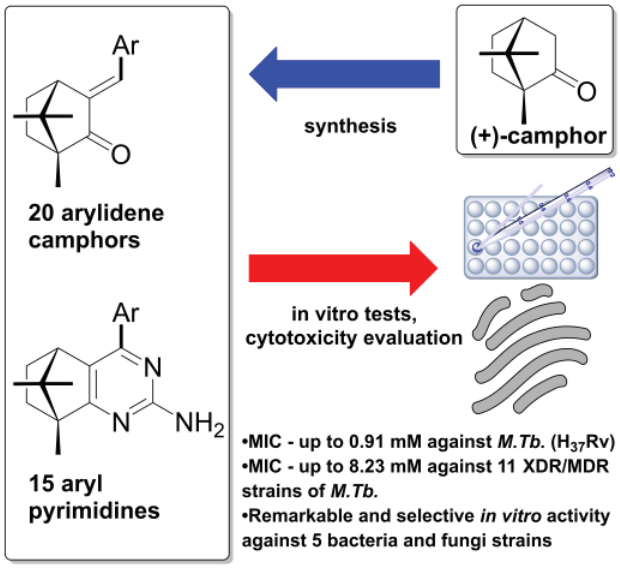
The synthesis of 20 arylidenecamphors and 15 pyrimidines with camphane skeleton is described. A modified method for preparation of highly sterically hindered 2-aminopyrimidines in two steps was demonstrated. A complex evaluation of antibacterial activity and cytotoxicity of these compounds was performed. The evaluation of their in vitro activity against Mycobacterium tuberculosis $H_{37}Rv$ showed different MIC values (up to 0.91 µM). Compound **35** demonstrated moderate (8.23 µM), but sustainable activity toward a collection of drug-resistant Mycobacterium tuberculosis strains. Many of the compounds (especially among 2-aminopyridines) exhibited good to excellent activity against different strains of pathogenic bacteria and fungi (MIC up to 0.60 µM for compound **50**), compared with reference antibiotics. Many of the newly designed compounds possess also in vitro cytotoxicity.
Keywords: Antibiotics, Camphor, Cytotoxicity, Drug discovery, Tuberculosis
Acknowledgments: This study was supported by Bulgarian Scientific Fund, project number: KP-06-H-39-7.



ATTITUDES OF THE STUDENTS OF THE "DENTAL TECHNICIAN" SPECIALTY AT MEDICAL COLLEGE "Y. FILARETOVA" ON THE USE OF CAD/CAM TECHNOLOGIES.

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Abstract
Objectives: The present study aims to determine the attitude of the students of the "Dental Technician" specialty of the Medical College "Y. Filaretova", Medical University-Sofia, regarding the use of CAD/CAM technologies in dental practice and training.
Methods: A survey containing 22 questions was developed and distributed among first-, second-, and third-year students. The survey is part of an infrastructure project at MU-Sofia. The questions are divided into two groups: questions of a sociodemographic nature (1-4) and specialized questions (5-22) aimed at the level of awareness, available experience, and attitudes of students regarding the application of CAD/CAM technologies in practice and the training.
Results: A total of 139 surveys were completed. A high percentage of students have heard about dental CAD/CAM (94.2%, n=131), and 59% (n=82) have seen how to work with the corresponding equipment. The percentage of students who worked with dental CAD/CAM was expectedly lower - 28.8 (n=40). The percentage of students who accept CAD/CAM technologies as an invariable part of their future work as dental technicians is relatively high - 66.9%. The most significant percentage of students received information about dental CAD/CAM technologies from college professors (65.5%, n=91) and mentors in dental technician laboratories (43.9%, n=61).
Conclusions: Students from the "Dental Technician" specialty are familiar with dental CAD/CAM technologies and express a positive attitude towards them. They accept them as a necessary part of modern dental practice and believe that it is essential that CAD/CAM training be advocated in the curricula of particular subjects.
Keywords: Dental technician, CAD/CAM, Students attitude, education

POSSIBILITIES OF PROCESSING MODAL VERBS IN ENGLISH

İNGİLİS DİLİNDƏ MODAL FEİLLƏRİN İŞLƏNMƏ İMKANLARI

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ÖZET

Amaç. İngilis dilində modal fellərin çox, Azərbaycan dilində isə az olması heç də bu dillərin göstərilən aspektdə müqayisəli öyrənilməsi lüzumunu aradan qaldırmır. Tədqiqatın məqsədi konkret ingilis modal fellərini nəzərdən keçirmək və müvafiq modal mənaların Azərbaycan dilində hansı vasitələrlə verilməsi imkanlarını qeyd etməkdir.

Yöntem. Tədqiqatda təhlil və müqayisə metodlarından istifadə edilmişdir. Bu məqsədlə ingilis dili materiallarını müxtəlif variantlarda Azərbaycan dilinə tərcümə edəcək və yeri düşdükcə orijinal Azərbaycan dili materiallarından da istifadə edəcəyik. Bu işin bir əhəmiyyəti də ondadır ki, Azərbaycan dilçiliyində modallıq məsələsi yalnız modal sözlərin timsalında öyrənilmişdir.

Sonuç. Biz modallıq kateqoriyasının elə bir sahəsinə daxil oluruq ki, ingilis və Azərbaycan dillərində onun ifadə vasitələri kateqoriya baxımdan bir-birinə müvafiq gəlmir. Bunlar ingilis dilində modal fellər və Azərbaycan dilində felin modallıq bildirən (arzu, lazım, vacib və bacarıq) şəkilləri, bəzi zaman formalarıdır.

Dilçilik ədəbiyyatında modallıq bəzən qiymətləndirici bir kateqoriya, yaxud sosial xarakterli bir kateqoriya, yəni söyləmin məzmununa daxil olan bir element kimi dinləyənə təsir etmək və onda müəyyən reaksiya yaratmaq vasitəsi hesab olunur. Modallıq öz xarakterinə görə sosial və ya fərdi kateqoriya hesab oluna bilməz.

Modallıq kateqoriyasına belə bir baxış onunla izah olunur ki, bu kateqoriyada söyləmin məzmununun formalaşmasında qiymətləndirmə münasibəti vardır ki, bu da onun ünsiyyət vasitəsi kimi işlənməsini təmin edir. Digər tərəfdən isə onu da diqqətdən qaçırmaq olmaz ki, qiymətvermə mənası bu kateqoriyanın məzmununu təşkil edir, bu da qiymət verən subyekt olmadan həyata keçə bilməz. Deməli, hər iki aspekt - sosial və fərdi bu kateqoriya üçün eyni dərəcədə vacibdir.

Anahtar Kelimeler: modallıq, Azərbaycan dili, ingilis dili, feil

ABSTRACT

Purpose. The fact that there are many modal verbs in English and few in Azerbaijani does not eliminate the need for comparative study of these languages in the indicated aspect. The purpose of the study is to review specific English modal verbs and to note the possibilities of giving the corresponding modal meanings in Azerbaijani language.

Method. Analysis and comparison methods were used in the research. For this purpose, we will translate the English language materials into Azerbaijani language in different versions and we will also use the original Azerbaijani language materials as appropriate. One of the importance of this work is that the question of modality in Azerbaijani linguistics was studied only on the example of modal words.

Results. We enter such an area of the category of modality that its means of expression in the English and Azerbaijani languages do not correspond to each other from the point of view of the category. These are modal verbs in English and forms of verbs in Azerbaijani that indicate modality (desire, need, important and ability), and some tenses.

In the literature of linguistics, modality is sometimes considered as an evaluative category or a category of social nature, that is, as an element included in the content of the speech, as a means of influencing the listener and creating a certain reaction in him. Modality by its very nature cannot be considered a social or individual category.

Such a view of the category of modality is explained by the fact that in this category there is an evaluative attitude in the formation of the content of the utterance, which ensures its processing as a means of communication. On the other hand, it should not be overlooked that the meaning of evaluation forms the content of this category, which cannot be realized without the evaluation subject. So, both aspects - social and individual are equally important for this category.

Keywords: modality, Azerbaijani language, English language, verb

THE PRACTICES OF MOHAMMAD REZA SHAH: THE INFRASTRUCTURE OF A REVOLUTION

MUHAMMED REZA ŞAH'IN UYGULAMALARI: BİR DEVRİMİN ALT YAPISI

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Bu çalışmada İran Devrimi öncesinde M. Rıza Şah'a ve Pehlevi Rejimine karşı muhalefet fikirlerinin sebepleri incelenecektir.

M. Rıza Şah, ülkesini kalkındırmak için bir plana göre hareket etmiştir. Bu planın olumlu ve olumsuz sonuçları olmuştur. Bu araştırma Şah'ın zamanla muhalefet fikirlerinin artmasına neden olan temel hatalarına odaklanmıştır.

M. Rıza Şah, 1960'lı yıllardan itibaren İran'ın modernizasyon ve kalkınma programlarına hız vermiş ancak bu programın sonuçları İran halkının yönetimden beklentileri ile örtüşmemiştir. Halkın artan huzursuzluğuna rağmen İran'da siyasi katılımın kısıtlanması muhalefet hareketlerinin gizli yollarla devam etmesine neden olmuştur.

M. Rıza Şah, monarşinin korunması için sıkı bir denetim sisteminin gerekli olduğuna inanmış, toplumsal desteğin önemini göz ardı etmiş ve böylece rejime ve yönetime olan güven ve bağlılık zedelenmiştir. M. Rıza Şah'a göre İran'ı modernize edecek ve güçlendirecek yenilikler vatanseverlik duygusunu artıracaktı. Ancak Rıza Şah demokratik beklentileri baskı altında tutarken hükümdarın gücü ve İran milletine bağlılık kavramlarının aynı olmadığını gözden kaçırmış, siyasi kontrolünü giderek artırmış ve kendi otoritesini artırdıkça halkın rejime ve Pehlevi Hanedanı'na sadakatinin azaldığını fark etmemiştir.

Çalışmanın amacı İran halkını M. Rıza Şah ve Pehlevi rejimine karşı birleştiren sebepleri değerlendirmektir. Bu bağlamda sunumda öncelikle M. Rıza Şah'ın siyasi, ekonomik, sosyal ve askeri kararlarının İran vatandaşlarının beklentilerini karşılamayan ve İran Devrimine giden süreci şekillendiren sonuçları üzerinde durulacaktır.

In this present study, the reasons for the opposition ideas against the M. Reza Shah and the Pahlavi Regime before the Iranian Revolution will be examined.

M. Reza Shah acted according to a plan to develop his country. This plan showed positive and negative results; however, this research focused on the principal mistakes of Shah which were caused to increase opposition ideas with time.

M. Reza Shah had accelerated Iran's modernization and development programs since the 1960s; however, the results of this program did not meet the expectations of the Iranian people. Despite that, the restriction of political participation in Iran caused the opposition movements to continue in hidden ways.

M. Reza Shah believed that a strict control system was necessary for the protection of the monarchy, however, he ignored the importance of the people and thus, the trust and loyalty to the regime and the administration was destroyed. According to M. Reza Shah, innovations to modernize and strengthen Iran would have increased the sense of patriotism. But While Reza Shah kept democratic expectations under pressure, had missed that the concept of power of monarch and devotion to Iran's nation was not the same. However, Shah increased political control gradually, and did not realise the decrease of his own authority and public loyalty.

In this context, the presentation will be primarily focus on the results of Shah's political, economic, social and military decisions which do not meet the requirements of the Iranian citizens. As a result, Shah was seen as the source of all problems because he ruled Iran with his own rules. The aim of this study is to evaluate the reasons that unite the Iranian people against the M. Reza Shah Pahlavi Regime.

Key Words: Authoritarianism, Revolution, Iran Revolution, Reza Shah Pahlavi

IMPORTANCE OF LAPAROSCOPIC SURGERY IN PEPTIC ULCER PERFORATIONS

PEPTİK ÜLSER PERFORASYONLARINDA LAPAROSKOPİK CERRAHİNİN ÖNEMİ

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ÖZET

Peptik ülser perforasyonu(PUP) acil olarak cerrahi tedavi edilmesi gereken mortal bir hastalıktır. Tedavide laparoskopik ve açık cerrahiler yapılmaktadır. PUP nedeni ile opere edilen hastalarda laparoskopik ve açık cerrahilerin birbirlerine üstünlüklerini araştıran retrospektif bir çalışma planlandı.

2017-2022 yılları arasında genel cerrahi kliniğinde PUP nedeniyle opere edilen hastaların verilerine hastane sisteminden ulaşıldı. Cerrahi komplikasyonlar Clavien-Dindo Sınıflamasına göre yapıldı. Gruplar arasında ki-kare analizi ve Mann Whitney U analizi yapıldı. $p < 0,05$ istatistiksel olarak anlamlı kabul edildi.

Gruplar arasında hastanede yatış süresi açısından istatistiksel olarak anlamlı farklılık olduğu görülürken(p=0,037), operasyon süresi, mekanik ventilatör ihtiyacı, cerrahi komplikasyonlar ve mortalite arasında istatistiksel olarak anlamlı farklılık olmadığı görüldü (Tablo1). PUP'ta laparoskopik cerrahinin hastanede yatış süreleri açısından açık cerrahiye üstün olduğu gösterilmiştir.

Tablo1.Grupların istatistiksel analiz sonuçları

		Açık Cerrahi			Laparoskopik Cerrahi			
		Median (min-max)	Count	N %	Median (min-max)	Count	N %	p
Yatış Süresi(Gün)		7(0-27)			5(4-8)			**0,037***
Operasyon Süresi(Dakika)		80(40-165)			90(60-150)			0,215*
Mekanik Ventilatör İhtiyacı	Yok		38	71,7%		9	100,0%	0,067
	Var		15	28,3%		0	0,0%	
ClavienDindo Score	1		29	54,7%		9	100,0%	0,354
	2		4	7,5%		0	0,0%	
	3a		3	5,7%		0	0,0%	
	3b		1	1,9%		0	0,0%	
	4a		6	11,3%		0	0,0%	
	5		9	17,0%		0	0,0%	
Mortalite	Yok		44	83,0%		9	100,0%	0,181
	Var		9	17,0%		0	0,0%	

Pearson ki kare testi *Mann Whitney U testi

Anahtar Kelimeler: peptik ülser perforasyonu, laparoskopik cerrahi, morbidite

ABSTRACT

Peptic ulcer perforation(PUP) is a mortal disease that needs urgent surgical treatment. Laparoscopic and open surgeries are performed in the treatment. A retrospective study was planned to investigate the superiority of laparoscopic and open surgeries in patients operated for PUP.

The data of patients who underwent laparoscopic and open surgery for PUP in the general surgery clinic between 2017 and 2022 were obtained from the hospital system. Surgical complication status was performed according to the Clavien-Dindo Classification. Chi-square analysis and Mann Whitney U analysis were performed between groups. $p < 0.05$ was considered statistically significant.

While there was a statistically significant difference between the groups in terms of length of hospital stay(p=0.037), there was no statistically significant difference between operation time, mechanical ventilator requirement, surgical complications and mortality(Table1). Laparoscopic surgery has been shown to be superior to open surgery in terms of length of hospital stay in PUP.

Table1.Statistical analysis results of the groups

		Open surgery			Laparoscopic Surgery			
		Median (min-max)	Count	N %	Median (min-max)	Count	N %	p
Length of hospital stay(day)		7(0-27)			5(4-8)			**0.037***
Operation time(minute)		80(40-165)			90(60-150)			0.215*
Mechanical Ventilator Requirement	Absent		38	71.7%		9	100.0%	0.067
	Present		15	28.3%		0	0.0%	
ClavienDindo Score	1		29	54.7%		9	100.0%	0.354
	2		4	7.5%		0	0.0%	
	3a		3	5.7%		0	0.0%	
	3b		1	1.9%		0	0.0%	
	4a		6	11.3%		0	0.0%	
	5		9	17.0%		0	0.0%	
Mortality	absent		44	83.0%		9	100.0%	0.181
	present		9	17.0%		0	0.0%	

Pearson chi-square test *Mann Whitney U test

Key Words: peptic ulcer perforation, laparoscopic surgery, morbidity

UTILIZATION OF WASTE POWDER IN CEMENTITIOUS SYSTEMS

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ABSTRACT

Sustainability in the construction industry can also be increased thanks to the reduction of energy and environmental problems, which have become critical worldwide, by evaluating construction and industrial wastes and using them in concrete production. Environmental problems are prevented by using these wastes in the production chain instead of being stored in an uncontrolled manner. In this respect, with the use of waste materials in cementitious systems, cement consumption, which consumes a high amount of energy in its production and produces CO_2 gas, will be reduced. Compared to industrial wastes such as fly ash, silica fume and blast furnace slag, the use of waste materials from construction and demolition debris such as brick, marble, glass, and concrete dust is not common in concrete mixtures. However, there are experimental studies in the literature on the use of construction wastes in concrete mixtures instead of aggregates and binders. According to literature review, it was determined that the performance of cementitious systems is affected by the fineness, chemical composition and pozzolanic activity of the waste powder replaced. It was understood that the effect of the utilization of construction and demolition waste on the properties of cementitious systems will be revealed more clearly and its use will become widespread by increasing and comparatively examining the studies in question. This paper analyzes studies investigating powdered construction wastes effects on fresh and hardened properties, durability performance and rheological behavior of cementitious systems.

Keywords: cementitious system, sustainability, construction demolition waste, glass powder

A SOCIOLOGICAL ASSESSMENT ON THE CONCEPTIONS OF VIOLENCE, WAR AND TERROR

ŞİDDET, SAVAŞ VE TERÖR KAVRAMLARINA İLİŞKİN SOSYOLOJİK BİR DEĞERLENDİRME

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ÖZET

Şiddet olayları, birey veya grup tarafından doğrudan veya dolaylı olarak başkalarının can ve mallarına, aynı zamanda inanclarına, maddi, manevi değerlerine zarar verecek şekilde uygulanan eylemdir. Bununla birlikte yaşama hakkı her bireyin en temel, birincil hakkıdır. Hem fiziksel hem de psikolojik şiddeti içerisinde barındıran savaş ve terör eylemleri ise insan yaşamını sonlandırmaya yönelik en büyük riski oluşturmaktadır. Bunun yanı sıra toplumsal dayanışma ve barışa yönelik de tehdit oluşturmaktadır. Terör sebebi ile hayatını kaybedenlerin sayısı, 2010 yılı itibariyle 8.000 kişi olarak kaydedilmiştir. Bu sayının sadece 4 yıl sonra 2014 yılında 44.000'e ulaşmış olduğunu görmekteyiz. Savaşlar tarihin her dönemi için kanlı sonuçlara yol açmakla birlikte, günümüzde sivil insanları daha çok etkilemekte ve daha geniş bir kitleye yayılmaktadır. Başka bir ifadeyle çağdaş dönemde ülkeler arasındaki savaşların sonuçları sadece kendileri ile sınırlı olmadığı için özellikle komşu ülkeleri, aynı zamanda dünyayı da etkisi altına almaktadır. Bu etkinin güncel bir örneğini küresel ekonomi temelinde Rusya-Ukrayna savaşında görmekteyiz. Fosil yakıt üretimi ve ihracatı alanında dünyada önemli bir yeri olan Rusya, bu savaş nedeniyle doğalgaz ve petrol fiyatları ile ilgili sorunlar yaşamaktadır. Ayrıca savaşan iki ülke dünya devletlerinin buğdaya yönelik talebinin yüzde otuzunu, mısıra yönelik talebinin ise yüzde seksenini karşılamaktadır. Bu nedenle, özellikle gıda ve enerji alanında dünya ciddi bir buhranla karşı karşıya kalma riski ile karşılaşmaktadır. Bu çalışmada şiddet, savaş ve terör kavramlarının tanımları çerçevesinde, sosyolojik bir olgu olarak değerlendirilen şiddetin boyutları, topluma etkileri, savaşın ortaya çıkardığı yıkıcı sonuclar, terörün çeşitleri ve nedenleri, terörle mücadelede uluslararası işbirliğinin önemi konularına değinilmektedir. Araştırma kapsamında, nitel veri analizine dayalı döküman taraması ile kaynaklar incelenmekte ve elde edilen veriler sosyolojik bir çözümlemeye tabi tutlarak aktarılmaktadır.

Anahtar Kelimeler: Şiddet, savaş, terör, şiddet olayları, toplum.

ABSTRACT

Violence is an act that is directly or indirectly applied by an individual or group in a way that harms the lives and property of others, as well as their beliefs, material, and moral values. At the same time, the right to live is the most basic right of every individual. The acts of war and terrorism, which include both physical and psychological violence, constitute the greatest risk to end human life. In addition, it poses a threat to social solidarity and peace. The number of people who lost their lives due to terrorism was recorded as 8,000 as of 2010. We see that this number reached 44,000 in 2014, just 4 years later. Although wars have led to bloody consequences for every period of history, today they affect civilians more and spread to a wider audience. In other words, since the results of wars between countries in the contemporary period are not limited to themselves, they affect especially neighboring countries and also the world. We see a current example of this effect in the Russia-Ukraine war on the basis of the global economy. Russia, which has an important place in the world in the field of fossil fuel production and export, has problems with natural gas and oil prices due to this war. In addition, the two warring countries meet thirty percent of the world's demand for wheat and eighty percent of the demand for corn. For this reason, the world is faced with the risk of facing a serious crisis, especially in the field of food and energy. In this study, within the framework of the definitions of violence, war and terrorism, the dimensions of violence, which is considered as a sociological phenomenon, its effects on society, the devastating consequences of war, the types and causes of terrorism, the importance of international cooperation in the fight against terrorism are discussed. Within the scope of the research, sources are examined by document scanning based on qualitative data analysis and the obtained data is transferred by subjecting it to a sociological analysis.

Keywords: Violence, war, terrorism, violent incidents, society.

RAMAN CHARACTERISTICS OF MINERALS IN METAMORPHISM PROCESSES: FILLOSILICATE MINERALS

METAMORFİZMA SÜREÇLERİNDE MİNERALLERİN RAMAN KARAKTERİSTİKLERİ: FİLLOSİLİKAT MİNERALLERİ

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ÖZET

Konfokal Raman Spektrometresi (CRS) yöntemi minerallerin elementel bağ titreşimlerinden yararlanarak mineral türü, deformasyon etkisi, bozunma ve çözünme özelliği hakkında analitik ve görsel veriler sunarak jeolojik problemlerin çözümüne katkı sunmaktadır. Fillosilikat mineralleri diğer silikat minerallerine kıyasla daha kompleks bir yapıya sahiptir, değişen basınç ve sıcaklık altında yapısına farklı elementler geçebilmektedir. Fillosilikat gibi karmaşık yapıya sahip minerallerin farklı ortam koşullarında gösterdikleri değişimleri inceleyebilmek amacıyla, farklı basınç ve sıcaklık altında oluşan örnekler seçilerek CRS analizleri yapılmıştır. Bu çalışmanın amacı potasyum-alüminyum fillosilikat minerallerinde düşük şiddetli metamorfizma koşullarından itibaren, metamorfizma şiddetinin artmasıyla birlikte gerçekleşen değişimlerin CRS yöntemi ile incelenmesi sayesinde, metamorfizma koşullarının belirlenmesine yönelik yaklaşımlarda bulunmaktır.

Farklı metamorfizma koşullarını temsil eden minerallerin davranışlarını belirleyebilmek amacıyla, farklı litolojilerden illit, serisit, fengit ve muskovit içerikli muskovit şist ve fengit şist kayalarından örnekler alınarak CRS ve Elektron Probe Mikro Analiz (EPMA) yöntemleri ile analizler yapılmıştır. CRS ile ince kesitlerde Raman kaymaları incelenmiş ve EPMA ile mineral kimyası çalışmaları gerçekleştirilmiştir. Elde edilen sonuçlar birbirleriyle, literatürle ve metamorfizmaya uğramamış mineral örnekleriyle karşılaştırılmıştır. Derinlikle birlikte sıcaklık ve basınç artışıyla Raman kayma piklerinde gerçekleşen değişimler yorumlanmaya çalışılmıştır. Raman kayma spektrumlarında metamorfizma derecesi arttıkça pik simetrisi, değer ve genişliklerinde belirgin değişimler gerçekleştiği belirlenmiştir.

Metamorfizma derecesi arttıkça 1.spektral bölgedeki Al-OH titreşimlerinden kaynaklı 195cm^{-1} ve 215cm^{-1}'teki pikin şiddetinde bir artış gözlenmiştir. 263cm^{-1} pikinin bu bölgedeki piklere benzer şekilde şiddetinin arttığı gözlemlenmiştir. 701cm^{-1} kaymalarındaki piklerin şiddeti artmış, 912cm^{-1} pikinin şiddeti azalmıştır. 1111cm^{-1} pikinin şiddetinde bir artışla birlikte, fengit şist örneğinde bu bölgede beklenmeyen şiddette ve genişlikte pik görülmüştür. Kimyasal analiz sonuçlarına göre metamorfizma şiddetinin artışına bağlı olarak LOI değerlerinin azaldığı ve diğer elementlerin oranlarında bir artış gözlenmiştir. Metamorfizma derecesinin artmasına bağlı olarak elementlerin bağlarındaki değişimlerin incelenmesi sayesinde, CRS tekniğinin kayaların maruz kaldıkları farklı ortam koşullarının yorumlanmasına yardımcı olabileceği ortaya konmuştur.

Anahtar Kelimeler: Fillosilikat, Metamorfizma, Raman spektroskopisi, EPMA

ABSTRACT

Confocal Raman Spectrometer (CRS) method contributes to the solution of geological problems by providing analytical-visual data about mineral type, deformation, alteration and dissolution properties by using the elemental bond vibrations of minerals. Phyllosilicates have more complex structure compared to other silicate minerals, different elements can pass into their structure under varying pressure(P)-temperature(T). In order to examine the changes of minerals with complex structure under different environment conditions, CRS analyzes were performed by selecting samples formed under different T-P. The aim of this study is to approach the determination of metamorphism conditions by examining the changes in potassium-aluminum phyllosilicate minerals with the increase of metamorphism from low-degree metamorphism conditions by using CRS.

In order to determine the behavior of minerals representing different metamorphic conditions, samples were taken from muscovite and phengite schist containing illite, sericite, phengite and muscovite from different lithologies; analyzed by CRS and Electron Probe Micro Analysis (EPMA) methods. The obtained results were compared with each other, the literature and the mineral samples that did not undergo metamorphism. The changes in the Raman peaks with the increase in T-P with depth were tried to be interpreted. It was determined that as the degree of metamorphism increased in the Raman shift spectra, significant changes occurred in peak symmetry, value and width.

As the degree of metamorphism increased, an increase was observed in the intensity of the peak at 195cm^{-1},215cm^{-1} (due to Al-OH vibrations), 263cm^{-1}, 701cm^{-1}. The intensity of the 912cm^{-1} decreased. With an increase in the intensity of the 1111cm^{-1}, unexpected intensity and width peaks were observed in this region in the phengite schist sample. According to results of chemical analysis, it was observed that the LOI values decreased due to the increase in the degree of metamorphism. By examining the changes in the bonds of elements as the degree of metamorphism changes, it has been demonstrated that the CRS technique can help interpret the different environmental conditions to which rocks are exposed.

Keywords: Phyllosilicate, Metamorphism, Raman spectroscopy, EPMA

INTERPRETATION OF CLAY, GRAIN SIZE, PETROPHYSICAL PARAMETERS, AND ATR-FTIR SPECTRA IN SANDSTONE RESERVOIR, NORTHWEST OF THRACE BASIN, TURKEY

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ABSTRACT

The Thrace Basin is the most important natural gas-producing area in Turkey. In this study, samples taken from wells opened in the Northwest of the Thrace Basin were studied. The objectives of this research are to reveal the presence of organic matter, analyse the petrophysical parameters (porosity, permeability), detecting clay minerals and their effects on the reservoir, determine the reservoir quality of the sandstones of the Thrace Basin. The Hamitabat Formation sandstones were divided into three groups based on their grain size using petrographic analyses. Group 1 is composed of 0.5-1 mm grains, group 2 contains 0.25-0.5 mm grains and group 3 consists of very fine grains (<0.12 mm). Group 1 sandstones have high clay content, low permeability (0.1-10 mD), low porosity (6-12%) values. Group 2 sandstones have low clay content, high permeability (16-104 mD), high porosity (15-24%), wide pore throat diameters. Group 2 offer a better reservoir rock property with respect to Group 1 according to permeability and porosity values. Group 3 sandstones do not offer reservoir character. Samples with greater permeability displayed lower hydrocarbon peaks than those with less permeability in the Fourier-transform infrared spectra. Aromatic C-H peaks indicate the presence of unsaturated hydrocarbons. It has been determined that the Hamitabat Formation sandstones of the Thrace Basin are a medium-good quality reservoir rock.

Key Words: Hydrocarbon; FTIR; Reservoir

MODELING AND FORECASTING THE TOP 5 CRYPTOCURRENCIES' RETURN

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ABSTRACT

An efficiency improvement in the financial system and markets can lead to the prosperity of trade and investment. Currently, a new type of currency, namely cryptocurrency, is being developed. This currency captures investors' attention because it challenges them with a volatile return and possibly an abnormal profit. However, to gain such a return, investors need to learn the characteristics of them. The model that is accepted to explain the volatility of cryptocurrency return is the ARCH family model, which allows the analysts to explain the return dynamics of particular cryptocurrency. For this reason, this work is designed to identify the models within the ARCH family that are suitable to explain the vitality of the top five cryptocurrencies within a short period of time. The results show that identifying the ARCH effect for Bitcoin, Ethereum, and Binance Coin with only 90 periods of time series data is impossible. However, the two stable coins' volatility can be explained by GARCH (1,1) and EGARCH (1,1) within this period. However, these models can only forecast one period ahead. Hence, investors who interest in investing in cryptocurrencies need to spend time watching the movement of these currencies to reduce risk and earn the highest return.

Keywords: ARCH, Return Volatility, Cryptocurrency

THAILAND'S EFFICIENCY AND PRODUCTIVITY IN DRIVING GDP

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ABSTRACT

Although business efficiency and productivity are important issues for private agents because they affect cost, revenue, and profit, they are also important to public agents. In the public sphere, the major concern is the efficiency and productivity in utilizing national resources for producing the target outputs. Thus, searching for ways to succeed at the highest level of efficiency and productivity becomes an important agenda. To provide an idea for public agents about their level of efficiency and productivity at the macro level, this work applies the Data Envelopment Analysis and Malmquist Productivity Index techniques to measure those levels. The index that is assigned as the output is gross domestic product, and the indexes that are assigned as the resources include domestic credit provision, the number of workforce, gross capital formation, the number of population, commercial bank branches, foreign direct investment, government consumption expenditure, and patent applications of residents. The data used in this study is from Thailand and was obtained for the World Bank database in the period of 2007 to 2019. The analysis results reveal that under the constant returns to scale assumption, Thailand has seven years of performing at full efficiency in generating GDP. However, under the variable returns to scale assumption, only year 2015 generates GDP inefficiently. In the cast of productivity, it was found that productivity in Thailand oscillated in a decreasing manner. Thus, the recommendations are to design policies that improve knowledge, management approaches, techniques, and technologies that improve the utilization levels of the assigned resources.

Keywords: Data Envelopment Analysis, Malmquist Productivity Index, Thailand

THE INTERCONNECTION OF INTERNAL MOTIVATION OF STUDENTS AND THE PREFERRED TYPES OF THE TASKS IN A DIGITAL ENVIRONMENT OF AN ENGLISH CLASS

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Abstract

The article presents the analysis of the study results aimed at studying a certain type of motivation for learning a foreign language by students of the non-language faculty on the basis of the Skyeng training platform, and also examines the relationship between the internal motivation of educational activities and activities in learning a foreign language in the new digital reality. Special attention was paid to establishing the connection between the internal motivation of learning activities in the process of mastering a foreign language and the student's preferred types of learning exercises. The digitalization of modern society has made certain changes in the education system as a whole; in our work we have considered individual changes in the motivational component. It was noted that such changes in internal and external motivation lead to the appearance of new traits in the student, who has a tendency to more pronounced independent activity, the possibility of switching from collective forms of learning to individual ones, which leads to a preference for students not only to choose their own forms of learning activities, but also stimulates a more pronounced desire for independent search for information and as an end in itself, to conscious self-education and self-learning.

Key words: inner incentives, motivation, self-education, foreign language learning.

PLASTIC INGESTION BY MULLUS BARBATUS FROM THE BLACK SEA

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Abstract

The present study aims to analyse the qualitative and quantitative composition of micro and mesoplastic ingestion by Mullus barbatus Linnaeus, 1758 inhabiting the Bulgarian Black Sea waters. Gastrointestinal tract (GIT) contents of 79 red mullets from the family Mullidae, collected from two trawls in the northern and central part of the Bulgarian Black Sea coast during June 2020 were inspected for the presence of plastic particles. Organic matter was removed with filtered 10% potassium hydroxide (KOH) at 40°C following all biota sample processing standards for microplastics. A total of 74 microplastic fibers and fragments (<5 mm) and mesoplastic fibers and one fragment (5-25 mm) were found in 26 M. barbatus (33% of all individuals examined). 61% of all plastics were recorded in 16 of 44 females and 39% of all plastics were recorded in 10 of 35 male red mullets. The average number of plastic particles per fish was 0.94±1.81 par.ind., range 0 to 10 per individual. The most common type of plastic identified were fibres (76%) and fragments (24%). The most frequent plastic colour recognized was grey and blue for fibers and green for fragments. The study presents the first results on meso- and microplastic marine litter ingested by red mullet in the Bulgarian coastal waters ecosystem. Further studies are needed in order to understand the real scale of the problem.

Keywords: Demersal zone, GIT, marine litter, microplastics, red mullet

MATHEMATICS AND EMOTIONS: MATHEMATICS ANXIETY AND AN EXPLORATION OF INTERVENTION STRATEGIES

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ABSTRACT

Mathematics is often considered the most strenuous subject in the curriculum that can cause intense emotions. Intellectual capacity is not always a predictor of academic achievement; for instance, emotions can also play an important role in the learning process. Therefore, experiencing strong, upsetting feelings might lead to learning impairment. The phenomenon of mathematics anxiety (MA) has attracted increasing attention in recent years. The particular interest in MA research is certainly related to the fact that such a negative reaction to interaction with mathematics can have consequences for mathematical performance. However, whether MA is a precursor or a result of mathematical performance deficit is difficult to answer. According to research, worrying when performing mathematical activities uses up the brain's energy for processing negative emotions, loading up working memory, and leaving little capacity for processing tasks regardless of an individual's mathematical abilities. Other studies suggest that inherently weak mathematical abilities may be the root cause of MA development. A clear knowledge of how to regulate high levels of MA, mitigate its negative impact on mathematics achievement and support students' mathematical development is of particular importance. Considering MA as both the cause and the result of a performance deficit, current research focuses on either reducing anxiety reactions or enhancing mathematical skills. This paper aims to give an overview of the current intervention studies that examined the effects of various strategies for reducing MA in students. The findings give qualitative insights that might help to comprehend potential strategies for MA regulation.

Keywords: mathematics anxiety, mathematical performance, intervention strategies.

A GEAR FAULT DIAGNOSIS USING A COMPARISON OF EMPIRICAL SIGNAL TECHNIQUES WITH ANFIS

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ABSTRACT

Gear faults represent a significant share of mechanical transmission failures that are a major problem for most industries. These faults reduce the efficiency and productivity of the machines, so health monitoring and fault detection of these components are very important to avoid catastrophic failures and enable improvement in economical aspects. This work presents a method for gear fault diagnosis based on empirical signal processing and an Adaptive Neural Fuzzy Inference System (ANFIS). The concept of this work consists of the use of different empirical signal processing methods such as Empirical Mode Decomposition (EMD) and its derivatives, Ensemble Empirical Mode Decomposition (EEMD), Complete Ensemble Empirical Mode Decomposition (CEEMD), and Complete Ensemble Empirical Mode Decomposition with Adaptive Noise (CEEMDAN), These methods are used to decompose the signal into different intrinsic mode functions (IMFs) that each contains information and features of the original signal and are then used as inputs for the ANFIS, the results are compared with the use of each empirical with ANFIS. The three defects that were studied in our case are Chipped, Eccentric, and Mixed defects. The method used gave good results with CEEMDAN+ANFIS showing the best accuracy at 80% but taking the longest computation time and EMD+ANFIS being the fastest but with an accuracy of only 76%. To conclude, this proves that the use of empirical signal processing is well used for this type of problem and also that more advanced methods lead to better results but with an additional constraint on computational power.

Keywords: Gear; fault detection; empirical signal processing; ANFIS.

PALYNOMORPHOLOGICAL CHARACTERIZATION OF THE KAZDAĞI RARE ENDEMIC ARMERIA TROJANA BOKHARI & QUÉZEL

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ABSTRACT

Armeria Willd. genus is represented by four taxa (Armeria cariensis var. cariensis, A. cariensis var. rumelica, A. maritima and A. trojana), one of which is rare endemic, naturally distributed in the Flora of Turkey. Among them, A. trojana spreads from 1500 m to Kazdağı summit, especially in open areas where siliceous bedrocks are dense. Although some morpho-anatomical studies of Armeria taxa in our country have been carried out, there are no palynomorphological studies on the rare endemic A. trojana, which is unique to Kazdag. In our study, pollens of A. trojana were examined under the light microscope with preparations prepared according to the Wodehouse (W) and Erdtman (E) methods. In addition, SEM microphotographs of the pollen were taken by coating with gold-palladium. Pollens are tricolpate, prolate-sphaeroidal shaped and show an exine reticulate-microechinate ornamentation. The fact that this genus is the only endemic taxon in our country creates a deficiency in the light of palynomorphological data, especially in terms of taxonomic studies related to the genus Armeria. Within the scope of this study, the palynomorphological data of A. trojana was revealed for the first time.

Keywords: Armeria, pollen morphology, Kazdag, Turkey

COMPARATIVE POLEN MORPHOLOGY OF SOME JASMINUM L. (OLEACEAE) TAXA GROWING IN ESKİŞEHİR

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ABSTRACT

Pollen morphology of Jasminum fruticans L., J. officinale L. and J. sambac (L.) Aiton taxa, which are used for landscaping in Eskişehir province, were investigated by means of light and scanning electron microscopy microphotographs. The investigated Jasminum pollen grains are tricolpatae type and prolate shaped. Exine was seen to be tectatae-reticulatae ornamentation. As a result of microscopic examinations, the distinctions between taxa were revealed statistically. Comparisons were performed between studied taxa will make contribution to taxonomy for classification of Jasminum taxa.

Keywords: Jasminum, pollen morphology, Eskişehir, Turkey

OFDM VE NOMA SİSTEMLERİ İÇİN DL PERFORMANSININ İNCELENMESİ
INVESTIGATION OF DL PERFORMANCE FOR OFDM AND NOMA SYSTEMS

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ABSTRACT
The rapid increase in the interest in communication technologies in recent years has led researchers to find more effective solutions in this regard. Especially in wireless communication systems, new and more effective applications are emerging at the point of transmission of information and its recovery at the receiver. In particular, modulation techniques have been developed for the 5G technology, which is known as the technology of the future and whose prototypes have begun to be tested. Research on deep learning (DL) to detect Non Orthogonal Multiple Access (NOMA) and Orthogonal Frequency Division Multiplexing (OFDM) wireless communication systems, which are among these modulation techniques, is the subject of this study. In NOMA systems, sequential interference cancellation (SIC) is usually performed at the receiver side to decrypt multiple users sequentially. The accuracy of the detection by decryption mostly depends on the accurate detection of the former users due to the effects of error propagation. In this study, the performance of ML, MMSE, and LS techniques, as well as the DL technique, were examined for prediction. In the case of multiple users, DL-based NOMA receivers decode the symbols in a one-time operation, without explicit channel estimation. The NOMA receiver using the DL method includes a deep neural network (DNN) application that implements both estimations of channel and detection of signal together. First, the DNN is trained offline with the simulation data referencing the statistics of the channel, and then the DNN is utilized to retrieve the transmitted data straight on the online transmission phase. The deep neural network (DNN), which consists of the DNN layer and soft decision makers used for the designed receiver, aims to solve the limitations of traditional sensor techniques accepted by users, such as channel estimation error, time delay, and decoding limitation. The results of the simulation demonstrate that the DL method outperforms traditional pilot symbol-based channel prediction techniques and is more strong to symbol counts. Again, from the simulation results, it is seen that the receiver has robust features in terms of power-sharing of the user. DNN offers optimal solutions in linear channels as well as non-linear channels, and as the number of users increases, the success of detection at the receiver also increases. Additionally, DNN can reduce the potential effects on error spread that may consist of the detector of SIC. Moreover, the DL approach performs better than ML detection, which can ignore the interference effects in the case of heavy inter-symbol interference. The success of the LS and MMSE channel estimators is subject to the pilot symbols that are acknowledged to the receiver and utilized recovering the response of channel. However, the DL receiver shows higher performance. As the pilot symbols number drops from 128 to 32, the correctness of the LS and MMSE techniques drops importantly at 36 dB SNR in order to User 2 and User 1. But even in this case the DL receiver performs comparable to the 128 pilot case. DNN has a more robust performance in terms of pilot symbol count and achieve better success together with fewer pilots.

Keywords: Deep Learning, Channel Estimation, OFDM, NOMA

ÖZET

Son yıllarda haberleşme teknolojilerine olan ilginin hızla artması araştırmacıları bu konuda daha etkili çözümler bulmaya yöneltmiştir. Özellikle kablosuz iletişim sistemlerinde bilginin iletimi ve alıcıda tekrar geri elde edilmesi noktasında yeni ve daha efektif uygulamalar ortaya çıkmaktadır. Özellikle geleceğin teknolojisi olarak bilinen ve prototipleri denenmeye başlayan 5G teknolojisi için kullanılan modülasyon teknikleri geliştirilmiştir. Bu modülasyon teknikleri arasında bulunan ortogonal olmayan çoklu erişim (NOMA) ve ortogonal frekans bölmeli çoğullama (OFDM) kablosuz iletişim sistemlerinin tespitini yapmak için derin öğrenme (DL) üzerine araştırmalar bu çalışmanın konusunu oluşturmaktadır. NOMA sistemlerinde genellikle, ardışık girişim iptali (SIC) işlemi, birden fazla kullanıcıya ait şifreyi sırasıyla çözmek üzere alıcı tarafında gerçekleştirilir. Şifre çözme sonucu yapılan tespitin doğruluğu, hata yayılımının etkileri nedeniyle çoğunlukla, önceki kullanıcıların doğru tespitine bağlıdır. Bu çalışmada tahmin için DL tekniğinin yanı sıra ML, MMSE ve LS tekniklerinin de performansı incelenmiştir. Birden fazla kullanıcı durumunda, DL tabanlı NOMA alıcıları, açıkça bir kanal tahmini yapmaksızın, tek seferlik bir işlem yaparak sembollerdeki kodu çözer. DL yöntemini kullanan NOMA alıcısı, hem kanal tahminini hem de sinyal algılamayı birlikte uygulayan bir derin sinir ağı (DNN) uygulamasını içerir. Öncelikle, kanal istatistiklerini referans alan simülasyon verileri ile DNN'yi çevrimdışı olarak eğitme işlemi yapılır ve sonrasında, iletilen verileri doğrudan çevrimiçi iletim aşamasında yeniden elde etmek için DNN kullanılır. Tasarlanan alıcı için kullanılan DNN katmanı ve yumuşak karar alıcılardan oluşan derin sinir ağı (DNN), kullanıcılar tarafından kabul edilen geleneksel algılayıcı teknikleri arasında kanal tahmini hatası, zaman gecikmesi ve kod çözme sınırlaması gibi kısıtlamaları çözmeyi amaçlamaktadır. Simülasyon sonuçları, DL yönteminin geleneksel pilot tabanlı kanal tahmin tekniklerine göre daha iyi performans gösterdiğini ve sembol sayılarına daha fazla sağlam olduğunu göstermektedir. Yine simülasyon sonuçlarından alıcının, kullanıcının güç paylaşımı konusunda sağlam özelliklere sahip olduğu görülmektedir. DNN, lineer kanallarda olduğu kadar lineer olmayan kanallarda da optimal çözümler sunar, ayrıca kullanıcı sayısı arttıkça alıcıdaki algılamanın da başarısında artış olmaktadır. Bunlara ek olarak, DNN, SIC dedektörü üzerinde meydana gelebilecek hata yayılımı üzerindeki olası etkileri azaltabilir. Dahası, DL yaklaşımı, semboller arası girişim etkisinin yoğun olduğu durumda girişim etkilerini ihmal edebilen ML algılamasından daha yüksek başarı sağlamaktadır. LS ve MMSE kanal tahmin edicilerinin performansı, alıcı tarafından bilinen ve kanal yanıtını kurtarmak için kullanılan pilot sembollere bağlıdır. Bununla birlikte, DL alıcısı daha yüksek performans göstermektedir. Pilot sembollerin sayısının 128’den 32'ye düştüğünde, LS ve MMSE yöntemlerinin doğruluğu, hem Kullanıcı 1 hem de Kullanıcı 2 için 36 dB SNR'de önemli ölçüde düşüş gösterir. Ancak DL alıcısı bu durumda bile 128 pilot durumla karşılaştırılabilir bir performans gösterir. DNN pilot sembol sayısı bakımından daha sağlamdır ve daha az sayıda pilotla daha iyi performans elde edebilir.

Anahtar kelimeler: Derin Öğrenme, Kanal Tahmini, OFDM, NOMA

SURPRISING ARCHITECTURAL FEATURES AND VITAL FUNCTIONS OF IMERA MONASTERY AND SIMILAR HISTORICAL REMAINS IN GÜMÜŞHANE HELL CREEK VALLEY CANYON

GÜMÜŞHANE CEHENNEM DERESİ VADİSİ KANYONUNDA BULUNAN İMERA MANASTIRI VE BENZER TARİHİ KALINTILARIN ŞAŞIRTAN MİMARİ ÖZELLİKLERİ VE YAŞAMSAL FONKSİYONLARI

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Doğu Karadeniz'in denize kıyısı bulunmayan, kırsal coğrafyasının en önemli yerleşim bölgelerinden biri olan Gümüşhan ili çok zengin tarihi kalıntıları ve kültürel mirası ile dikkat çekmektedir. Kent merkezinin bulunduğu yerin güneybatısında bulunan Süleymaniye Mahallesi merkezine 4 kilometre mesafede yer alır. Gümüş, altın ve krom madenlerinin zenginliğinden ve tarihi İpek Yolu üzerindeki konumundan dolayı tarih boyunca önemini hiç kaybetmemiştir. Bölgede Asurlular, Urartular, Medler, Pers Krallığı, Mekodonlar, Pontus Krallığı, Roma İmparatorluğu, Selçuklular ve Osmanlı İmparatorluğu hüküm sürmüştür. Bölge Türklerin hâkimiyetine Fatih Sultan Mehmet'in Trabzon-Pontus Rum Devletinin varlığına son verdiği 1461 yılında geçmiştir.

Gümüşhane'yi Trabzon ve Karadeniz'e bağlayan yüksek dağlar silsilesinin başlangıcında yer alan Cehennem Vadisi Kanyonu çok önemli tarihi, harabeler, manastırlar, kiliseler, kemer köprüler, hanlar, kaleler, duvarlar, evler, çeşmeler ve benzer kalıntıları bünyesinde bulundurmaktadır. Bunların en dikkat çekicilerinden biri Olucak Köyü sınırları içerişinde yer alan kuruluşu 670 yıl önceye dayanan, gotik mimarisiyle öne çıkan İmera Manastırı ve köyde bulunan tarihi çeşmeler, ticari binalar, evler ve diğer mimari eserlerdir.

Bu çalışmada İmera Manastırı ve çevresinde bulunan, doğallığını insan eliyle yapılan tahribata rağmen halen inadına sürdüren, bölgenin ve Anadolu'nun zengin kültürel, mimari, yaşamsal mirasına katkılar sağlayan etkenleri, mimari özelliklerini araştırıp, derleyip tespit etmeye çalışacağız.

Anahtar Kelimeler: Gümüşhane, Cehennem Vadisi, Uygarlık, Hristiyanlık, Manastır, gotik

On the coast of the Eastern Black Sea, one of the planning of a livable region can be lived with its very rich history and Gümüşhane. It is located 4 kilometers from the center of Süleymaniye Neighborhood, which is located in the southwest of the city center. It has never lost its importance throughout history due to the wealth of silver, gold and chromium mines and its location on the historical Silk Road. Assyrians, Urartians, Medes, Persian Kingdom, Mecodons, Pontus Kingdom, Roman Empire, Seljuks and Ottoman Empire ruled in the region. The region passed under the domination of the Turks in 1461, when Mehmet the Conqueror put an end to the existence of the Trabzon-Pontus Greek State.

Located at the beginning of the high mountain range connecting Gümüşhane to Trabzon and the Black Sea, the Hell Valley Canyon contains very important historical ruins, monasteries, churches, arch bridges, inns, castles, walls, houses, fountains and similar remains. One of the most striking of these is the Imera Monastery, which stands out with its gothic architecture, which was founded 670 years ago within the borders of Olucak Village, and the historical fountains, commercial buildings, houses and other architectural works in the village.

In this study, we will try to investigate, compile and determine the factors and architectural features of the Imera Monastery and its surroundings, which still stubbornly maintain their naturalness despite the destruction by man, and contribute to the rich cultural, architectural and vital heritage of the region and Anatolia.

Keywords: Gümüşhane, Hell Valley, Civilization, Christianity, Monastery, Gothic

TEMPERATURE-DEPENDENT ANALYSIS OF THE IDEALITY FACTOR AND BARRIER HEIGHTS OF AL/GO/p-TYPE SI METAL SEMICONDUCTOR STRUCTURES

AL/GO/p-TYPE Si METAL YARI İLETKEN YAPILARIN İDEALİTE FAKTÖRÜ VE BARİYER YÜKSEKLİKLERİN SICAKLIKLİĞA BAĞLI ANALİZİ

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ÖZET

Bu çalışmada, 80–300 K sıcaklık aralığında akım gerilim (I-V) ölçümleri kullanarak Al/GO/p tipi Si metal yarıiletken Schottky yapılarının idealite faktörleri ve bariyer yüksekliklerinin sıcaklığa bağlı olarak araştırdık. Döndürerek kaplama işlemi, spin coating, kullanılarak p-tipi silikon üzerinde grafen oksit ince filmler oluşturuldu. Bu işlemden sonra % 99,999 saflıkta alüminyum (Al) doğrultucu (doğrultucu kontak alanı=7.85×10^{-3} cm^2) kontaklar GO arayüz katmanı üzerine termal buharlaştırma (=10^{-6} Torr) yöntemi kullanılarak buharlaştırıldı. Deneysel sonuçlar gösterdi ki, artan sıcaklıkla idealite faktörlerinin azaldığını ve bariyer yüksekliğinin ise arttığını gözlemlendi. Bu çalışmada, akım-voltaj özellikleri, termiyonik emisyon (TE) teorisi kullanılarak analiz edildi. Ayrıca, Al/GO/p tipi Si yarıiletken yapısının doğrultma özelliğine sahip olduğu görülmüştür. Sonuç olarak; idealite faktörleri ve bariyer yüksekliklerinin değerleri, Al/GO/p-tipi Si metal yarı iletken Schottky yapıları için temel elektriksel özelliklerini belirlemek için önemli parametrelerdir.

Anahtar Kelimeler: Bariyer yükseklikleri, İdealite faktörü, p-tipi Si yarıiletken

ABSTRACT

In our study, we investigated temperature-dependent of ideality factors and barrier heights of the Al/GO/p-type Si metal semiconductor Schottky structures using current voltage (I-V) measurements in the temperature range of 80–300 K. The spin coating process was used to generate graphene oxide thin films on p-type silicon. After this process, to make rectifier with Al (99.999%) metal contacts with diameter of 1 mm (rectifier contact area=7.85×10^{-3} cm^2) were thermally evaporated (=10^{-6} Torr) on the GO interface layer. The experimental shows that the ideality factors decreased and the barrier height increased with increasing temperature. The current-voltage characteristics were analyzed on the basis of the thermionic emission (TE) theory. Also, it was seen that the Al/GO/p-type Si semiconductor structure has the rectification feature. As conclusion; the values of ideality factors and barrier heights are important parameters to determine the main electrical properties of Al/GO/p-type Si metal semiconductor Schottky structures.

Keywords: Barrier heights, Idealite factor, p-type Si semiconductor

TEMPERATURE-DEPENDENT ANALYSIS OF THE IDEALITY FACTOR AND BARRIER HEIGHTS OF AL/(GO:PTCDA)/p-TYPE SI METAL SEMICONDUCTOR STRUCTURES

AL/(GO:PTCDA)/p-TYPE Si METAL YARI İLETKEN YAPILARIN İDEALİTE FAKTÖRÜ VE BARİYER YÜKSEKLİKLERİN SICAKLIKLİĞA BAĞLI ANALİZİ

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ÖZET

Bu çalışmada, grafen oksit (GO) Perylenetetracarboxylic dianhydride (PTCDA) ara yüzeyli Al/p- tipi Si metal yarıiletken yapıların idealite faktörleri ve bariyer yükseklikleri akım-voltaj (I-V) ölçümleri kullanarak 80–300 K sıcaklık aralığında incelendi. Al/(GO:PTCDA)/p tipi Si yarıiletken yapısının doğrultma özelliğine sahip olduğu görülmüştür. PTCDA ve GO organik yarı iletken toz yapılarının morfolojisi taramalı elektron mikroskobu (SEM) ile incelendi. İlk önce Al metal Si kristalin arka yüzeyine yanı parlak olmayan tarafına buharlaştırıldı. Daha sonra döndürerek kaplama işlemi kullanılarak p-tipi Si wafer üzerine, yani parlak tarafına, aynı oranlarda GO ve PTCDA tozları karıştırılarak spin coating yöntemi ile ince filmler oluşturuldu. Bu işlemden sonra % 99,999 saflıkta alüminyum (Al) doğrultucu (doğrultucu kontak alanı=$7.85x10^{-3}$ cm^2) kontaklar GO ve PTCDA arayüzey katmanı üzerine termal buharlaştırma (=10^{-6} Torr) yöntemi kullanılarak buharlaştırıldı. Yapılan deneysel ölçümler sonucunda sıcaklığın artmasına bağlı olarak idealite faktörlerinin değerlerinde azalma görünürken engel yüksekliklerinden ise artış olduğu gözlemlendi. Sonuç olarak görüldü ki yarıiletken teknolojisi için idealite faktörleri ve engel yüksekliklerinin sıcaklığa bağlı değişimleri önemli temel parametrelerdir.

Anahtar Kelimeler: GO, PTCDA, Bariyer ve idealite değerleri

ABSTRACT

In study, we investigated ideality factors and barrier heights of the Al/p-Si metal semiconductor (MS) structure with perylenetetra carboxylic dianhydride (PTCDA) and graphene oxide (GO) interface in the temperature range of 80–300 K. The morphology of the PTCDA and GO organic semiconductor powder structures were examined by scanning electron microscopy (SEM). Firstly, the Al metal was evaporated to the back surface of the Si crystal. After, thin films were formed by spin coating method by mixing GO and PTCDA powders in the same proportions on the p-type Si wafer. After this process, to make rectifier with Al (99.999%) metal contacts with diameter of 1 mm (rectifier contact area=$7.85x10^{-3}$ cm^2) were thermally evaporated (=10^{-6} Torr) on the GO:PTCDA interface layer. The experimental shows that the ideality factors decreased and the barrier height increased with increasing temperature. As a conclusion; the values of ideality factors and barrier heights are important parameters to determine the main electrical properties of Al/(GO:PTCDA)/p-type Si metal semiconductor structures.

Keywords: GO, PTCDA, Barrier and Idealite values.

STRUVITE FROM WASTE. TECHNOLOGY AND PRODUCT IMPROVEMENT

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Due to the limited deposits of phosphate rock resources, wastewater and sludge with high phosphorus and nitrogen content are becoming a valuable source of nutrients for plants fertilization. Municipal wastewater, excess sludge and manures can be applied as sources of phosphorus and nitrogen for production of magnesium ammonium phosphate hexahydrate (struvite). Struvite, MgNH4PO4.6H2O, is a crystal substance containing magnesium, ammonium, and a phosphate ion in equal molar ratio. Crystals are formed in alkaline environment, under the following reaction

$$Mg2+ + NH4+ + H2PO4- + 6H2O = MgNH4PO4 + 6H2O + 2H^{+}$$

The obtained product can be applied in agriculture as a bio slow-releasing fertilizer releasing nutrients (nitrogen, phosphorus, magnesium) or it can be used in specific industries.

The study aims to optimize the basic conditions for struvite precipitation (Mg/PO4 ratio, choice of alkalization mode and choice of precipitation/coagulation agent). Magnesium chloride and marine concentrate (sea water bittern) were used as sources of Mg^{2+} through the struvite precipitation process carried at different pH and Mg/PO4 molar ratio. The advantages of pH elevation by CO2 stripping instead of chemical alkalization by using NaOH are proved. The results obtained show that the bittern performs better than magnesium chloride regarding the phosphate removal level. It also results to the precipitate physical structure. SEM views show larger crystals of struvite in case of using bittern as an Mg source, Fig.1.

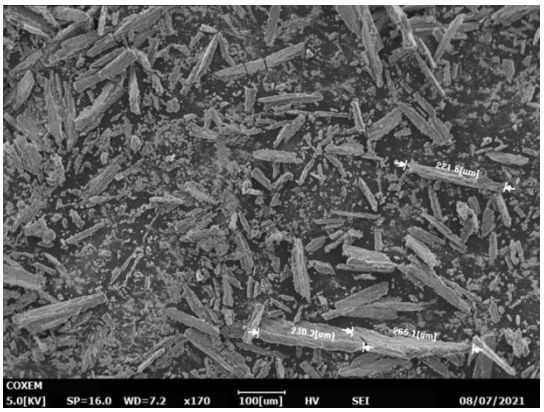

Fig.1. SEM photo of struvite obtained at pH = 9.5 and molar ratio of Mg/PO4 =2: 1 in using sea bittern as a source of Mg.

The agro technical effects of struvite in comparison with the widely used fertilizing products (ammonium nitrate, carbamate) are in focus as well. The results from the conducted fertilizer experiment regarding productivity show that the effectiveness of Struvite implementation as a fertilizer are close to the results achieved with the application of carbamate plus ammonium nitrate or ammonium nitrate.

Keywords: phosphate resources, waste, municipal sludge, struvite

DETERMINATIN OF GRAPHITE MINERAL PROPERTIES BY RAMAN SPECTROSCOPY: KIRKLARELİ DEMİRKÖY, TURKİYE

GRAFİT MİNERAL ÖZELLİKLERİNİN RAMAN SPEKTROSKOPİSİ İLE BELİRLENMESİ: KIRKLARELİ DEMİRKÖY, TÜRKİYE

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ÖZET

Grafit; yoğun karbon bileşimli sedimanların hidrotermal çözeltiler veya magmatik sıvılarla reaksiyona girerek hexzagonal sistemde kristalleşebilen bir metamorfik mineraldir. Grafit mineralleri günümüzde pil, döküm, yağlama, döküm ve çelik imalatı gibi pek çok önemli sanayii alanında kullanılmasından oldukça dikkat çekici ve aranan mineral haline gelmiştir. Ancak grafitler diğer mineraller de olduğu gibi oluştuğu ortam ve içermiş olduğu karbon oranına bağlı olarak farklı özellik ve davranış sergilemektedir. Bu çalışmada Kırklareli Demirköy grafit şist ve grafit fillit kayalarından örnekler alınarak içermiş olduğu grafitin mineralojik, kimyasal ve oluşturdukları Raman spektrum karakteristikleri incelenmiştir.
Kırklareli-Demirköy grafit örneği üzerinde yapılan Raman spektrası analizinde tespit edilen Raman pikleri ve Raman kaymaları ile örnek içerisindeki kirlilik bantları ve grafit bantları ortaya konulmuştur. Raman spektrumları ve ölçülen pik değerleri Spectral ID Programı kütüphanesindeki referans pik değerleri ile karşılaştırılarak mineralin karakteristik özelliklerinin belirlenmeye çalışılmıştır. Grafit örneğinde yapılan Raman spektrası analizinde tespit edilen en belirgin ve şiddetli Raman kayması 1571,36 cm^{-1} olarak ölçülmüştür. Ayrıca 2663,87 cm^{-1} ve 1328,36 cm^{-1} değerlerinde de daha az belirgin Raman pikleri gözlenmiştir. Söz konusu grafit örneğinin Raman spektrasında küçük ölçekte birçok Raman pikleri ve kaymalarının bulunması Si, Al ve bazı elementler açısından kirlilik içerdiği belirlenmiştir.
Demirköy örneğinin Raman spektrası grafitin 460-540 ^{0}C sıcaklık aralığında ve yüksek-orta dereceli bir metamorfizma ortamında oluştuğu ortaya konulmuştur.

Anahtar Kelimeler: Raman spektroskopisi, mineroloji, grafit, Demirköy

ABSTRACT

Graphite; is a metamorphic mineral that can crystallize in the hexagonal system by reacting dense carbon-containing sediments with hydrothermal solutions or magmatic fluids. Nowadays, graphite minerals have become a remarkable and sought-after mineral, as they are used in many important industrial areas such as battery, lubrication, casting and steel manufacturing. However, graphite, like other minerals, exhibits different properties and behaviors depending on the environment in which it is formed and the carbon content it contains. In this study, the collected samples from Kırklareli Demirköy graphite schist and graphite phyllite rocks were analysed and mineralogical, chemical and Raman spectrum characteristics of the graphite were evaluated according to their characteristic features.
The Raman peaks and Raman shifts detected in the Raman spectra analysis on the Kırklareli-Demirköy graphite samples revealed disorder bands and graphite bands in the sample. Raman spectra and measured peak intensity were compared with the reference peak intensities in the Spectral ID Program library to determine the characteristic properties of the mineral. The most significant and severe Raman shift detected in the Raman spectra analysis performed on the graphite sample was measured as 1571.36 cm^{-1}. Furthermore; less pronounced Raman peaks were observed at 2663.87 cm^{-1} and 1328.36 cm^{-1} values. It has been determined that the graphite sample in question contains many small scale Raman peaks and shifts in the Raman spectra, and contamination in terms of Si, Al and some other elements.
The Raman spectra of Demirköy sample revealed that graphite was formed in the temperature range of 460-540 ^{0}C and in a high-medium metamorphism environment.

Keywords: Raman spectroscopy, mineralogy, graphite, Demirköy

INVESTİGATION OF KARSTIFICATION AND CAVE FORMATIONS BY RAMAN AND SEM METHODS: TULUMTAŞ CAVE, ANKARA, TURKİYE

KARSTLAŞMA VE MAĞARA OLUŞUMLARININ RAMAN VE SEM YÖNTEMLERİ İLE İNCELENMESİ: TULUMTAŞ MAĞARASI, ANKARA, TÜRKİYE

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ÖZET

Tulumtaş Mağarası, Ankara Gölbaşı İlçesinin Tulumtaş mahallesinde bulunan Ankara grubu içerisinde Jura yaşlı allakton kireçtaşları içerisinde gelişmiştir. Kireçtaşı bloklarının kimyasal çözünmeleri ile karstlaşma sonucu oluşan mağarada boşluklarda damlataş sedimantasyonu meydana gelmiş, kırık ve çatlaklar boyunca sızan sular birçok sarkıt, dikit ve sütun meydana getirmiştir. Tulumtaş Mağarasından elde edilen numuneler üzerinde X-Işını Floresan (XRF), Konfokal Raman Spektroskopisi (CRS), Taramalı Elektron Mikroskobu (SEM), Optik Mikroskop çalışmaları ile ayrıntılı petrografik ve kimyasal incelemeler gerçekleştirilmiştir. Petrografik, CRS ve SEM çalışma sonuçlarına göre Jura yaşlı kireçtaşlarında gelişen kılcal çatlak ve kırıklardan süzülen çözeltiler karbonat minerallerinde kimyasal çözünmelere ve boşlukların gelişmesine neden olduğu belirlenmiştir. Çözünen karbonat mineralleri elementsel olarak çözeltilere katılarak sarkıt ve dikit şeklinde oluşanlar daha yoğun CaCO3 bileşiminden oluştuğu belirlenmiştir. Ana kaya ve Karstlaşma atığı olan topraklardan kimyasal analiz yapılarak karstlaşma etkisi incelenmiştir. Yapılan kimyasal analiz sonuçlarına göre her iki ürünün kimyasal analiz sonuçları bazı elementler açısından belirgin farklılıklar göstermektedir. Karstlaşma atığı olan topraklarda Mg, Fe, Ni, Co, Ga, Cd ve Y elementleri açısından zenginleşme Ca ve Sr içeriği açısından belirgin bir fakirleşme görülmüştür. Fakirleşmeler karbonat kayasının yıkanmasına bağlı ve zenginleşen elementler ise bölgedeki ofiyolitik kayaların içerisinde dolaşan çözeltilerin etkileşemesinden kaynaklanmış olabileceğini göstermektedir.

Anahtar Kelimeler: Tulumtaş, Karstlaşma, Mağara

ABSTRACT

Tulumtaş Cave formed within the Jurassic allactone limestones in the Ankara group located around Tulumtaş neighborhood of Ankara Gölbaşı District. Tulumtaş cave was formed as a result of karstification with the chemical dissolution of the limestone rock units, stalactite sedimentation has occurred in the spaces, and the waters seeping through the micro cracks and fractures causing to form the stalactites, stalagmites and columns in the caves. Detailed petrographic and chemical studies were carried out on the samples obtained from Tulumtaş Cave, using Optical Microscope, X-Ray Fluorescence (XRF), Confocal Raman Spectroscopy (CRS), Scanning Electron Microscope (SEM) methods. The results of the petrographic, CRS and SEM studies, reveal that the solutions filtered through the capillary cracks and fractures developed within the Jurassic limestones caused to chemical dissolutions and to development of the cavities within the carbonate minerals. It was determined that the dissolved carbonate minerals elementally added to the solutions, those formed in the form of stalactites, and stalagmites consisted of a denser $CaCO_3$ composition. The effect of karstification was investigated by preparing the chemical analysis from the main rock units and the remnant materials of the soils of the karstification units. The chemical analysis results of both products show significant differences in terms of some elements. The remnant soils of the karstification waste, enrichment in terms of Mg, Fe, Ni, Co, Ga, Cd and Y elements and a significant impoverishment in Ca and Sr content were observed. The impoverishments are due to the washing of the carbonate rock and the enriched elements may have resulted from the interaction of the solutions circulating in the ophiolitic rocks in the region and act in the remnant composition of the karstification soils.

Keywords: Tulumtaş, Karstification, Cave

FACTORS AFFECTING USERS' BEHAVIORS FOR ONLINE HOTEL BOOKING

KULLANICILARIN ONLİNE OTEL REZARVASYONU DAVRANIŞLARINI ETKİLEYEN FAKTÖRLER

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ÖZET

Son yıllarda ortaya çıkan ihtiyaç ve istekler paralelinde bilgisayar ve internet teknolojileri alanında da çok büyük gelişmeler yaşanmıştır. Özellikle bilgi ve iletişim teknolojisi alanındaki büyük gelişmelere paralel olarak teknolojik ürünler ekonomik açıdan birçok kesim tarafından ulaşılabilir hale gelmiştir. Böylece yaygın bir kullanım alanına giren bilişim teknolojileri araçları bireylerin bütün yaşam alanını etkilemiştir. Bireylerin alışkanlıklarında meydana gelen bu değişim özellikle turizm sektöründe çok yoğun bir şekilde hissedilmiştir. Oluşan yeni düzende turistler turistik faaliyetlerini, planlarını ve otel rezervasyonlarını geleneksel yöntemler yerine çevrimiçi ortamda yapar duruma gelmişlerdir. Bu sebeple tüketicilerin çevrimiçi otel rezervasyonu yapma tutumunu etkiyen faktörleri araştırmak stratejik bir araştırma konusudur. Bu çalışmada tüketicilerin çevrim içi otel rezervasyonu yapma tutumunu etkileyen faktörler analiz edilmiştir. Literatürde araştırmacıların çalışmaları taranarak çevrim içi otel rezervasyonu yapma tutumunu etkileme potansiyeline sahip değişkenler tespit edilmiştir. Bu değişkenlerden algılanan kullanım kolaylığı, algılanan kullanışlılık, algılanan haz, algılanan risk, etkileşim, algılanan maliyet, imaj ve sübjektif normların tutum üzerindeki etkilerine yoğunlaşan bir model oluşturulmuştur. Türkiye genelinde 365 kadın ve 249 erkekten oluşan 614 katılımcıdan çevrimiçi anket yöntemiyle derlenen veriler yapısal eşitlik modeli aracılığıyla analiz edilmiştir. Sonuçlar algılanan kullanışlılık, algılanan haz, etkileşim ve sübjektif normun algılanan tutum üzerinde pozitif ve anlamlı etkilerinin olduğunu göstermektedir. Ayrıca algılanan riskin tutum üzerinde negatif ve anlamlı bir etkisi bulunmaktadır. Bununla birlikte algılanan kullanım kolaylığı, algılanan maliyet ve algılanan imaj ile algılanan tutum arasında anlamlı bir ilişkiye rastlanmamıştır.

Anahtar Kelimeler: Tüketici davranışları, çevrimiçi rezervasyon, yapısal eşitlik modellemesi

ABSTRACT

In parallel with the needs and demands that have emerged in recent years, there have been great developments in the field of computer and internet technologies. Especially in parallel with the great developments in the field of information and communication technology, technological products have become economically accessible to many segments. Thus, information technology tools, which are in a widespread area of use, have affected the entire living space of individuals. This change in the habits of individuals has been felt very intensely, especially in the tourism sector. In the new order that has emerged, tourists have come to a situation where they make their touristic activities, plans and hotel reservations online instead of traditional methods. For this reason, it is a strategic research topic to investigate the factors that affect the attitude of consumers to make online hotel reservations. In this study, the factors affecting consumers' online hotel reservation attitude were analysed. By scanning the studies of researchers in the literature, variables that have the potential to affect the online hotel reservation attitude have been identified. From these variables, a model was created that focuses on the effects of perceived ease of use, perceived usefulness, perceived pleasure, perceived risk, interaction, perceived cost, image and subjective norms on attitude. Data collected from 614 participants, 365 women and 249 men, across Turkey, using the online survey method, were analysed through the structural equation modeling. The results show that perceived usefulness, perceived pleasure, interaction and subjective norm have positive and significant effects on perceived attitude. In addition, perceived risk has a negative and significant effect on attitude. However, no significant relationship was found between perceived ease of use, perceived cost, perceived image and perceived attitude.

Keywords: Consumer behaviour, online booking, structural equation modeling

SIMULATION AND DESIGN OF A HG/CD/TE HOMOJUNCTION INFRARED PHOTODETECTOR

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ABSTRACT

In this work, a study on design and simulation of a Hg/Cd/Te heterojunction IR (infrared) photo-detector has been reported in detail. This performance has been executed by obtaining I-V data and optical characteristics of the initiated device. The parameters of simulated structure are associated with the inputs as work temperature, doping concentration and length of the donor and acceptor regions of the Hg/Cd/Te heterojunction photodetector. Moreover, G – R Model (Generation and Recombination) of the depletion region occurring in the location around center of the structure that has also been examined. The G – R Model parameters are to see the effects of Auger Recombination and Trap Assisted Tunneling which are the processes can be found, in non-equilibrium conditions of the distributed carrier density, and variation of wide of depletion region. As essential properties of a photo-sensing device that the detectivity, absorption coefficient, internal and external quantum efficiency have been provided, as optical characteristics of the photo-detector. Energy band diagram, charge carrier density and the electric field in Hg/Cd/Te heterojunction that have also been given both for the equilibrium and non-equilibrium conditions. Because of the difference between equilibrium and non-equilibrium conditions is originated from the applied bias, external voltage application and its increment factor are considered as additional main inputs as well. Besides the dynamic resistances which means the resistance changing through the voltage, are depending on applied bias; the current outputs can be taken from the general I–V graph and that is main output of whole I–V characterization of the device initially. In addition, we could calculate the noise equivalent power by reversing the resulted values of the detectivity from this software as well.

Keywords: Hg/Cd/Te heterojunction, photodetectors, simulation

TACTICAL: RAM IMAGE RETRIEVAL IN LINUX USING PROTECTED MODE ARCHITECTURE'S PAGING TECHNIQUE

TACTICAL: KORUMALI MOD MİMARİSİNİN SAYFALAMA TEKNİĞİNDEN YARARLANILARAK LINUX'TA RAM IMAGE ALMA

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ÖZET

1) AMAÇLAR

Bu makale Linux işletim sistemli bir bilgisayardan ram imajının nasıl alındığı ve alınırken hangi adımların izlenmesi gerektiği üzerinedir. Ram görüntüsü almaktan kastımız, fiziksel belleğin anlık olarak boşaltılıp bir dosyaya yazılması işlemidir.

Bu işlem, o anda bilgisayarın belleğindeki her şeyin fotoğrafını çekmeye benzetilebilir. Bu işlem ram görüntülerini analiz eden araçlar için oldukça önemlidir.

Bu araçlar adli dünyada yaygın olarak kullanılmaktadır. Adli bilişim, resmi makamlar adına herhangi bir bilgisayar veya sunucudaki bilgilerin dijital olarak incelenmesine yönelik işlemler bütünüdür.

2) YÖNTEMLER

Temel olarak bu işlemin gerçekleştirilebilmesi için, Sistem RAM kaynağıyla eşleşen adreslerin filtrelenmesi gerekmektedir. Bu aşamada farklı filtreleme yöntemleri vardır.

Filtreleme yöntemleri:
1. İlgili kaynağın proc dosya sisteminde kayıtlı ismi ile string üzerinden karşılaştırılması.
2. Numaralandırılmış kaynak yapılarının flag bilgilerinin bit düzeyinde karşılaştırılması.
3. Adres aralığının kullanıcı tarafından okunması ve sürücüye modparam olarak iletilmesi.

Diğer yöntemlerin riskleri göz önüne alındığında, uygun görülen yöntem ikinci yöntemdir. Kaynak flag'inde (0x01000200) işaret eden bitleri maskelemek ve filtrelemek için IORESOURCE_SYSTEM_RAM kullanıyoruz.

3) SONUÇLAR

Tablodan da anlaşılacağı üzere build 4 versiyonda da başarılı olmuş, sürücü insmodda görüntülenebilmiş ve ram görüntüsü başarıyla alınmıştır.

Çekirdek	Build	Insmod	Ram Image
5.4.0-107-generic	Başarılı	Başarılı	Başarılı
5.10.0-11-amd64	Başarılı	Başarılı	Başarılı
4.4.0-142-generic	Başarılı	Başarılı	Başarılı
3.3.4-5.fc17.x86	Başarılı	Başarılı	Başarılı

Anahtar Kelimeler: *linux, adli bilişim, ram görüntü*

ABSTRACT

1) AIM

This article explains how to get a ram image from a computer with a Linux operating system and what steps should be followed while getting it. What we mean by taking a ram image is the process of dumping the physical memory instantly and writing it to a file.

This process can be likened to taking a picture of everything in the computer's memory at that moment. This process is very important for tools that analyze ram images.

These tools are used extensively in the forensic world. Forensic, on the other hand, is a set of processes for digitally examining the information on any computer or server on behalf of official authorities.

2) METHODS

The way to go is to filter out addresses that match the System RAM resource. There are different filtering methods at this stage.

Filtering methods:
1. Comparing the related resource with its registered name in the proc file system via string.
2. Bitwise comparison of the flag information of the enumerated resource structures.
3. Reading the address range by the user process and transmitting it to the driver as modparam.

The appropriate method is the second method. We use IORESOURCE_SYSTEM_RAM for masking and filtering the bits pointing (0x01000200) in the resource flag.

3) RESULTS

As can be seen from the table, the build was successful in all 4 versions, the driver could be viewed in insmod and the ram image was successfully retrieved.

Kernel	Build	Insmod	Ram Image
5.4.0-107-generic	Success	Success	Success
5.10.0-11-amd64	Success	Success	Success
4.4.0-142-generic	Success	Success	Success
3.3.4-5.fc17.x86	Success	Success	Success

Keywords: *linux, forensic, ram image*

PROPERTIES AND USAGE OF PERLITES OF CUBUK (ANKARA-TURKEY) AS INDUSTRIAL RAW MATERIAL

ÇUBUK (ANKARA-TÜRKİYE) PERLİTLERİNİN ÖZELLİKLERİ VE ENDÜSTRİYEL HAMMADDE OLARAK KULLANIMI

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ÖZET

Volkanik bir cam olan perlitler; içyapısında bulunan su nedeniyle önemli bir endüstriyel hammadde olup birçok sanayi alanında kullanılmaktadır. Perlit volkanizmaya bağlı olarak Türkiye'de birçok volkanik faaliyetlerin olduğu alanlarda yüzlek vermektedir. Çalışma alanı İç Anadolu Bölgesi'nde Ankara ilinin Çubuk ilçesinin kuzey doğusunda yer alan Susuz Köyü, Kuyumcu Köyü ve Yukarıemirler Köyü civarını kapsamaktadır. İnceleme alanındaki temel birimleri Orta-Üst Triyas yaşlı metamorfik kayalar ile Jura yaşlı allokton kireçtaşları oluşturmaktadır. Metamorfik temel kayalar volkanikler ile kesilmektedir. İncelenen perlitler Mamak ve Bozdağ Formasyonları içerisinde gözlenmektedir. Mamak Formasyonu Üst Miyosen yaşlı olup piroklastik (aglomera ve tüf) kayalar ile andezitlerden oluşmaktadır. Bozdağ Formasyonu ise Pliyosen yaşlı olup bazalt bileşimindeki kayalar ile temsil edilmektedir. Yapılan bu çalışmada Çubuk civarında yüzlek veren perlitlerin yayılımlarının belirlenmesi, mineralojik, petrografik ve jeokimyasal özellikleri belirlenerek endüstriyel hammadde olarak kullanılabilirliğinin belirlenmesi amaçlanmıştır. Bu amaçla çalışma alanındaki volkanik kayalar içerisindeki perlitlerin yayılımları tespit edilmiş, mineralojik-petrografik incelemeler yapılmış ve jeokimyasal analizler gerçekleştirilmiştir. Çalışma alanındaki perlitler KB-KD doğrultulu normal faylar boyunca yüzlek vermiş olup yayılımları yaklaşık D-B yönlüdür. Perlitler açık yeşil renkli olup soğan zarı yapıları göstermeleri ile karakteristiktir. Bozuşmaya uğramış kısımlar açık gri renkli gözlenmektedir. Perlitlerin üzerinde bazalt bileşiminde volkanik kayalar bulunmaktadır. Mikroskobik olarak vitrofirik dokulu olan kayalarda volkan camı ile birlikte yer yer amorf silika (kalsedon) gözlenmektedir. Perlitlerin jeokimyasal bileşimlerine bakıldığında SiO_2 içerikleri % 74.6-80.4, Al_2O_3 % 9.9-10.9, Na_2O % 1.5-3.9, K_2O % 1.5-4.0, CaO % 0.5-1.5, Fe_2O_3 % 0.6-0.8, MgO %0.0-0.6 ve TiO_2 % 0.0-0.9 arasındadır. Ateşte kayıp değerleri % 0.7-5.3 arasında değişmektedir. Elde edilen jeolojik, mineralojik, petrografik ve jeokimyasal verilere göre çalışma alanındaki perlitlerin yüksek su içeriği ve patlatmaya uygun olması nedeniyle endüstriyel hammadde olarak kullanılmaya uygun olduğu tespit edilmiştir.

Anahtar Kelimeler: Perlit, Çubuk, Türkiye.

ABSTRACT

Perlites which are a volcanic glass are an important industrial raw material due to the water in its internal structure and are used in many industrial areas. Perlite crops out in areas where many volcanic activities occured in Turkey due to volcanism. The study area covers the vicinity of Susuz Village, Kuyumcu Village and Yukariemirler Village, located in the north east of Çubuk district of Ankara province in the Central Anatolia Region. The basement units in the study area consist of Middle-Upper Triassic metamorphic rocks and Jurassic allochthonous limestones. Metamorphic basement rocks are cut by volcanics. The investigated perlites are observed within the Mamak and Bozdağ Formations. The Mamak Formation is Upper Miocene aged and consists of pyroclastic (agglomerated and tuff) rocks and andesites. Bozdağ Formation is Pliocene aged and is represented by rocks which is basalt in composition. In this study, it was aimed to determine the distribution of perlites exposed around Çubuk and to determine their mineralogical, petrographic, geochemical properties and usability as industrial raw materials. For this purposes, the distribution of perlites in the volcanic rocks in the study area was determined, mineralogical-petrographic studies and geochemical analyzes were carried out. The perlites in the study area crop out along the NW-NE trending normal faults and their distribution is approximately E-W directional. Perlites are light green in color and are characteristic by showing onion-skin fractures. The weathered parts are observed light gray in color. Perlites were overlapped by volcanic rocks which are basalt in composition. Microscopically, the rocks have vitrophyric texture and locally amorphous silica (chalcedony) is observed together with volcanic glass. According to the geochemical compositions of perlites, SiO_2 contents are between 74.6-80.4 %, Al_2O_3 9.9-10.9 %, Na_2O 1.5-3.9 %, K_2O 1.5-4.0 %, CaO 0.5-1.5 %, Fe_2O_3 0.6-0.8 %, MgO 0.0-0.6 % and TiO_2 0.0 -0.9 %. Loss on ignition values are between 0.7-5.3 %. According to the geological, mineralogical, petrographic and geochemical data, it has been determined that the perlites in the study area are suitable for using as industrial raw materials due to their high water content and suitable for blasting.

Keywords: Perlite, Çubuk, Turkey.

INVESTIGATION OF SELF FEAR LEVELS OF AMATEUR AND PROFESSIONAL ATHLETES

AMATÖR VE PROFESYONEL SPORCULARIN BENLİK KORKUSU DÜZEYLERİNİN İNCELENMESİ

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ÖZET

Bu çalışmada amatör ve profesyonel sporcuların benlik korkusu düzeylerinin incelenmesi amaçlanmaktadır. Araştırma betimsel araştırma deseninin bir çeşidi olan tarama araştırma modelindedir. Çalışmanın evrenini amatör ve profesyonel sporcular oluşturmakta olup, örneklem grubu 131 kişi kapsamındadır. Çalışmada veri toplama aracı olarak; Aardema ve ark. (2013) tarafından geliştirilen Türkçeye ise Akın ve ark., (2016) tarafından uyarlanan Benlik Korkusu Ölçeği (BKÖ) kullanılmıştır. 6'lı derecelendirme içeren Benlik Korkusu Ölçeği, 8 maddeden ve tek boyuttan oluşmaktadır. Ölçekte ters puanlanan madde bulunmamaktadır. Ölçekteki 8 maddenin toplanmasıyla benlik korkusu ile ilgili toplam puan elde edilmektedir. Araştırmada katılımcıların yaş, cinsiyet, spor yapma düzeyi, spor branşı değişkenlerine göre Benlik Korkusu Ölçeği toplam puanları arasında istatistiksel olarak anlamlı bir farklılık olmadığı belirlenmiştir. Diğer taraftan 18-21 yaş aralığındaki katılımcıların benlik korkusu toplam puanı en yüksek iken, 25 yaş ve üzeri bireylerin benlik korkusu toplam puanının en düşük olduğu tespit edilmiştir. İlaveten 0-5 yaş aralığındaki katılımcıların benlik korkusu toplam puanının en yüksek olduğu saptanmıştır. Tüm bunlara ek olarak yüksek gelire sahip katılımcıların benlik korkusu toplam puanlarının, düşük gelirli bireylere göre daha yüksek olduğu belirlenmiştir. Sonuç olarak bu çalışma katılımcıların yaşlarının arttıkça benlik korkusunun azaldığını, spor yaşının azaldıkça kişilerde benlik korkusunun arttığını, gelir düzeyi arttıkça ise benlik korkusu düzeyinde de artış görüldüğünü ortaya koymaktadır.

Anahtar Kelimeler: Amatör Sporcu, Benlik korkusu, Profesyonel Sporcu

ABSTRACT

In this study, it is aimed to examine the self-fear levels of amateur and professional athletes. The research is in the survey research model, which is a type of descriptive research design. The universe of the study consists of amateur and professional athletes, and the sample group is within the scope of 131 people. As a data collection tool in the study; Aardema et al. (2013) and adapted to Turkish by Akın et al. (2016), the Self-Fear Scale (BQS) was used. The Fear of Self Scale, which includes a 6-point rating, consists of 8 items and a single dimension. There is no reverse scored item in the scale. A total score for fear of self is obtained by summing 8 items in the scale. In the study, it was determined that there was no statistically significant difference between the total scores of the Self-Fear Scale according to the age, gender, level of doing sports, and sports branch of the participants. On the other hand, it was determined that while the total score of self-fear of the participants in the 18-21 age range was the highest, the total score of self-fear was the lowest for the individuals aged 25 and over. In addition, it was determined that the total score of self-fear of the participants in the 0-5 age range was the highest. In addition to all these, it was determined that the total self-fear scores of the high-income participants were higher than the low-income individuals. As a result, this study reveals that as the age of the participants increases, the level of self-fear decreases, as the age of sports decreases, the level of self-fear increases, and as the income level increases, there is an increase in the level of self-fear.

Keywords: Amateur Athlete, Self Fear, Professional Athlete

DIGITILITASATION IN THE FIELD OF HEALTH

SAĞLIK ALANINDA DİJİTALLEŞME

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ÖZET

İçinde bulunduğumuz çağın en belirgin özelliklerinden biri, bilim ve teknolojideki gelişmelerdir. Teknolojideki gelişmelerin önemli derecede etkilediği alanların başında sağlık alanı gelmektedir. Günümüzde sağlık alanı giderek dijitalleşen teknolojik bir görünüm kazanmaktadır. Bu çalışmada ülkemizdeki sağlık kurumlarının teknolojik bağlamda tarihsel olarak değişiminin analizi amaçlanmaktadır. Sağlığın dijitalleşmesi kavramı bireylerin kendi sağlık bilgilerini, tedavi geçmişlerini sağlık alanına uyarlanan internet programları, teknolojik ağlar vasıtasıyla görülebilmesine ve bu bilgilerin ilgili kurumlarca takip edilebilmesine işaret etmektedir. Dolayısıyla sağlıkta dijitalleşme, teknolojinin sağlık alanına yansımasıyla ilgili sağlık meslekleri ve kurumları açısından öngörülebilirlik, etkinlik, verimlilik gibi hedefleri gerçekleştirmeye imkan sağlamaktadır. Bunun yanında teknolojiye toplumsal olarak erişim ve teknolojiyi kullanabilme durumları da önem arz etmektedir. Bu bağlamda söz konusu teknolojiyi kullanma kabiliyeti, toplumun özellikle bazı dezavantajlı grupları açısından dijitalleşen sağlık hizmetlerinden kolaylıkla yararlanabilme noktasında daha da öne çıkmaktadır. Sonuç olarak günümüzde hızla ilerleyen teknolojinin toplumu da etkilemesi kaçınılmazdır. Bunun yanında toplumsal hayatta hastalık-sağlık olgusu söz konusu olduğunda toplumsal sağlığın korunması ve gelecek nesillere aktarılması ayrı bir ehemmiyet taşıdığından, dijitalleşen sağlık hizmetlerinin toplumsal yönü ciddiyetini korumaya devam edecektir.

Anahtar Kelimeler: Sağlık, dijitalleşme, teknoloji.

ABSTRACT

One of the most significant characteristics of the present era is the advancements in science and technology. The field of health is one of the most affected areas by the improvements in technology. Today, the field of health is gaining an increasingly digital and technological appearance. In this study, it is aimed to analyze the historical change of health institutions in the technological context of our country. The concept of digitalization of health refers to the fact that individuals can see their own health information, treatment histories through internet programs and technological networks adapted to the field of health, this information can be followed by relevant institutions. Therefore, digitalization in health provides the opportunity to achieve goals such as predictability, effectiveness and efficiency in terms of health professions and institutions related to the reflection of technology in the field of health. In addition, it is important that they have socially access to technology and be able to use technology. In this context, the ability to use such technology is more prominent easily benefit from digitalized health services, especially for some disadvantaged groups of society. As a result, it is inevitable that today's fast-moving technology will affect society as well. In addition, the social aspect of digitalized health services will continue to maintain its seriousness, since the protection of social health and its transfer to future generations are of particular importance when it is a matter of the phenomenon of disease-health in social life.

Keywords: Health, digitalization, technology.

NUTRIGENETIC AND NUTRIGENOMIC APPROACHES TO IMPROVE CARDIOMETABOLIC HEALTH

KARDİYOMETABOLİK SAĞLIĞIN GELİŞTİRİLMESİNDE NUTRİGENETİK VE NUTRİGENOMİK YAKLAŞIMLAR

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ÖZET

Nutrigenomik, besinlerin gen ekspresyonu üzerindeki etkilerini incelerken; nutrigenetik, besinler tarafından desteklenen vücuttaki genetik varyasyonların etkisini incelemektedir. Sadece hastalıkların tedavisinde değil, aynı zamanda sağlığın geliştirilmesinde önemli bir rol oynamaktadır. Besinler ve genom iki düzeyde etkileşime girmektedir: 1) Besinler bireysel fenotipi değiştirebilecek düzeyde gen ekspresyonunu indükleyebilmekte veya baskılayabilmektedir. 2) Tek nükleotid polimorfizmleri (SNPs), önemli metabolik yolların ve aracıların biyoaktivitesini değiştirebilmekte ve besinlerin bunlarla etkileşime girme yeteneğini etkileyebilmektedir. Çeşitli genler ve tek nükleotid polimorfizmleri hem hayvan hem de insan çalışmalarında obez fenotiplerle ilişkilendirilmiştir. Bu genlerden bazıları Genom Çaplı İlişkilendirme (GWAS) teknolojisi kullanılarak keşfedilmiştir. Besinler ve hücresel/genetik süreçler arasındaki etkileşim "Beslenme Genomikleri" olarak adlandırılmaktadır. Bu genomik araştırmaların kavramsal temeli beş ilke ile özetlenmektedir. 1) Diyet bileşenleri, gen ekspresyonunu ve/veya yapısını değiştirmek için doğrudan veya dolaylı olarak insan genomu üzerinde etki etmektedir. 2) Belirli koşullar altında ve bazı kişilerde diyet, birçok hastalık için ciddi bir risk faktörü olabilmektedir. 3) Diyetle düzenlenen bazı genler; kronik hastalıkların başlangıcında, insidansında, ilerlemesinde ve/veya şiddetinde rol oynamaktadır. 4) Diyetin sağlık ve hastalık arasındaki dengeyi etkileme durumu, bireyin genetik geçmişine bağlıdır. 5) Genotipe dayalı diyet müdahaleleri; kronik hastalıkların önlenmesinde, hafifletilmesinde veya iyileştirilmesinde kullanılabilmektedir. Sonuç olarak bir dizi tek nükleotid polimorfizmi kardiyometabolik hastalıklar ve beslenme ile yakından ilişkilidir. Belirli besinler, bireysel genetik özelliklerle etkileşime girerek kardiyometabolik hastalıkların gelişimine katkıda bulunabilecek spesifik metabolik yolların yukarı veya aşağı düzenlenmesine yol açabilmektedir. İnsan genetik çeşitliliği, genom fonksiyonu ve diyet bileşenleri arasındaki karşılıklı ilişkinin aydınlatılması, sağlığın geliştirilmesinde ve kardiyometabolik hastalıkların önlenmesinde oldukça önemlidir. Bu konuda yapılacak ileri çalışmalara ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Nutrigenetik, Nutrigenomik, Kardiyometabolik Sağlık

ABSTRACT

When nutrigenomics examines the effects of nutrients on gene expression; Nutrigenetics examines the effect of genetic variations in the body supported by food. It plays an important role not only in the treatment of diseases, but also in promoting health. Nutrients and the genome interact at two levels: 1) Nutrients can induce or suppress gene expression by changing the individual phenotype. 2) Single nucleotide polymorphisms (SNPs) can alter the bioactivity of important metabolic pathways and mediators and affect the ability of nutrients to interact with them. Various genes and single nucleotide polymorphisms have been associated with obese phenotypes in both animal and human studies. Some of these genes were discovered using Genome Wide Association (GWAS) technology. The interaction between nutrients and cellular/genetic processes is called "Nutrition Genomics". The conceptual basis of this genomic research is summarized in five principles. 1) Dietary components act directly or indirectly on the human genome to alter gene expression and/or structure. 2) Diet can be a serious risk factor for many diseases in some people under certain conditions. 3) Some genes regulated by diet play a role in the onset, incidence, progression, and/or severity of chronic diseases. 4) Whether diet affects the balance between health and disease depends on the individual's genetic background. 5) Genotype-based dietary interventions can be used to prevent, alleviate, or ameliorate chronic diseases. In conclusion, a number of single nucleotide polymorphisms are closely related to cardiometabolic diseases and nutrition. Certain nutrients may interact with individual genetic traits, leading to an up- or down-regulation of specific metabolic pathways that may contribute to the development of cardiometabolic diseases. Clarifying the interrelationships between human genetic diversity, genome function and dietary components is very important in promoting health and preventing cardiometabolic diseases. Further studies on this subject are needed.

Keywords: Nutrigenetics, Nutrigenomics, Cardiometabolic Health

EFFECTS OF TIME-RESTRICTED FEEDING MODEL IN OBESITY TREATMENT

OBEZİTE TEDAVİSİNDE ZAMAN KISITLI BESLENME MODELİNİN ETKİLERİ

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ÖZET

Obezite aşırı yağ birikimi ile karakterize, morbidite ve mortalite oranlarının artmasına neden olan önemli bir küresel sağlık sorunudur. Son yıllarda, obezitenin beslenme tedavisinde yeni beslenme stratejileri üzerine araştırmalar hız kazanmıştır. Bu stratejilerden biri olan zaman kısıtlı beslenme, akşam yemeği ve sabah kahvaltı arasında günlük açlık süresini uzatan aralıklı oruç türüdür. Zaman kısıtlı beslenme, günlük gıda alımını 10 saat veya daha kısa bir süre ile sınırlamaktadır ve bu pencerenin dışında kalan süreçte enerji alımı olmamaktadır. Zaman kısıtlı beslenmenin en çok bilinen ve uygulanan şekli, sağlıklı yetişkin Müslümanların yaklaşık 1 ay boyunca gündüz saatlerinde yemek yemediği veya içmediği Ramazan orucu şeklindedir. Zaman kısıtlı beslenme modeli sirkadyen regülasyon üzerinde etki etmektedir ve olumlu etkileri bununla ilişkilendirilmektedir. Memelilerde sirkadyen saat, çok sayıda genin ekspresyonunu düzenleyen bir transkripsiyon-translasyon geribildirim döngüsünden oluşmaktadır. Sirkadyen saat, birçok metabolik enzimin ekspresyonunu günün zamanına özgü bir şekilde düzenlemektedir. Glikoz, lipit ve enerji metabolizmasının tümü, günün bazı saatlerinde artacak bazı saatlerinde ise azalacak şekilde sirkadyen sistem tarafından düzenlenmektedir. Nitekim yapılan çalışmalar, kahvaltıda besin alımını arttırarak ve akşam yemeğinde azaltarak metabolizmadaki sirkadyen ritimlere göre yemenin glisemik kontrolü, kilo kaybını ve lipit seviyelerini iyileştirdiğini ve ayrıca açlığı azalttığını göstermektedir. Bugüne kadar pek çok hayvan çalışması, zaman kısıtlı beslenmenin vücut ağırlığında, gıda alımında, hiperlipidemide, ektopik yağ birikiminde ve inflamasyon belirteçlerinde azalmalar ve ayrıca kalp sağlığı ve yaşam süresinin uzaması dahil olmak üzere sağlık yararları sağladığını bildirmiştir. Bununla birlikte zaman kısıtlı beslenmenin obezite tedavisinde beslenme stratejisi olarak kabul edilebilmesi için daha fazla randomize kontrollü klinik çalışmaya ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Obezite, Sirkadyen Ritim, Zaman Kısıtlı Beslenme

ABSTRACT

Obesity is a serious global health problem characterized by excessive fat accumulation, leading to increased morbidity and mortality rates. In recent years, research on novel nutritional strategies in the nutritional treatment of obesity has gained momentum. One of these strategies, time-restricted feeding, is a type of intermittent fasting that extends the daily fasting period between dinner and breakfast. Time-restricted feeding limits daily food intake to 10 hours or less, and there is no energy intake outside this window. The most known and practiced form of time-restricted feeding is the Ramadan fast, in which healthy adult Muslims do not eat or drink during the daytime for about 1 month. The time-restricted diet model affects circadian regulation and its positive effects are associated with it. In mammals, the circadian clock consists of a transcription-translation feedback loop that regulates the expression of many genes. The circadian clock regulates the expression of many metabolic enzymes in a time-of-day manner. Glucose, lipid and energy metabolism are all regulated by the circadian system, increasing at some times of the day and decreasing at other. As a matter of fact, studies show that eating according to circadian rhythms in metabolism by increasing food intake at breakfast and decreasing at dinner improves glycemic control, weight loss and lipid levels, and also reduces hunger. To date, several animal studies have reported that time-restricted feeding confers health benefits, including reductions in body weight, food intake, hyperlipidemia, ectopic fat accumulation, and markers of inflammation, as well as improvement in heart health and prolongation of lifespan. However, more randomized controlled clinical studies are needed for time-restricted nutrition to be accepted as a nutritional strategy in the treatment of obesity.

Keywords: Obesity, Circadian Rhythm, Time-Restricted Feeding

KİNOLİN FONKSİYONEL GRUPLARI İÇEREN MAGNEZYUM FTALOSİYANİN SENTEZİ, KARAKTERİZASYONU VE FOTOFİZİKOKİMYASAL İNCELENMESİ

SYNTHESIS, CHARACTERIZATION AND PHOTOPHYSIOCHEMICAL INVESTIGATION OF MAGNESIUM PHTHALOCYANINE WITH QUINOLINE FUNCTIONAL GROUPS

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ABSTRACT

Photodynamic therapy (PDT) is an alternative cancer treatment that is a combination of a photosensitizing drug and light in the presence of molecular oxygen. PDT has been used to achieve a therapeutic effect and has been proposed as an alternative therapy to complement traditional protocols in the treatment of malignant tumors and many other oncological diseases. An ideal photosensitizer should be chemically pure, have high singlet oxygen generation efficiency, and significant absorption in the far red and near infrared wavelengths. In addition, it should exhibit targetable tumor localization, low dark toxicity, and be soluble in injectable solvents.

Metallophthalocyanines are known to have very interesting properties along with excellent stability to heat, light and harsh chemical environments. Phthalocyanines are promising second-generation photosensitizers for PDT due to their strong absorption of high wavelength light that penetrates the tissue, their long residence time in the triplet state, and their high efficiency in producing singlet oxygen. These compounds can be substituted with different groups to make them more suitable for PDT applications.

Quinoline, also called 1-azanaphthalene or benzo[b]pyridine, is an aromatic nitrogen-containing heterocyclic compound. Quinoline is a weak tertiary base. They can form salts with acids and show reactions similar to those of pyridine and benzene. The quinoline ring system, which exhibits a wide range of biological activities, has many other biological activities such as pharmacologically antiviral, anticancer.

In this study, it is aimed to synthesize a photosensitizing compound that can be used in photodynamic therapy by combining phthalocyanine and quinoline molecules, which have very important application areas. Its photophysical and photochemical properties were examined and its suitability for photodynamic therapy applications was evaluated.

Keywords: Phthalocyanine, quinoline, photophysicochemical

ÖZET

Fotodinamik terapi (PDT), moleküler oksijen varlığında ışığa duyarlılaştırıcı bir ilaç ve ışığın bir kombinasyonu olan alternatif bir kanser tedavisidir. PDT, terapötik bir etki elde etmek için kullanılmış ve kötü huylu tümörlerin ve diğer birçok onkolojik hastalığın tedavisinde geleneksel protokolleri tamamlamak için alternatif bir tedavi olarak önerilmiştir. İdeal bir ışığa duyarlılaştırıcı kimyasal olarak saf olmalı, yüksek singlet oksijen üretimi verimliliğine,uzak kırmızı ve yakın kızılötesi dalga boylarında önemli absorpsiyona sahip olmalıdır. Ek olarak, hedeflenebilir tümör lokalizasyonuna sahip olmasının yanı sıra düşük karanlık toksisite sergilemeli ve enjekte edilebilir solventlerde çözünür olmalıdır.

Metalli ftalosiyaninlerin ısıya, ışığa ve güçlü kimyasal ortamlara karşı mükemmel stabilite ile birlikte çok ilginç özelliklere sahip olduğu bilinmektedir. Ftalosiyaninler, dokuya nüfuz eden yüksek dalga boyunda güçlü ışık absorpsiyonları, triplet halde kalma sürelerinin uzun olması ve singlet oksijen üretmedeki yüksek verimlilikleri gibi sebeplerle PDT için umut verici ikinci nesil fotosensitizerlerdir. Bu bileşikler farklı gruplarla sübstitüe edilerek PDT uygulamaları için daha uygun hale getirilebilmektedir.

1-azanaftalin veya benzo [b] piridin olarak da adlandırılan kinolin, aromatik azot içeren heterosiklik bir bileşiktir. Kinolin zayıf bir tersiyer bazdır. Asitlerle tuz oluşturabilir ve piridin ve benzeninkine benzer reaksiyonlar gösterebilirler. Geniş bir biyolojik aktivite yelpazesi sergileyen kinolin halka sisteminin, farmakolojik olarak antiviral, antikanser, gibi daha birçok biyolojik aktiviteye sahiptirler.

Bu çalışmada, çok önemli uygulama alanlarına sahip olan ftalosiyanin ve kinolin moleküllerinin birleştirilmesiyle fotodinamik terapide kullanılabilecek ışığa duyarlılaştırıcı bileşiğin sentezlenmesi amaçlanmıştır. Fotofiziksel ve fotokimyasal özellikleri incelenerek fotodinamik tedavi uygulamaları için uygunluğu değerlendirilmiştir.

Anahtar Kelimeler: Ftalosiyanin, kinolin, fotofizikokimyasal

THE EFFECT OF EXERCISE ON ISCHEMIA/REPERFUSION INJURY AND MYOKINE PROFILE IN DIABETIC CARDIOMYOPATHY

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OBJECTIVES: Diabetes is a metabolic disorder characterized by hyperglycemia. Diabetics are more susceptible to ischemia/reperfusion(I/R) injury. Exercise induces a protective phenotype against I/R damage. We compared two different exercise protocols in diabetic cardiomyopathy. Furthermore, we also evaluated the key role of myokines in exercise-induced cardioprotection.
METHODS: Male, Wistar rats were used (n=20x6). First animals were divided into two groups: Non-Diabetic(ND) and Diabetic(DM), then both groups were further divided into three subgroups: Sedentary(S), Training 1(T1*), Training 2(T2**)
*(*T1:10 m/min, 0º slope, 1 hours/day; **T2: 20 m/min, 10º slope, 1 hours/day.)*
Diabetes was induced by injection of Streptozotocin(50 mg/kg). Animals exercised 5 days/week for 12 weeks on a treadmill. After sacrification hearts were mounted on the Langendorff's and functional parameters were measured, then I/R(30'/120') was applied. TTC staining was used to measure the infarct size. Concentrations of myokines (Interleukin-6, Irisin, and Myonectin) were determined in skeletal muscle and in the left ventricle.
RESULTS: We observed cardiac hypertrophy, impaired baseline function, and post-ischemic recovery in diabetic animals. Exercise did not recover those parameters. Infarct size was significantly larger in diabetics and only T1 decreased the infarct size in diabetic animals. Irisin and myonectin levels were decreased in the soleus of diabetic animals. T1 increased the myonectin in the left ventricle of non-diabetics, but this effect was blunted in diabetic animals.
CONCLUSIONS: Light-intensity exercise is a better approach to prevent ischemic damage in DCMP. We observed a blunting in exercise-induced cardiac myonectin response, which may be accounted for the negative effects of diabetes.

INVESTIGATION OF CATALYTIC EFFECT OF NITRITE ON COBALT HYDROXYNAPHTHOL BLUE COMPLEX WITH GRAPHITE AND GRAPHENIZED ELECTRODE BY ELECTROCHEMICAL METHODS

KOBALT-HİDROKSİNAFTOL MAVİSİ KOMPLEKSİ ÜZERİNE NİTRİTİN KATALİTİK ETKİSİNİN GRAFİT VE GRAFENİZE ELEKTROT İLE ELEKTROKİMYASAL YÖNTEMLERLE ARAŞTIRILMASI

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ÖZET

Hidroksinaftol mavisi (HNB) bir çok araştırmada tercih edilen bir azo boyarmaddedir. Ca, Cu Mg, Sr, Ba, Fe Co, Mn, Ti, V metallerinin tayininde sıkça kullanılmaktadır. Ayrıca DNA ve RNA analizlerinde tercih edilmektedir. Bu çalışmada NHB'nin kobalt kompleksi üzerine nitritnin voltammmetrik katalitik etkisi incelenmiştir. Voltammetride kompleks çalışmalarında sıkça cıva elektrot tercih edilmektedir. Cıva elektrot toksik etkiye sahip olduğu için kompleks tayinlerinde alternatif elektrotlara ihtiyaç duyulmaktadır. Bu amaçla mevcut çalışmada kalem grafit elektrot (PGE) ile grafenize edilmiş PGE (g-PGE) kullanılmıştır. PGE'nin etanolik HCl çözeltisinde bekletilmesiyle grafen elektrot ele geçmiştir. PGE ve g-PGE' nin elektrokimyasal özellikleri Elektrokimyasal Empedans Spektroskopisi (EIS) ve Dönüşümlü Voltammetri (CV) teknikleriyle 2,5 mM potasyum hekzasiyanoferrat III ($K_3[Fe(CN)_6]$) / potasyum hekzasiyanoferrat II trihidrat ($K_4[Fe(CN)_6].3H_2O$) redoks çiftinin bulunduğu 0.1 M KCl ortamında incelenmiştir. Bu teknikler yardımıyla grafenizasyonun başarılı olduğu anlaşılmıştır. Nitritin katalitik etkisi voltammetrik hücre içerisinde bulunan 1.0 M KNO_3 destek elektrolit ortamında incelenmiştir. Katalitik etki adsorptif kare dalga voltammetrisi (AdsSWV) tekniğiyle incelenmiştir ve çalışma elektrotlarına - 450 mV potansiyelde 10 saniye adsorpsiyon yapılmıştır. Voltammetrik çalışmalar yapılmadan önce hücreden oksijenin uzaklaştırlması için 300 saniye azot gazı geçirilmiştir. Yardımcı elektrot olarak Pt, referans elektrot olarak Ag/AgCl elektrot kullanılmıştır. HNB'nin bulunduğu destek elektrolit ortamına kobaltın eklenmesiyle Co-HNB kompleksi oluşmuştur. Bu komplekse ait ayrı bir voltammogram PGE ve g-PGE çalışma elektrotlarıyla gözlemlenmiştir. Kompleksin bulunduğu destek elektrolit ortamına nitritin eklenmesiyle birlikte PGE ve g-PGE çalışma elektrotlarıyla alınan voltamogramlara ait akım değerleri artmıştır. Sonuç olarak nitrit katalitik olarak Co-HNB kompleksine ait akım değerini arttırmaktadır.

Anahtar Kelimeler: Grafen, Katalitik etki, Elektrokimya

ABSTRACT

Hydroxynaphthol blue (HNB) is an azo dye, preferred in many studies. It is frequently used in the determination of Ca, Cu Mg, Sr, Ba, Fe Co, Mn, Ti and V metals. It is also preferred in DNA and RNA analysis. In this study, the voltammetric catalytic effect of nitrite on the cobalt complex of NHB was investigated. Mercury electrodes are often preferred in complex studies in voltammetry. Since the mercury electrode has toxic effect, alternative electrodes are needed for complex determination. For this purpose, a graphenized Pencil Graphite Electrode (g-PGE) with a pencil graphite electrode (PGE) was used in the current study. The g-PGE was obtained by holding the PGE in an ethanolic HCl solution. Electrochemical properties of PGE and g-PGE were investigated by Electrochemical Impedance Spectroscopy (EIS) and Cyclic Voltammetry (CV) techniques in 0.1 M KCl medium including, 2.5 mM potassium hexacyanoferrate III ($K_3[Fe(CN)_6]$) / potassium hexacyanoferrate II trihydrate ($K4[Fe(CN)_6].3H2O$)) redox couple. With the help of these techniques, it has been determined that graphenization is successful. The catalytic effect of nitrite was investigated in the 1.0 M KNO_3 support electrolyte medium in the voltammetric cell. The catalytic effect was investigated by the adsorptive square wave voltammetry (AdsSWV) technique and adsorption was performed on the working electrodes for 10 seconds at a potential of -450 mV. Before voltammetric studies were performed, nitrogen gas was passed for 300 seconds to remove oxygen from the voltammetric cell. Pt was used as the auxiliary electrode and Ag/AgCl electrode was used as the reference electrode. The Co-HNB complex was formed by adding cobalt to the supporting electrolyte medium in which the HNB coexist. An individual voltammogram belonging to this complex has been observed with the working electrodes PGE and g-PGE. With the addition of nitrite to the supporting electrolyte medium including the complex the current values of the voltammograms taken with the PGE and g-PGE working electrodes increased. As a result, nitrite catalytically enhances the current value of the Co-HNB complex.

Keywords: Graphen, Catalytic effect,Electrochemistry

INVESTIGATING THE rs33989964 VARIANT AND THE PROMOTER REGION METHYLATION STATUS OF SOCS-1 GENE IN TURKISH PATIENTS WITH MICROTIA

MİKROTİALI TÜRK HASTALARDA SOCS-1 GENİNİN rs33989964 VARYANTI VE PROMOTÖR BÖLGE METİLASYON DURUMUNUN ARAŞTIRILMASI

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ÖZET

Mikrotia, hafif şiddetli yapısal anormalliklerden kulağın tamamen yokluğuna kadar değişen bir doğum kusuru veya bir anomali spektrumunun parçası olarak ortaya çıkabilen doğuştan bir kulak anomalisidir. Yapılan çalışmalar mikrotia için bazı aday genetik varyantları tanımlamış olsa da nedensel bir genetik mutasyon belirlenmemiştir. Mikrotia ile ilgili yapılan epidemiyolojik araştırmalar, prevalansının bölgeye, ırka, cinsiyete ve hatta rakıma bağlı olarak değiştiğini göstermektedir. Bu nedenle mikrotia, çevresel ve genetik faktörler arasındaki etkileşimlerin dahil olabileceği çok faktörlü bir hastalıktır. Bu çalışmada, JAK/STAT sinyal yolunun inhibitörü sitokin sinyalleme baskılayıcısı SOCS-1 geninin (-1478 CA/del=rs33989964) promotör varyantı ve SOCS-1 geni promotör bölgesinin metilasyon durumuyla mikrotiaya yatkınlık arasındaki ilişkinin olup olmadığı araştırıldı. Çalışmaya akraba olmayan 17 mikrotialı hasta ve 35 sağlıklı kontrol dahil edildi. SOCS-1 geninin (rs33989964) varyantı polimeraz zincir reaksiyonu-restriksiyon parça uzunluk polimorfizmi (PCR-RFLP) yöntemiyle, SOCS-1 geni metilasyonu ise kantitatif metilasyona özgü polimeraz zincir reaksiyonu (qMSP) yöntemiyle analiz edildi. Hasta ve kontrol gruplarında SOCS-1 (rs33989964) gen varyantında hem genotip (CA/Del_p: 0.003 ve CA/Del+Del/Del_p: 0.002) hem de allel sıklığı açısından anlamlı bir ilişkinin olduğu (p:0.005) saptanmıştır. Hardy Weinberg Dengesi açısından hem hasta hem de kontrol gruplarında sapma bulunmamıştır (sırası ile p:0.007 ve p:0.88). SOCS-1 metilasyon analizi sonuçlarına göre, mikrotia hasta grubunun PMR değeri ortalaması 30.58 çıkarken, sağlıklı kontrol grubunun PMR ortalaması 49.83 olarak bulundu. Del allelinin kalıtımının bu hasta grubunda dominant etki gösterdiği ve hem heterozigot hem homozigot durumda azalmasının mikrotiaya yatkınlıkta rolü olabileceği, Del alleli yokluğunun mikrotia riskini 7.86 kat arttırabileceği görülmüştür. SOCS-1 metilasyonu sonuçlarına baktığımızda mikrotialı hastalarda sağlıklı kontrollere göre metilasyonun azalmış olduğu yani genin ekspresyonunun artabileceği görülmektedir. Sonuç olarak; Mikrotia için SOCS-1 (rs33989964) gen varyantı Del allelinin yokluğunun (Del alleli gen ekspresyon artışı ile ilişkili) ve SOCS-1 genindeki azalmış metilasyonun bir risk faktörü olarak değerlendirilebileceğini literatürde ilk kez bu çalışma ile gösterildi. Daha büyük çalışma grupları ve farklı etnik kökenlerle yapılacak çalışmalar bulgularımızı doğrulamak için gereklidir.

Anahtar kelimeler: Mikrotia, SOCS-1, CA/Del varyantı, metilasyon

ABSTRACT

Microtia is a congenital ear anomaly that can occur as part of a spectrum of birth defects or anomalies ranging from mild structural abnormalities to complete absence of the ear. Although studies have identified some candidate genetic variants for microtia, no causal genetic mutation has been identified. Epidemiological studies on microtia show that the prevalence of microtia varies depending on region, race, gender, and even altitude. Therefore, microtia is a multifactorial disease in which interactions between environmental and genetic factors may be involved. In this study, it was investigated the relationship between the promoter variant (-1478 CA/del = rs33989964) and the methylation status of the promoter region of the SOCS-1 gene, an inhibitor of the JAK/STAT signaling pathway. Seventeen unrelated patients with microtia and 35 healthy controls were included in the study. The (rs33989964) variant of SOCS-1 gene was analyzed by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) method, and SOCS-1 gene methylation was analyzed by quantitative methylation-specific polymerase chain reaction (qMSP) method. In the patient and control groups, a significant correlation was found in the SOCS-1 (rs33989964) gene variant in terms of both genotype (CA/Del_p: 0.003 and $CA/Del+Del/Del_p$: 0.002) and allele frequency (p:0.005). In terms of Hardy Weinberg Equilibrium, no deviation was found in both the patient and control groups (p:0.007 and p:0.88, respectively). According to the results of SOCS-1 methylation analysis, the mean PMR value of the microtia patient group was 30.58, while the mean PMR of the healthy control group was 49.83. It has been observed that the inheritance of the Del allele has a dominant effect in this patient group and its decrease in both heterozygous and homozygous states may have a role in the susceptibility to microtia, the absence of Del allele may increase the risk of microtia by 7.86 times. According to the SOCS-1 methylation status, patients with microtia have lower methylation levels than healthy controls, which suggests that the gene's expression may increase. In conclusion, this study showed for the first time in the literature that the absence of the SOCS-1 (rs33989964) gene variant Del allele (Del allele increases gene expression) and decreased methylation in the SOCS-1 gene can be considered as a risk factor for microtia. Studies with larger study groups and different ethnicities are necessary to confirm our findings.

Keywords: Microtia, SOCS-1, CA/Del variant, methylation

INVESTIGATED THE IL-1 RECEPTOR ANTAGONIST (IL-1RN) AND INTERLEUKIN-4 (IL-4) VNTR PROFILES IN PULMONARY EMBOLISM PATIENTS

PULMONER EMBOLİ HASTALARINDA IL-1 RESEPTÖR ANTAGONİSTİ (IL-1RN) VE İNTERLÖKİN-4 (IL-4) VNTR PROFİLLERİNİN ARAŞTIRILMASI

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ÖZET

Pulmoner emboli (PE) trombüsün venöz dolaşımdan pulmoner vaskülatüre göç etmesiyle ortaya çıkan ve bir veya daha fazla pulmoner arteri tıkayarak kan akışının bozulmasına neden olan akut bir durumdur. Klinik sunumu hastalığın şiddetine göre asemptomatikten kardiyojenik şoktaki hastalara kadar çok fazla çeşitlilik gösterebilmektedir. Tedavi edilmezse, PE yüksek oranda mortalite ve aritmi ile sonuçlanırken, etkili tedavisinden sonra bile, hastalar kalıcı dispneyle karakterize pulmoner hipertansiyon gibi hastalıklara neden olabilmektedir. PE, hemodinamik düzensizlikleri, inflamatuar süreçleri ve çeşitli hücresel disfonksiyonları içeren oldukça karmaşık bir patofizyolojiye sahip çok faktörlü bir hastalıktır. Hastalığın bu özellikleri de risk sınıflandırmasında, teşhisinde ve tedavi seçimlerinde zorluklar yaratmaktadır. Özellikle inflamatuar süreçler emboli varlığı ile ilişkilendirilmektedir. Yapılan çalışmalar pulmoner emboli hastalarında IL-1α, IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10 gibi proinflamatuar sitokin seviyelerinin önemli ölçüde yükseldiğini bulmuşlardır. Bu çalışmada, IL-1 reseptör antagonistinin (IL-1RN) ikinci intronunda 86 baz çiftlik ve interlökin-4 geninin (IL-4) üçüncü intronunda 70 baz çiftlik Değişken Sayı Tandem Tekrarlar (VNTR) polimorfizmleri akut pulmoner emboli hastalarında çalışılarak sağlıklı bireylerle aralarında hem genotip/allel sıklığı hem de önemli klinik parametreler açısından bir farklılık olup olmadığı araştırıldı. PE tanısı almış 123 hasta ve 95 sağlıklı gönüllü çalışmaya dahil edildi. Hasta ve sağlıklı kontrol gruplarından alınan kan örneklerinden genomik DNA izolasyonu gerçekleştirildi. IL-1RN ve IL-4 VNTR polimorfizmlerinin genotip ve allel analizleri için Polimeraz Zincir Reaksiyonu (PCR) yöntemi kullanıldı. Agaroz jel elektroforezi ile analiz edildi. PE hastaları ve sağlıklı kontroller arasında IL-1RN ve IL-4 genotip dağılımlarının ve allel frekanslarının istatistiksel olarak anlamlı bir farklılık saptanmadı. Aynı zamanda klinik

parametrelerde de bir ilişki saptanmadı. Sonuç olarak, IL-1RN ve IL-4 genlerinin VNTR polimorfizmlerinin PE de bir risk faktörü olmadığı görüldü. VNTR polimorfizmlerinin gen ekspresyonunun ince ayarlayıcıları olduğu düşünüldüğünde daha büyük ve farklı etnik kökenli hasta grupları ile yapılacak çalışmalarla hastalığın farklı ağırlık şiddetindeki subgruplarında pulmoner emboli inflamasyon süreçlerini daha iyi anlayabilmemizi sağlayacaktır.

Anahtar Kelimeler: Pulmoner emboli, IL-1RN, IL-4, PCR, inflamasyon

ABSTRACT

Pulmonary embolism (PE) is an acute condition that occurs when a thrombus migrates from the venous circulation to the pulmonary vasculature and occludes one or more pulmonary arteries, resulting in impaired blood flow. Its clinical presentation can vary greatly depending on the severity of the disease, from asymptomatic to patients in cardiogenic shock. PE has a high mortality rate and risk of arrhythmias if untreated, and patients can still develop diseases like pulmonary hypertension, which is marked by persistent dyspnea, even with successful treatment. The disease's characteristics make it challenging to categorize risks, make diagnoses, and choose treatments. The presence of embolism is associated, particularly, with inflammatory processes. Studies have found that proinflammatory cytokine levels such as IL-1α, IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10 are significantly increased in patients with pulmonary embolism. In this study, Variable Number Tandem Repeats (VNTR) polymorphisms of 86 base pairs in the second intron of the IL-1 receptor antagonist (IL-1RN) and 70 base pairs in the third intron of the interleukin-4 gene (IL-4) were studied in patients with acute pulmonary embolism, and there was no correlation between them and healthy individuals. We investigated whether there was a difference in genotype/allele frequency as well as important clinical parameters. 123 patients diagnosed with PE and 95 healthy volunteers were included in the study. Genomic DNA isolation was performed from blood samples taken from patient and healthy control groups. Polymerase Chain Reaction (PCR) method was used for genotype and allele analysis of IL-1RN and IL-4 VNTR polymorphisms. Analyzed by agarose gel electrophoresis. There was no statistically significant difference in IL-1RN and IL-4 genotype distributions and allele frequencies between PE patients and healthy controls. In addition, no correlation was found in clinical parameters. In conclusion, VNTR polymorphisms of IL-1RN and IL-4 genes were not a risk factor for PE. Considering that VNTR polymorphisms are fine-tuners of gene expression, studies with larger and different ethnicity patient groups will enable us to better understand the pulmonary embolism inflammation processes in subgroups of different severity of the disease.

Key Words: Pulmonary embolism, IL-1RN, IL-4, PCR, inflammation

SYNGAS H_2 REFORMING IN DOUBLE COLUMN WASTE GASIFIER WITH MICROWAVE CHAMBER THERMOCATALYTIC TAR CRACKING USING FE2O3-SUPPORTED PBO/ZNO CATALYST

TERMOKATALİTİK KATRAN AYRIŞMALI ÇİFT KOLON GAZLAŞTIRICIDA PBO/ZNO KATALİZÖR KULLANARAK MİKRODALGA H_2 SENTEZİ

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ÖZET
Bu çalışmanın amacı, bir mikrodalga radrasyonla katran ayrışma pirolizi ve sentez gazı dönüştürme ünitesinde gaz performansını değerlendirmektir. Bu ünite, dikey bir biyokütle/kömür gazlaştırıcısının piroliz-yanma bölgesini takip eden iki aşamalı bir boru reaktöründen oluşuyordu. Biyokütle gazlaştırmasının ekzotermik yanma reaksiyonlarında üretilen katran ayrışmasını ve sentez gazının yeniden oluşmasını sağlayarak harici ısıtma ihtiyacını ortadan kaldırmaktadır. Ünitenin performansı Fe_2O_3 destekli ZnO/PbO katalizörleri kullanılarak değerlendirilmiştir ve katran ayrışma ve sentez gazı bileşiminin iyileştirilmesinde çok etkili olduğu belirlenmiştir. 30 sn kalma süresinde ve %10 Zn/Pb yüklemesinde %95'lik bir katran ayrışma oranı elde edilmiştir. Bu koşul ayrıca sentez gazına %33'lük yüksek termik ayrışımı sağlamıştır (katalitik ayrışma olmadan elde edilen %7'lik orana kıyasla). Gaz kalış süresinin ve Zn/Pb yüklemesinin birim katran ayrışma ve sentez gazı bileşimi üzerindeki etkisi de incelenmiştir. 2-5 dk'lık gaz rezidansı ve %4-%8'lik Zn/Pb yüklemesi, endüstriyel uygulamalara uygun (9 g/m^3'ten az) katran içeriğine sahip temiz sentez gazının harici ısıtma olmaksızın aşağı akımlı bir biyokütle gazlaştırıcısında üretilmesi için uygun bulunmuştur.

Anahtar Kelimeler: Syngas, H_2 reforming, atık gazlaştırıcı, mikrodalga, katalitik katran kırma, kataliz

ABSTRACT
The objective of this study is to evaluate the performance of an in-microwave thermolysis chamber tar cracking and syngas reforming unit. This unit was composed of a two-stage pipe reactor placed following the pyrolysis-combustion zone of an downdraft biomass/coal gasifier. Heat generated in the exothermic combustion reactions of biomass gasification drove tar cracking and syngas reforming in the tubes, eliminating the need of external heating. The performance of the unit was evaluated using Fe2O3-supported ZnO/PbO catalysts and was found to be very effective in tar removal and syngas composition enhancement. A tar removal rate of 95% was achieved at 30 s residence time and 10% Zn/Pb loading. This condition also gave syngas high-heating conversion of 33% (in comparison without catalytic cracking to 7 %). The effect of gas residence time and Zn/Pb loading on tar removal and syngas composition of the unit was also studied. Gas residence of 2-5 mins and Zn/Pb loading of 4%-8% were found appropriate to produce clean syngas with tar content appropriate for industrial applications (less than 9 g/m3) in an downdraft biomass gasifier without external heating.

Keywords: Syngas, H_2 reforming, waste gasifier, microwave, catalytic tar cracking, catalysis

MICROWAVE BUBLING SYNGAS REFORMING ON BIOMASS PYROLYSIS TAR BY SERPENTINITE GRANULES IN SALT/CHAR/CARBON SEMI-MOLTEN SALT

KISMİ ERİMİŞ TUZ KÖPÜKTE SERPANTİNİT GRANÜLLERİYLE BİYOKÜTLE PİROLİZİ - MİKRODALGA H_2 SENTEZİ

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ÖZET

Bu çalışmada, mikrodalga auger piroliz sisteminde ısı transferini kontrol etmek için serpantinit (Cr_2O_3 Fe_3O_4 Mg, Fe, Al Silikat) granüllerinin tuz/kömür ve biyokütle beslemesi ile kontrolü üzerinde önemli araştırmalar yapılmıştır. Bununla birlikte, dolgulu yatak serpantinitin kömüre ve biyokütleli kömüre yüksek ısı transferi sağlamıştır. Kömürün karmaşık kimyası ve gözenekliliği nedeniyle mikrodalga piroliz sisteminde granül boyutu ile ısı iletimi azalmaktadır. Tuz iletkenlik dağılımı, mikrodalga ısıtma gücüne bağlı olarak mikrodalga aktivasyonunda etkin olmuştur.
Mikrodalga radyasyonda ısıtılan Serpantinit granülleri, yüksek ısı iletimli katı akışları sağladı. Katı akışlar, uygun ekonomik potansiyele ve içsel parametrelere sahip gelişmiş termal enerji iletimi ve radyasyon için en umut verici teknolojilerden biridir. Auger için granül pelet teknolojisinin geliştirilmesi, ısı taşıma işleminde önemli bir konudur. Biyokütle ve kömürün gaz, serpantinit, tuz sorbent ve katı tuzların auger içinde karıştırılıp yaklaşık 500°C'de kısmen ergitilerek pirolizi, auger ve enjekte gaz kullanılarak taşıma başarılı sonuçlar göstermiştir. Bununla birlikte, karbon/serpantinit ve ısı taşıyıcı serpantinit/biyokütle-tuz içindeki sorbent tuzu, gözenekli kısmi ergimiş tuz reaktörde çözünmüş saf olmayan metal oksit çökeltileri karışmaktadır. Tüp gazlaştırıcıda hidrojen zenginleştirmeyi katalize eden Pb, Zn, Cu gibi metal oksit ürünlerinin çözünmez bir kıvamda oluşmaktadır. Bu çalışmada, Serpentinite (Cr ve Fe oksit metal çökeltileri indirgenerek -katalize edici kısmi ergiyik tuz karışımı) ile bir auger katı akışına ilişkin çok etkin debi çalışması yapılmıştır.

Anahtar Kelimeler: Biyokütle Hidrojenasyonu, Serpantinit, Mikrodalga Eritme peletleri, Isı Depolama, Erimiş Tuzlar, Serpantinit granülleri, Ferrit

ABSTRACT

In this study, important investigations have been made on serpentinite (Mg,Fe,Al Silicate with Cr_2O_3 Fe_3O_4 inclusions) granules control with salt/coal and biomass feed in order to control heat transfer in microwave auger pyrolysis system. However, the results of filled bed serpentinite yielded high heat transfer to coal and biomass char. Due to the complex chemistry of coal, and porosity, heat conduction recovered in the microwave pyrolysis system by granule size decrease. The salt conductivity distribution was caused in the microwave activation dependent on the microwave heating power.

Heated Serpentinite granules in microwave radiation provided high heat conduction solid flows. The solid flows are one of the most promising technologies for advanced thermal energy conduction and radiation with favorable economic potential and intrinsic parameters. The development of catalytic granule pellet technology for Auger is a key issue in the heat transport processing. As for pyrolysis of biomass and coal with gas, catalysis serpentinite, salt sorbent and solid salts were mixed in auger and partially molten at approximately around 500°C, we have already reported the successful results of transport using auger and injected gas. However, sorbent salt in the carbon/ serpentinite and heat carrier serpentinite/ biomass-salt mixes with impurity metal oxide fines sorped in porous salt basket. There was the insoluble consistency of contaminating metal fission products, such as Pb, Zn, Cu catalyzing hydrogen enrichment in tube gasifier. In this study, there have been very few transport studies of a auger solid flow by Serpentinite (Cr and Fe oxide metal fines reduced -catalyzing oil salt mixture).

Keywords: Biomass Hydrogenation, Serpantinite, Microwave Melting pellets, Heat Storage, Molten Salts, Serpantinite granules, Ferrite

DETERMINATION OF BIOACTIVE COMPOUNDS IN TRABZON PERSIMMON PITS AND INVESTIGATION OF POTENTIAL USES IN FUNCTIONAL FOOD PRODUCTION

TRABZON HURMASI ÇEKİRDEĞİNDEKİ BİYOAKTİF BİLEŞENLERİN BELİRLENMESİ VE FONKSİYONEL GIDA ÜRETİMİNDE KULLANIM OLANAKLARININ ARAŞTIRILMASI

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ÖZET

Gıdalarda doğal olarak bulunan ve beslenme yoluyla alınan biyoaktif bileşenlerin gerek hastalıklarının tedavisinde gerekse hastalıklardan korunmadaki rolleri son yıllarda üzerinde önemle durulan konulardandır. Tüm dünyada insan sağlığı açısından önemli biyoaktif bileşenleri içeren ve yüksek antioksidan aktiviteye sahip meyvelere ve bu meyvelerden üretilen ürünlere olan ilgi gittikçe artmaktadır. Trabzon hurması (Diospyros kaki L.) meyveleri zengin besin içerikleri yanında yüksek antioksidan aktiviteye sahip olmaları sebebiyle fonksiyonel gıda üretiminde önemli bir yere sahiptir. Bazı Trabzon hurması çeşitleri önemli biyoaktif bileşenlere sahip olan çekirdeklere sahiptir. Ancak bu çekirdekler genellikle atık olarak görülmekte ve gıda endüstrisinde kullanım olanakları üzerinde yeterince durulmamaktadır. Bu çalışmada Fuyu çeşidi Trabzon hurmalarının içerdiği çekirdeklerin protein, yağ, karbonhidrat, ham lif, toplam fenolik madde, toplam flavanoid içerikleri ve antioksidan aktiviteleri belirlenmiştir. Çalışmanın sonucunda Trabzon hurması çekirdeklerinin önemli bir karbonhidrat (%76,22) ve diyet lif kaynağı (%5,21) olmalarının yanında yüksek toplam fenolik madde içeriğine (1262,06 GAE mg/g) ve antioksidan aktiviteye (87,21 %inhibisyon) sahip olduğu belirlenmiştir. Fenolik bileşikler antioksidan olmalarının yanı sıra antimikrobiyal özellik göstermeleri açısından da önemlidir ve bu özellikleri ile farmakolojide de kullanım alanı bulmaktadır. Elde edilen bulgular, Trabzon hurması çekirdeklerinin fonksiyonel gıda üretimi için önemli bir potansiyele sahip olmalarının yanı sıra kozmetik ve farmasötik formülasyonlarında da kullanılabileceğini ortaya koymuştur. Böylece bir gıda atığına geri dönüşüm imkanı sağlanırken, kullanıldığı ürünlere fonksiyonel özellik kazandırılmış olacaktır. Gelecek çalışmalar Trabzon hurması çekirdeği içeren ürünlerin sağlık üzerine olumlu etkilerini kanıtlamaya yönelik olarak planlanmalıdır.

Anahtar Kelimeler: Trabzon hurması, fonksiyonel gıda, antioksidan aktivite

ABSTRACT

The role of bioactive compounds found naturally in foods and taken through nutrition, both in the treatment of diseases and in the prevention of diseases, has been one of the important issues that have been emphasized in recent years. All over the world, interest in fruits containing bioactive components important for human health and having high antioxidant activity and products produced from these fruits are increasing. Trabzon persimmon (Diospyros kaki L.) fruits have an important place in functional food production due to their rich nutritional content and high antioxidant activity. Some Trabzon persimmon cultivars have seeds with important bioactive components. However, these seeds are generally seen as waste and the possibilities of use in the food industry are not emphasized enough. In this study, protein, fat, carbohydrate, crude fiber, total phenolic, total flavonoid contents, and antioxidant activities of seeds contained in Fuyu persimmons were determined. As a result of the study, Trabzon persimmon seeds were found as an important source of carbohydrates (76.22%) and dietary fiber (5.21%), as well as high total phenolic content (1262.06 GAE mg/g) and antioxidant activity (87.21% inhibition) Phenolic compounds are important in terms of having antimicrobial properties as well as antioxidants, and with these properties, they are also used in pharmacology. The findings revealed that persimmon seeds had an important potential for functional food production, as well as that they can be used in cosmetic and pharmaceutical formulations. Thus, while it is possible to recycle a food waste, the products in which it is used will be given a functional property. Future studies should be planned to prove the positive effects of products containing persimmon seeds on health.

Keywords: Trabzon persimmon, functional food, antioxidant activity

EFFECTS OF FLUIDIZED BED ROASTING ON BIOAVAILABILITY AND ANTINUTRITIONAL FACTORS OF SACHA INCHI (Plukenetia volubilis)

AKIŞKAN YATAK KAVURMA İŞLEMİNİN İNKA FISTIĞININ BİYOYARARLANIMI VE ANTİNUTRİSYONEL FAKTÖRLERİ ÜZERİNE ETKİLERİ

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ÖZET

Sacha inchi olarak da bilinen inka fıstığı (Plukenetia volubilis) zengin besin içeriği ve antioksidan özelliği sayesinde doğal ortamı olan Amazonlar dışında farklı bölgelerde de yetiştirilmeye başlanmıştır. Önemli bir omega-3 yağ asidi kaynağı olan inka fıstığı bazı antinutrisyonel faktörler içermektedir. Gıdaların besleyicilik özelliklerinin değerlendirilmesinde besin öğelerinin sindirim sistemindeki biyoerişebilirliği/biyoyararlılığı gibi özellikleri ile birlikte değerlendirilmesi önem arz etmektedir. Gıdaların genel besleyicilik kalitesi yüksek olan bir gıdanın antinutrisyonel faktörleri beraberinde içerebileceği durumda bu faktörlerin de göz önüne alınması ve her gıda için kendi bileşimine uygun bir değerlendirme yapılması da önemlidir. Bu çalışmada inka fıstığının içerdiği antinutrisyonel faktörler ve biyoyararlanım üzerine kavurma işleminin etkileri araştırılmıştır. Bu amaçla inka fıstıkları akışkan yatak kavurucu kullanılarak 90, 120 ve 150 ℃'de 20 dakika boyunca kavrulmuştur. Kavrulan fıstıklarda antioksidan aktivite, toplam fenolik madde, tanen, fitik asit, saponin ve tripsin inhibitörü aktivitesi analizleri gerçekleştirilmiştir. Çalışmanın sonucunda ısıya dayanıklı olan saponinler haricinde ($p > 0.05$) tüm antinütrientlerde istatistiksel olarak önemli düzeyde azalma gerçekleşmiştir ($p < 0.05$). Diğer taraftan kavurma işlemi inka fıstıklarının antioksidan aktivite ve toplam fenolik madde içeriğinde istatistiksel olarak önemli düzeyde artışa sebep olmuştur ($p < 0.05$). Çalışmanın sonuçları kavurma işleminin inka fıstıkları için antinütrisyonel potansiyeli azaltabilen basit ve etkili bir prosedür olduğunu göstermiştir. Gelecek çalışmalar sağlık açısından faydalı fakat antinütrient oranı yüksek olan farklı tohumlar için pratik bir yöntem olan kavurma işleminin etkilerini araştırmaya yönelik olarak planlanmalıdır.

Anahtar Kelimeler: İnka fıstığı, kavurma, biyoyararlılık

ABSTRACT

Plukenetia volubilis also known as sacha inchi, have started to be grown in different regions besides the Amazons, which have a natural environment thanks to its rich nutritional content and antioxidant properties. Being an important source of omega-3 fatty acids, sacha inchi contains some antinutritional factors. It is important to evaluate the nutritional properties of foods together with their properties such as bioaccessibility/bioavailability in the digestive system. In the event that a food with a high overall nutritional quality may contain antinutritional factors, it is also important to consider these factors and to make an evaluation for each food according to its own composition. In this study, effects of roasting on antinutritional factors and bioavailability of sacha inchi were investigated. For this purpose, Sacha inchi seeds were roasted for 20 minutes at 90, 120 and 150 °C using a fluidized bed roaster. Antioxidant activity, total phenolic content, tannin, phytic acid, saponin and trypsin inhibitor activities were analyzed in roasted Sacha inchi seeds. As a result of the study, there was a statistically significant decrease in all antinutrients ($p < 0.05$), except for the heat-stable saponins ($p > 0.05$). On the other hand, roasting caused a statistically significant increase in antioxidant activity and total phenolic content of the seeds ($p < 0.05$). The results of the study revealed that roasting is a simple and effective procedure to reduce the antinutritional potential for Sacha inchi seeds. Future studies should be planned to investigate the effects of roasting, which is a practical method for different seeds that are beneficial for health but high in antinutrients.

Keywords: Sacha inchi, roasting, bioavailability

INTERNALLY DISPLACED YAZIDE WOMEN IN NORTHERN IRAQ: PTSD AND PHYSIOLOGICAL DISTURBANCE

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ABSTRACT

PTSD chronicity/severity and physiological parameters were evaluated in women living in internally displaced people camps after the ISIS attack on Iraq in 2014. The parameters evaluated were fasting blood sugar, body mass index, waist circumference, systolic blood pressure, diastolic blood pressure, blood oxygen saturation and heart rate in relation to the severity ("Moderate", "Severe" or "Extreme") and chronicity (<1year; 1-5 years; up to >5 years) of PTSD. A total of 136 women were classified into three groups as follows: Negative control = healthy individuals living outside the camps (n=45), Positive control = healthy individuals living inside the camps (n=46) and PTSD group (n=45). PTSD diagnosis was done by applying PTSD DSM-5 (PCL-5) scale. Waist circumference (9.72%), systolic blood pressure (7.9%) and heart rate (13.87%) were increased in the PTSD group, compared to negative control. Systolic blood pressure (10.43%), blood oxygen saturation (1.28%) and heart rate (9.4%) were increased in PTSD group, compared to positive control. The group "Extreme" showed increased body mass index (36.66%), waist circumference (8.57%), systolic blood pressure (10.94%) and fasting blood sugar (9.26%), compared to group "Moderate", besides higher levels of fasting blood sugar (8.03%) and systolic blood pressure (11.02%), compared to the group "Severe". Our results suggest that PTSD may have an important impact on physiological parameters which might be aggravated by the severity and chronicity of the disease.

Keywords: Posttraumatic stress disorder, Trauma, Physiology.

KEY DETERMINANTS OF IPO INITIAL RETURNS IN INDIA

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Abstract

This study examines the initial return of 120 IPOs listed on the National Stock Exchange during the five-year period from April 2015 to March 2020 and the factors explaining initial return. Compared to the previous studies which concentrates only on the returns on the listing day, this paper considers the return on 5th day of trading also, in order to test the consistency of initial return. The cross-sectional distribution of average initial return modelled better in this study as a blend of three independent variables such as firm age, issue size and subscription rate. The initial under-pricing is 16.07 % and Market Adjusted Average Return on 5th Day is 21.26 %. The under-priced issues were oversubscribed substantially when compared with the average overpriced IPOs. The results of the study clearly indicate the under-pricing of IPOs and the existence of 'Winners Curse' in the Indian Capital market. It also found that the average initial return is substantially increasing on the 5th day of listing. The study found significant association between subscription rates and level of under-pricing on the listing day as well as on the fifth day, in line with the previous empirical findings. Whereas in case of firms age and issue size, there is no significant relationship with the degree of under-pricing, but firms age has significant effect on fifth day return.

Keywords: under-pricing, initial return, market adjusted average return, subscription rates

COMPARATIVE ASSESSMENT OF POROUS UNDOPED AND DOPED (Sb, La, F) TIN OXIDES FOR DEGRADATION AND MINERALIZATION OF DOXORUBICIN FROM WATER

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ABSTRACT

The presence in water of cytostatic drugs as emerging pollutants have become a stringent problem due to the number of human cancer increasing. Electrochemical filtering process represents a hybrid process consisted of filtering and electrooxidation components, which should assure a sustainable advanced treatment of wastewater. In this study, the comparative assessment of the porous undoped and doped (Sb, La, F) SnO_2 deposited onto controlled corroded Ti plate as dimensionally stable anodes (DSAs) for advanced removal of doxorubicin (DOX) from water was investigated.

All DSAs were obtained by spin-coating method using specific precursors and Ti plates corroded controlled with oxalic acid. The electrodes were morpho-structurally characterized by X-ray diffraction (XRD) and scanning electron microscopy coupled with energy-dispersive X-Ray (SEM/EDX). Electrochemical characterization and testing of the DSAs were achieved by cyclic voltammetry (CV) and chronoamperometry (CA) using Autolab potentiostat/galvanostat. DOX concentration was determined using UV/VIS spectrophotometry (Varian Carry 100) and total organic carbon (TOC) parameter. The dopants, whose presence was proved by XRD and SEM/EDX results, influenced more or less the DSA surface porosity, given mainly by corroded Ti plate. The overpotential for oxygen evolution reaction determined by CV was considered to optimize the operating conditions for DOX electrooxidation by CA. DOX degradation and mineralization degrees depend on the electrode composition and operating conditions of current density, voltage and supporting electrolyte. Very good results related DOX degradation and mineralization degrees obtained by doped SnO_2/Ti plates are very promising to further design the electrochemical filtering process for advanced removal of cytostatics from wastewater.

Keywords: porous dimensionally stable anodes, doxorubicin, wastewater advanced treatment

A SOCIO-LEGAL STUDY ON VACCINE TOURISM IN THE CONTEXT OF CURRENT COVID-19 TRAVEL RESTRICTIONS

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ABSTRACT

Objectives: The epidemic has decimated the tourism Industry. Travel will not return to normal until the entire globe has been inoculated against Covid-19. Vaccines have been used by countries all over the world to construct a protective barrier around their populations, several nations have even begun to prepare for "vaccine tourism." Therefore, this paper aims to understand an emerging concept in the field of tourism and socio-legal issues & challenges in its growth.

Methods: The research critically examines key issues in light of the literature's current arguments and integrates the current developments and challenges in the field of vaccine tourism.

Results: The paper address that in a condition of travel restrictions, insufficiency of raw material, ambiguous policies, vaccine passport authenticity, skewed distribution, scarcity of vaccines around the world, and incomprehensive law & policies, implementation of vaccine tourism is a big challenge in the current circumstances.

Conclusions: The paper tries to understand the emerging concept of vaccine tourism and the major socio-legal challenges in its growth. Vaccine tourism has the potential to revive the tourism sector post covid, therefore understanding the current emerging issues around it, would be significant for tourism literature.

Keywords: Vaccine, Tourism, Covid -19, Vaccination, Law & Policies

ASSESSMENT OF COMMERCIAL GRANULAR ACTIVATED CARBON FOR SORPTION OF CAPECITABINE FROM WATER

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ABSTRACT

Cytostatic drugs have become an emerging issue to the water pollution due to the increase in the number of cancer cases among the population. Because conventional wastewater treatment processes are unable to act as a reliable barrier toward recalcitrant pharmaceuticals, such as cytostatic, it is necessary to introduce additional advanced wastewater treatment technologies, for example sorption-based process. Considering activated carbon sorption a mature technology for water treatment but unevaluated for cytostatics removal, in this study, the sorption abilities of granular activated carbon (GAC) to remove capecitabine (CPB) from water by batch and flow-through fixed bed column experiments were investigated.

Commercial GAC was purchased from *Flochem Industries SRL Bucharest* with the dimension of 0.6-2.38 mm. The morphology of activated carbon was analyzed by a scanning electronic microscope coupled with the energy dispersive X-ray analysis detector (SEM, Inspect S PANalytical model). The CPB concentrations were analyzed using UV/VIS spectrophotometry (Varian Carry 100).

The efficiency of the adsorption process for CPB removal was found to be dependent on operating variables: pH, GAC dose, CPB initial concentration and flow rate. The batch adsorption process was more consistent fitted with the Freundlich isothermal model and the pseudo-second-order kinetic model. Adams-Bohart, Thomas and Yoon–Nelson models were used for the dinamic experimental data.

High capacity of GAC for fast adsorption of CPB from water founded in this study is very promising to be included as viable technological solution for the removal of cytostatics from wastewater.

Keywords: granular activated carbon, capecitabine, wastewater treatment

AN ASSESSMENT OF THE FUNCTION OF CITY COUNCILS IN THE DEVELOPMENT OF LOCAL POLITICAL PARTICIPATION

YEREL SİYASAL KATILIMIN GELİŞTİRİLMESİNDE KENT KONSEYLERİNİN İŞLEVİ ÜZERİNE BİR DEĞERLENDİRME

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ÖZET

Yönetime katılım, halkın karar alma süreçlerine, uygulamalarına ve denetlemelerinde bizzat söz sahibi olmasını ve bu süreçte etkin rol oynamasını ifade etmektedir. Günümüz demokrasileri yerel halkın kendi yöresi ile ilgili alınan kararlara katılımını gerektirmekte ve bu bağamda birçok mekanizma oluşturulmaktadır. Yönetişim olarak ifade edilen yeni katılım süreci, birlikte yönetmek yani kamunun dışlanmaması, özel sektörün, sivil toplum kuruluşlarının ve toplumdaki farklı grupların yönetimin merkezinde toplayan bir yönetim yaklaşımıdır. Günümüzde Türkiye'de yerel halkın kararlara katılımını artırmak için oluşturulan en önemli mekanizmalardan birisi de kent konseyleridir. Kent Konseyleri gündelik hayatta kentsel açmazlara yönelik çözüm önerileri üretmek adına yerel mekanizma olarak hukuksal ve kurumsal zeminde varlık kazanmıştır. Siyasal katılım ve geniş temsil esası üzerine tesis edilmesi öngörülen kent konseyinin çalışmaları bu açıdan kentsel gelişimin yönünü bir nevi belirlemesi açısından önemlidir. Bu çalışmada Yerel Gündem 21 çerçevesinde oluşturulan kent konseylerinin oluşumu ve faaliyetleri irdelenmektedir. Türkiye'de kent konseylerinin gelişim süreci, kent konseyleri ile ilgili mevzuat ve kent konseylerinin halkın katılım sürecindeki etkileri ortaya konulduktan sonra kent konseylerinin uygulama sürecinde ortaya çıkan sorunlar farklı şehirlerdeki kent konseyleri örnekleri üzerinden değerlendirilecektir. Bir yerel katılım mekanizması olarak kent konseylerinin siyasal ve yönetsel katılım açısından işlevlerinin neler olduğu, demokratik sürece katkıları konunun incelenen bir başka boyutudur. Katılım kültürünün şekillenmesinde gönüllülük esası üzerine oluşturulan kent konseylerinin vatandaş, devlet ve diğer katılımcı birliklerin etkin katılımı üzerinden yönetişim dizgesine yapılan vurgu açıklanarak kent konseylerinin sorunları ve kazanımları değerlendirilmektedir.

Anahtar Kelimeler: Kent Konseyi, Katılım, Siyasal Katılım, Yönetişim.

ABSTRACT

Participation in management means that the public has a personal say in decision-making processes, practices and audits and plays an active role in this process. Today's democracies require the participation of local people in decisions made about their region, and many mechanisms are being created in this context. The new participation process, referred to as governance, is a management approach that brings together the private sector, non-governmental organizations and different groups in society at the center of government, so that the public is not excluded from managing together. Nowadays, one of the most important mechanisms created to increase the participation of local people in decisions in Turkey is city councils. City Councils have established their presence on a legal and institutional basis as a local mechanism to produce solutions to urban impasses in everyday life. The work of the city council, which is supposed to be established on the basis of political participation and broad representation, is important in terms of determining the direction of urban development in some way. In this study, the formation and activities of city councils established within the framework of Local Agenda 21 are examined. After the development process of city councils in Turkey, the legislation related to city councils and the effects of city councils on the public participation process have been revealed, the problems arising in the implementation process of city councils will be evaluated through the examples of city councils in different cities. As a mechanism of local participation, what are the functions of city councils in terms of political and managerial participation, their contribution to the democratic process is another dimension of the subject being studied. In shaping the participation culture, the emphasis on the governance string of city councils created on the basis of volunteerism through the effective participation of citizens, states and other participating associations is explained and the problems and achievements of city councils are evaluated.

Key Words: City Council, Participation, Political Participation, Governance.

THE EFFECT OF THE COVID-19 PANDEMIC ON THE PROCESS OF APPLICATION TO HEALTH INSTITUTION OF PATIENTS WITH ACUTE MYOCARDIC INFARTUS

COVID-19 PANDEMİSİNİN AKUT MİYOKARD İNFARKTÜSÜ GEÇİREN HASTALARIN SAĞLIK HİZMETLERİNE BAŞVURU SÜRECİNE ETKİSİ

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ÖZET

Amaç: Ülkemizde, COVID-19 pandemisi ile mücadelede alınan tedbirler kapsamında, çok gerekli olmadıkça hastane başvurularının azaltılması konusunda topluma çağrılar yapılmıştır. Bu çalışma, pandemi döneminde akut miyokard infarktüsü geçiren hastaların sağlık hizmetlerine başvuru sürecinin değerlendirilmesi amacıyla yapılmıştır.
Yöntem: Tanımlayıcı olarak gerçekleştirilen çalışmaya, Mart-Aralık 2021 tarihleri arasında, akut miyokard enfarktüsü nedeniyle sağlık kurumuna başvuran 116 hasta dahil edilmiştir. Veriler, hasta tanılama formu ile elde edilmiştir. Verilerin değerlendirilmesinde ortalama ve yüzdelik dağılım kullanılmıştır.
Bulgular: Hastaların yaş ortalaması 58.35±9.22 yıl olup, %78.4'ü 65 yaş altındadır. Katılımcıların %57.8'i erkek olup %44.8'i hale sigara içmekte ve %47.4'ü fazla kilolu, %43.1'i obezdir. Hastaların %53.4'ünün hipertansiyon, %40.5'inin diyabeti ve %25.9'unun kalp-damar hastalığı bulunmaktadır. Hastaların %54.3'ü ailesinde kalp hastalığı olan birey bulunduğunu belirtmiş olup %25'i daha önce miyokard enfarktüsü geçirdiğini ifade etmiştir. Hastaların akut miyokard enfarktüsü nedeniyle sağlık kurumuna ulaşma süresi ortalaması 106.34±150.44 dakikadır. Hastaların %6.9'u 30 dakikanın altında, %93.1'i ise 30 dakikanın üzerinde sağlık kurumuna başvuru yapmıştır. Hastaların %25.9'u COVID-19 pandemisi nedeniyle sağlık kurumuna başvuru süresinin uzadığını belirtmiştir. Hastaların COVID-19 pandemisi ile ilişkili sağlık kurumuna başvuru süresinin uzama nedenleri bulaşma korkusu (%86.7), aşısız olma (%10) ve kronik hastalığın bulunması (%3.3) olarak tespit edilmiştir.
Sonuç: Çalışmada COVID-19 pandemisinin akut miyokard enfarktüsü geçiren hastaların yaklaşık üçte birinde, sağlık kurumuna ulaşma süresini etkilediği belirlenmiştir.

Anahtar Kelimeler: COVID-19, miyokard infarktüsü, hastane başvurusu

ABSTRACT

Aim: Within the scope of the measures taken in the fight against the COVID-19 pandemic in our country, calls have been made to the society to reduce hospital admissions unless it is very necessary. This study was conducted to evaluate the process of application to the health institution of patients who had acute myocardial infarction during the pandemic.
Method: The descriptive study was conducted with 116 patients who applied to the health institution due to acute myocardial infarction between March and December 2021. The data were obtained with the patient identification form. Mean and percentage distribution were used in the evaluation of the data.
Results: The mean age of the patients was 58.35±9.22 years, and 78.4% were under 65 years of age. 57.8% of the participants are male, 44.8% still smoke, 47.4% are overweight and 43.1% are obese. 53.4% of the patients had hypertension, 40.5% had diabetes and 25.9% had cardiovascular disease. 54.3% of the patients stated that there was a family member with heart disease, and 25% stated that they had a previous myocardial infarction. The mean time for patients to reach the health institution due to acute myocardial infarction was 106.34±150.44 minutes. 6.9% of the patients applied to the health institution in less than 30 minutes, and 93.1% in more than 30 minutes. 25.9% of the patients stated that the time to apply to the health institution was extended due to the COVID-19 pandemic. The reasons for the prolongation of the patients' time to apply to the health institution associated with the COVID-19 pandemic were fear of contamination (86.7%), being unvaccinated (10%), and having a chronic disease (3.3%).
Conclusion: In the study, it was determined that the COVID-19 pandemic affected the time to reach the health institution in approximately one third of the patients with acute myocardial infarction.

Keywords: COVID-19, myocardial infarction, hospital admission

THE RELATIONSHIP WITH EMERGENCY SERVICE ADMISSION AND HOSPITALIZATION OF DIABETES EDUCATION IN PATIENTS WITH TYPE 2 DIABETES

TİP 2 DİYABETLİ HASTALARDA DİYABET EĞİTİMİNİN ACİL SERVİSE BAŞVURU VE HASTANEYE YATIŞ DURUMU İLE İLİŞKİSİ

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ÖZET

Amaç: Diyabet, her ne kadar bulaşıcı özelliğe sahip olmasa da, artan sıklığı ve komplikasyonları nedeniyle, günümüzde yaygın görülen ciddi kronik hastalıklardan biridir. Bu çalışma, son bir yıl içerisinde Türkiye'de diyabet eğitimi alan ve almayan hastalarda diyabete bağlı acil servise başvuru ve hastaneye yatış durumunu incelemek ve karşılaştırmak amacıyla yapılmıştır.
Yöntem: Tanımlayıcı ve karşılaştırmalı olarak tasarlanan çalışmaya, 565 tip 2 diyabet hastası dahil edilmiştir. Veriler, hasta tanılama formu ile elde edilmiştir. Verilerin değerlendirilmesinde ortalama, yüzdelik dağılım ve ki kare testi kullanılmıştır.
Bulgular: Hastaların yaş ortalaması 51.02±11.07 yıl olup, %87.4'ü 65 yaş altındadır. Katılımcıların %53.3'ü erkek ve %34.9'u ilkokul mezunudur. Hastaların diyabet süresi ortalaması 3.22±1.70 yıl olup HbA1c değeri ortalaması 9.61±2.36'dır. Hastaların %74.9'u son bir yıl içerisinde bireysel olarak diyabet eğitim hemşiresinden eğitim aldığını belirtmiştir. Hastaların %20.9'u son bir yıl içerisinde acil servise başvuru yaptığını, bu hastaların %18.6'sının ikiden fazla ve %79.7'sinin hiperglisemi nedeniyle başvurusunun olduğu belirlenmiştir. Hastaların %15.4'ünün son bir yıl içerisinde diyabet nedeniyle hastaneye yatış yaptığı ve yatış gün sayısı ortalamasının 8.60±8.43 olduğu tespit edilmiştir. Diyabet eğitimi alan ve almayan hastaların acil servise başvuru durumunun istatistiksel olarak anlamlı farklılık gösterdiği (χ^2=6.495; p=0.011), buna rağmen hastaneye yatış durumu arasında farklılık olmadığı bulunmuştur (χ^2=2.484; p=0.115).
Sonuç: Çalışmada diyabet eğitimi alma durumunun acil servise başvuru ile ilişkili olduğu, buna rağmen hastaneye yatış durumunu etkilemediği tespit edilmiştir. Tüm diyabetli hastalara, hastalık tanısı konulduktan itibaren sağlık profesyonelleri tarafından düzenli eğitim verilmesi önerilmektedir.

Anahtar Kelimeler: Tip 2 diyabet, diyabet eğitimi, acil servise başvuru

ABSTRACT

Aim: Although diabetes is not contagious, it is one of the most common serious chronic diseases due to its increasing frequency and complications. This study was carried out to examine and compare the cases of diabetes-related emergency service admission and hospitalization in patients who received and did not receive diabetes education in Turkey in the last year.

Method: The descriptive and comparative study was conducted with 565 type 2 diabetes patients. The data were obtained with the patient identification form. Mean, percentile distribution and chi-square test were used to evaluate the data.

Results: The mean age of the patients was 51.02±11.07 years, and 87.4% were under 65 years of age. 53.3% of the participants are male and 34.9% are primary school graduates**.** The mean duration of diabetes of the patients was 3.22±1.70 years, and the mean HbA1c value was 9.61±2.36. 74.9% of the patients stated that they received individual training from the diabetes education nurse in the last year. It was determined that 20.9% of the patients applied to the emergency department in the last year, 18.6% of these patients had more than two applications and 79.7% of them were due to hyperglycemia. It was found that 15.4% of the patients were hospitalized due to diabetes in the last year and the average number of hospitalization days was 8.60±8.43. It was found that there was a statistically significant difference between patients who received diabetes education and those who did not, ($\chi2$=6.495; p=0.011), but there was no difference between hospitalization status ($\chi2$=2.484; p=0.115).

Conclusion: In the study, it was determined that diabetes education was associated with admission to the emergency department, but it did not affect hospitalization. It is recommended that all diabetic patients receive regular training by healthcare professionals from the time they are diagnosed with the disease.

Keywords: Type 2 diabetes, diabetes education, emergency department admission

DISTRIBUTION OF VOWELS IN INDO-EUROPEAN ROOT IN PROBABILISTIC ASPECT. BAYES'THEOREM

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ABSTRACT

In the proposed research, probability theory is extrapolated to vocalic changes in the Indo-European root. The diagram of the normal distribution (Gaussian curve) is extrapolated to the distribution of vowel, which is limited in the field of the Hellwag's triangle by the cardinal phonemes I – A – U. The diagram highlights the fields of high articulatory training (when automatism is acquired) and low training (absence of automatism). Based on the diagram, the formula for the probability of vocal transitions is derived: P (A → E) > P (A → I), or P (A → O) > P (A → U), which is organically related to the equation: t i → a = t i → e + t e → a, or t a → u = t o → a + t o → u.

Using the material of the Ukrainian, English and Spanish languages, an attempt was made to calculate the probability of the vowels distribution in the roots in diachrony of these languages using the Bayes' theorem. This theorem is traditionally used to determine the probability of events that occur in nature (physical phenomena) that do not depend on human volitional efforts. The articulation of sounds is exclusively a volitional act of a person. The speaker specifically tries to make great efforts to accurately pronounce the sound. The accuracy of pronunciation depends on many purely psychic-mental factors, which cannot be calculated using the classic Bayes' theorem as follows: the speaker's hearing acuity, ability to repeat what he or she heard, physiological features of the structure of passive and active articulatory organs, mental state, temperament, articulatory training etc. Therefore, a special coefficient is proposed to the classic Bayes' theorem, which makes it possible to calculate the numerical indicators of the etymological probability of the appearance of certain vowels in the roots of the Indo-European languages. The truth of the diagram and the modified Bayes' theorem are confirmed by a large number of examples from the Indo-European languages. In addition to explaining the regularities of vocal changes, the diagram and formulas can serve as a reliable key for the correct etymology of many Indo-European tokens.

Key words: linguistics, vowel alternation, Hellwag's triangle, probability theory, Bayes' theorem.

COMPARATIVE ASSESSMENT OF GESTATIONAL WEIGHT GAIN, SUPPLEMENT USED AND IRON STATUS AMONG PREGNANT WOMEN FROM PUBLIC AND PRIVATE HOSPITALS IN KADUNA STATE, NIGERIA

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ABSTRACT

Background: Pregnancy is a period of increased demand for energy and iron particularly in the third trimester and when control measures are not taken which may result to low/ and or currently iron excesses, abnormal gestational Weight gain leading to consequences such as consequences of these indices increase rates of morbidity, mortality and impairs National socioeconomic development. Several strategies have been taken control and prevent the menace but the millennium development goal 4 and 5 targets are yet to be met.

Objective: To compare Gestational Weight Gain, supplement use, iron status and association between hematological characteristics and bio-data among pregnant women aged 20-49 years in public and private hospital

Methods: A cross sectional descriptive survey design was used. Sample size of 207 subjects was determined and selected using Yamane method and systematic random sampling technique respectively. Structure questionnaire, weighing scale, height meter rule, and laboratory analysis were the tools for data collection. Analytical method used was t-test (ANOVA) and bivariate for association and significant difference at $p<0.05$ with SPSS version 16.0.

Results: Abnormality in GWG/week among women from the private hospital higher (97.7% (below (20.9%) and above (75.7%)) than in the public hospital (87.8% (14.6% below, 73.2% above normal range). More (87.8%) from public hospital used supplement daily than those from the private (74.4%0 hospital. Higher (52.8%) rate of women with hemoglobin below normal value (Hb <11g/dl) in public hospital than in the private (7.7%), more women (27.0%) and few (13.0%) in the public hospital had Hb above normal (Hb>11g/dl) value. Serum Iron, Serum ferritin, serum transferrin overload was prevalent in a high rate (14.01% - 42.99% and 11.11%-32.37%) of women in the second and third trimesters, C-RP was within normal value (0.5mg/dl) across trimesters. More women in the second (29.27%) trimester had low Hb level than those in the third (21.74%) trimester and first trimester 8.69%. Weak correlation (r=0.1 to- 0.3) exists between hematological and bio-data

Conclusion: Abnormal high rates of abnormal Gestational Weight Gain and Hb within normal values at high percentage in the private hospitals, among women from private hospital while supplements used low hemoglobin level higher in public hospital, more women low in hemoglobin and iron overload in Serum Iron, Serum ferritin, and serum transferrin were in the second and third trimester.

Recommendation There is an urgent need to review the services at health facilities towards testing for iron status of pregnant women and supplementation to be individualized.

Key words: Pregnancy, Gestational Weight gain, supplement, iron status,

THE CORRELATION OF DISPROPORTIONALITY OF ELECTORAL DISTRICTS AND EQUALITY PRINCIPLE IN PARLIAMENTARY ELECTIONS OF GEORGIA

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The principle of equality in elections is one of the manifestations of the political equality of citizens, the guarantees of which are the equal manifestation of votes, equal electoral powers and equal opportunities. One of the important determinants of ensuring the above-mentioned principle is the distribution of election constituencies according to international standards.
After gaining independence, 35 elections were held in Georgia, including 10 parliamentary elections. After each election, specific recommendations were issued by international organizations about the necessary changes, one of which was the demarcation of electoral district boundaries.
Determining the boundaries of electoral districts ensures the guarantee of the principle of equal electoral rights. This, in turn, will affect not only the equality of electoral rights of the entire population, but will also improve the representation of ethnic minorities in the Parliament of Georgia.
The presented paper discusses the legislative changes related to the demarcation of electoral districts after the independence of Georgia and analyzes the impact of the mentioned on the election results.

Key Words: Disproportionality, Electoral Districts, Equality Principle, Parliamentary Elections, Georgia

ON GOULD-HOPPER BASED FULLY DEGENERATE TYPE2 POLY-FROBENIUS-GENOOCHI POLYNOMIALS WITH A q PARAMETER

GOULD-HOPPER TABANLI TAMAMEN DEJENERE 2. TİP q PARAMETRELİ POLY-FROBENİUS-GENOCCHİ POLİNOMLARI

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ÖZET
Özel polinomlar ve sayılar, fizik, matematik, uygulamalı bilimler, mühendislik ve diferansiyel denklemler, sayı teorisi, fonksiyonel analiz, kuantum mekaniği, matematiksel analiz, matematiksel fizik ve diğer ilgili araştırma alanları gibi bilimlerin çok çeşitli alanlarında büyük öneme sahiptir. Örneğin, Bernoulli polinomları ve sayıları, asal sayıların dağılımı ile bağlantısı olan Riemann zeta fonksiyonu ile yakından ilişkilidir. Özel polinomlar teorisindeki en önemli polinomlardan bazıları Gould-Hopper, Bell, Euler, Bernoulli, Hermite ve Genocchi polinomlarıdır. Son zamanlarda, yukarıda bahsedilen polinomlar ve bunların çeşitli genellemeleri, birçok fizikçi ve matematikçi tarafından yoğun bir şekilde düşünülmüş ve araştırılmıştır. Son zamanlarda, polylogaritma fonksiyonu ve çok üslü fonksiyon tarafından genelleştirilen birkaç özel polinom ve dejenere üstel fonksiyon tarafından genişletilen çeşitli özel polinomlar birçok yazar tarafından incelenmiştir. Bu çalışmada, Gould-Hopper tabanlı tamamen dejenere 2. Tip q parametreli poly-Frobenius-Genocchi polinomlarını tanımlayacağız ve bazı özelliklerini vereceğiz. Ayrıca, yineleme ilişkileri, simetrik özellik ve kapalı toplama formülleri dahil olmak üzere bu polinomlar için çok çeşitli ilişkiler türeteceğiz.
Anahtar Kelimeler: Gould-Hopper polinomları, Frobenius-Genocchi polinomları, poly-üstel fonksiyonu.

ABSTRACT
Special polynomials and numbers possess much importance in multifarious areas of sciences, such as physics, mathematics, applied sciences, engineering, and other related research fields covering, differential equations, number theory, functional analysis, quantum mechanics, mathematical analysis, mathematical physics, and so on. For example, Bernoulli polynomials and numbers are closely related to the Riemann zeta function which possesses a connection with the distribution of prime numbers. Some of the most significant polynomials in the theory of special polynomials are the Gould-Hopper, Bell, Euler, Bernoulli, Hermite, and Genocchi polynomials. Recently, the aforesaid polynomials and their diverse generalizations have been densely considered and investigated by many physicists and mathematicians. Recently, several special polynomials generalized by the polylogarithm function and polyexponential function and diverse special polynomials extended by the degenerate exponential function have been studied by many authors. In this study, we introduce the Gould-Hopper based fully degenerate type2 poly-Frobenius-Genocchi polynomials with a q parameter and provide some of their properties. Moreover, we derive multifarious correlations and identities for these polynomials, including recurrence relations, symmetric property, and implicit summation formulas.
Keywords: Gould-Hopper polynomials, Frobenius-Genocchi polynomials, polyexponential function.

A FIELD STUDY ON THE DETERMINATION OF BAĞLAMA PLAYING TERMS USED IN BAĞLAMA EDUCATION BUT NOT IN THE LITERATURE

BAĞLAMA EĞİTİMİNDE KULLANILAN FAKAT ALANYAZINDA OLMAYAN BAĞLAMA ÇALIM TERİMLERİNİN BELİRLENMESİNE DAİR BİR ALAN ÇALIŞMASI

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ÖZET

Terminoloji bir sözlükten ziyade terimlerin açıklandığı terim bilimidir. Özellikle aynı meslek dalında çalışan insanların ortak bir terminoloji kullanıyor olması o meslek grubundaki işleri kolaylaştırır. Bu yüzden hem icra ettiğimiz meslekte kendimizi geliştirme hem de talep edilen ihtiyaçlara geri dönüt verebilme anlamında mesleki terminolojiye hakim olmak, mesleğin sürekliliği ve ortaya çıkacak olan ürünlerin kalitesi açısından büyük önem taşır. Terminolojide karşılaştığımız terimlerin tanımı o mesleğe özgü bir tanımdır diyebiliriz. Meslek dışındaki bireylerin aynı terimi anlaması veya meslek grubundaki kişiler ile aynı şeyi anlaması beklenemez. Bu yüzden mesleki alanlarda kullanılan terimler yalnızca o mesleği icra eden kişiler tarafından anlaşılır ve kullanılabilir. Sonuç olarak belirli bir meslek grubunda kullanılan terimlerin tamamına mesleki terminoloji denir.

Bağlama çalgısının mesleki müzik eğitimi alanına geçmesi ile birlikte, müzik terminolojisinin alt dalı diyebileceğimiz bağlama terminolojisine ihtiyaç doğmuştur. Mesleki bağlama eğitiminde özellikle meşk yönteminin kullanılması durumunda usta ve çırağın aynı terimleri kullanıp anlamaları beklenir. Bir alana özgü terminolojinin kullanılmasının, o alana dair eğitimin daha sistematik ve planlı olmasına sebep olur. Bu doğrultudan yola çıkılarak yapılan bu çalışma; uygulamada fiilen kullanılan fakat alanyazında olmayan bağlama çalım terimlerini mesleki bağlama eğitimine kazandırmayı amaçlamıştır.

Bu sebepten dolayı yapılan bu araştırmada öncelikle uzman kişiler eşliğinde yarı yapılandırılmış görüşme formu oluşturulmuştur. Nitel araştırma yöntemlerinden biri olan olgubilim yöntemi ile yürütülmüş olan bu araştırmada Doğu Anadolu Bölgesinde lisans düzeyi mesleki bağlama eğitimi verilen kurumlarda bağlama eğitmenleri ile görüşülmüştür. Yapılan görüşmelerin bir bölümü yüz yüze yapılırken bir bölümü ise Covid-19 salgını dolayısıyla online olarak yapılmıştır. Görüşmeler sonucunda ise uygulamada fiilen kullanılan fakat alanyazında herhangi bir açıklaması bulunmayan 8 adet bağlama çalım teriminin varlığına ulaşılmıştır. Alanda uzman eğitmenlerle yapılan görüşmelerle bu 8 adet bağlama çalım terimi analiz edilip görsellerle desteklenerek açıklamaları yapılmıştır.

Anahtar Kelimeler: Bağlama eğitimi, bağlama çalım terimleri, bağlama çalım teknikleri

ABSTRACT

Terminology is the science of terms in which terms are explained rather than a dictionary. The fact that people working in the same profession use a common terminology makes the work in that profession easier. Therefore, having a good command of the professional terminology in terms of both improving ourselves in the profession we perform and being able to give feedback to the requested needs is of great importance for the continuity of the profession and the quality of the products that will emerge. We can say that the definition of terms we encounter in terminology is a definition specific to that profession. Individuals outside the profession cannot be expected to understand the same term or to understand the same thing as people in the profession group. Therefore, the terms used in professional fields can only be understood and used by those who practice that profession. As a result, all of the terms used in a certain occupational group are called occupational terminology.

With the transfer of the baglama instrument to the field of professional music education, the need for baglama terminology, which we can call a sub-branch of musical terminology, has arisen. In vocational baglama training, especially when the meşk method is used, the master and the apprentice are expected to use and understand the same terms. The use of terminology specific to a field causes the education in that field to be more systematic and planned. Based on this direction, this study; It aimed to bring the terms of baglama playing, which are actually used in practice but not in the literature, to vocational baglama education.

For this reason, in this study, a semi-structured interview form was created in the presence of experts. In this research, which was carried out with the phenomenology method, which is one of the qualitative research methods, the baglama trainers were interviewed in the institutions where vocational baglama training was given at the undergraduate level in the Eastern Anatolia Region. While some of the interviews were conducted face to face, some of them were made online due to the Covid-19 outbreak. As a result of the interviews, it was found that there are 8 baglama-playing terms that are actually used in practice but do not have any explanation in the literature. Through interviews with expert trainers in the field, these 8 baglama playing terms were analyzed and explained with visuals.

Keywords: Baglama training, baglama playing terms, baglama playing techniques.

AN EXAMPLE FIELD STUDY ON THE DETERMINATION OF BALGING TERMS THAT HAVE THE SAME MEANING BUT WITH DIFFERENT NOMINATIONS

AYNI ANLAMA GELEN FAKAT FARKLI İSİMLENDİRMELERİ OLAN BAĞLAMA ÇALIM TERİMLERİNİN BELİRLENMESİNE DAİR ÖRNEK BİR ALAN ÇALIŞMASI

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ÖZET

Evrensel bir dil olarak kabul edilen müziğin de her dil gibi kendine göre yazısı ve kuralları bulunmaktadır. Bu kurallarının en çok kullanıldığı alan ise notalardan oluşan eğitim-öğretim materyalleri olarak bilinmektedir. Müzik eğitiminde özellikle çalgı eğitimi alanında eğitimci ve öğrencinin meşk yapma esnasında aynı dili (müzik dilini) konuşması oldukça önemlidir. Müzik alanında evrensel bir dil kullanılmasının yanı sıra, özellikle meşk esnasında evrensel olmayan yani mesleki terimlerin kullanıldığını duymakla beraber aynı anlama gelen bazı terimlerin farklı isimlendirmelere sahip olduğunu da duymak mümkündür ki yapılan bu araştırma; alanyazında aynı isimde var olan bağlama çalım terimlerini tespit ederek belirlenmesini amaçlamıştır.

İlgili alanyazın taraması yapıldıktan sonra bahsi geçen konu ile ilgili herhangi bir çalışmanın yapılmadığı görülmüştür. Bu sebeple yapılan bu araştırmada; ilk olarak alanda uzman kişilerle beraber hazırlanmış olan yarı yapılandırılmış görüşme formu hazırlanmıştır. Nitel araştırma yöntemlerinden biri olan olgubilim çalışmasıyla yapılan bu araştırmada, önceden hazırlanmış olan yarı yapılandırılmış görüşme formu; Doğu Anadolu Bölgesindeki lisans düzeyi mesleki bağlama eğitimi verilen kurumlarda görev yapan bağlama eğitmenlerine uygulanmıştır. Yapılan görüşmelerin bir bölümü yüz yüze yapılırken bir bölümü ise Covid-19 salgını dolayısıyla online yapılmıştır. Yapılan tüm görüşmeler sonucunda mesleki bağlama eğitiminde kullanılan aynı anlama gelen fakat farklı isimlendirmeleri olan 3 adat bağlama çalım terimine ulaşılmıştır. Çalışma sonucunda mute tekniğine; perdeleme veya gölgeleme, tel ayrıma tekniğine; kıstırma, takma tezene tekniğine ise yumuşatma denildiği anlaşılmıştır. Bu 3 bağlama çalım terimi alanda uzman bağlama eğitmenlerinin cevapları doğrultusunda analiz edilip yorumlanmıştır.

Anahtar Kelimeler: Bağlama eğitimi, bağlama çalım terimleri, bağlama çalım teknikleri.

ABSTRACT

Music, which is accepted as a universal language, has its own script and rules like any other language. The area where these rules are used the most is known as educational materials consisting of notes. In music education, especially in the field of instrument education, it is very important that the educator and the student speak the same language (musical language) during the practice. In addition to the use of a universal language in the field of music, it is possible to hear that non-universal, i.e. professional terms, are used especially during meşk, but it is also possible to hear that some terms with the same meaning have different names. aimed to determine the terms of baglama playing with the same name in the literature.

After reviewing the relevant literature, it was seen that no study was conducted on the aforementioned subject. For this reason, in this study; First, a semi-structured interview form prepared with experts in the field was prepared. In this research, which was conducted with phenomenology, which is one of the qualitative research methods, a semi-structured interview form prepared in advance; It was applied to baglama trainers working in institutions where undergraduate level vocational baglama training is given in the Eastern Anatolia Region. While some of the interviews were conducted face to face, some of them were made online due to the Covid-19 outbreak. As a result of all the interviews, 3 baglama playing terms with the same meaning but different nomenclature used in vocational baglama training were reached. As a result of the study, the mute technique; shielding or shading, wire separation technique; It has been understood that the technique of pinching and the technique of tacking is called softening. These three baglama playing terms were analyzed and interpreted in line with the answers of the baglama trainers who are experts in the field.

Keywords: Baglama training, baglama playing terms, baglama playing techniques.

THE SIDE EFFECTS OF BREAST CANCER RADIOTHERAPY

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ABSTRACT

Objective: To identify the following positive correlations: between radiotherapy and side effects (fatigue and exhaustion, loss of appetite, weight loss, nausea and vomiting) and between radiotherapy and emotional reactions (feelings of helplessness, fear, lethargy, hypoactivity and anger).

Research methods: Using a structured questionnaire, an analysis of research data from the field that is the subject of the paper was performed. In order to test hypotheses H_1 (a positive correlation between radiation therapy and side effects) and H_2 (a positive correlation between radiation therapy and emotional reactions), Kendall's τ correlation coefficient was used.

Results: The unit of observation of the research were patients with verified breast cancer, who underwent radiotherapy from July 1 to September 30, 2020. The study included 50 patients with pathohistologically verified breast cancer. Based on the obtained results, hypothesis H_1 was partially accepted, *i.e.*, there is a significant correlation between radiation therapy and loss of appetite, and hypothesis H_2 was partially accepted, *i.e.*, there is a positive correlation between radiation therapy and anger.

Conclusion: The side effects of radiotherapy may occur during radiation therapy. Most often, the side effects appear on the skin in the form of redness. Most patients experienced side effects during oncological treatment, especially during and immediately after the end of radiation therapy. These side effects were diluted over the course of the first year following the end of treatment, to the extent that most of them disappeared almost completely. Late complications of radiation treatment of breast cancer, visible on the skin after a mastectomy and sparing operations, can occur after several years.

Keywords: Radiotherapy, Breast Cancer, Side Effects, Emotional Reactions

CYTOTOXICITY ANALYSIS OF TWO DIFFERENT TREATED PORCINE DERMAL MATRICES

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ABSTRACT

Aim: The aim of the present study was to compare the direct and indirect cytotoxicity of a porcine dried acellular dermal matrix (PDADM) versus a porcine hydrated acellular dermal matrix (PHADM) in vitro. Both are used for periodontal and peri-implant soft tissue regeneration.

Materials and methods: Two standard direct cytotoxicity tests—namely, the Trypan exclusion method (TEM) and the reagent WST-1 test (4-3-[4-iodophenyl]-2-[4-nitrophenyl]-2H-[5-tetrazolio]-1,3- benzol-desulphonated)—were performed using human primary mesenchymal stem cells (HPMSCs) seeded directly onto a PDADM and PHADM after seven days. Two standard indirect cytotoxicity tests—namely, lactate dehydrogenase (LTT) and MTT (3-[4,5-dimethyl-2-thiazolyl]-2,5-diphenyl- 2H-tetrazoliumbromide)—were performed using HPMSCs cultivated in eluates from the matrices incubated for 0.16 h (10 min), 1 h, and 24 h in a serum-free cell culture medium.

Results: The WST and the TEM tests revealed significantly lower direct cytotoxicity values of HPMSCs on the PHADM compared with the PDADM. The indirect cytotoxicity levels were low for both the PHADM and PDADM, peaking in short-term eluates and decreasing with longer incubation times. However, they were lower for the PHADM with a statistically significant difference ($p < 0.005$).

Conclusions: The results of the current study demonstrated a different biologic behaviour between the PHADM and the PDADM, with the hydrated form showing a lower direct and indirect cytotoxicity.

Keywords: cytotoxicity; cytocompatibility; acellular matrices; porcine dermal matrices; pre-hydrated matrix; dried form matrix.

HORIZONTAL SUPPORT FOR TEACHERS THROUGH MODERN APPROACHES

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Abstract

This work is focused on the specific need of the pedagogical experts of support, which reflects adequately the challenges of the hectic school agenda. It analyses some of the contemporary opportunities given by the technologies and mobility and upgrades them with specific good practices.

The material highlights pedagogical supervision as a modern opportunity for the educators and underlines the profile of the good teacher with its important meaning for the growing and quickly developing society.

After exposing challenges and possible answers for the teacher, some conclusions are offered not only to the educational management, but also to the pedagogical experts, local community, other supporting professions and the professional community in education in general.

Key words: supervision, INEDU, educational management, support for teachers, professional development

ANTITHROMBOTIC AND ANTICOAGULANT PROPERTIES OF LOCAL CULTIVATED FRUITS USED IN CARDIOPREVENTION

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ABSTRACT

Black chokeberry (Aronia melanocarpa) is a rich local source of molecules, extremely bioactive offering an excellent effect of cardioprotection among other fruits, used in both primary and secondary prevention of cardiovascular diseases. The high content in polyphenols and their variability are very important for their activities related to a healthy lifestyle. Black chokeberry exhibited strong anticoagulant properties in vitro, by prolonging blood clotting times (APTT, PT and TT) and by decreasing the velocity of Fibrin polymerization in human plasma. They have also a strong action on clot formation and fibrinolysis in patients with inherited or acquired hyperhomocysteinemia. Black Chokeberry has proved to possess inhibiting propreties in the process of platelet aggregation. The Aronia extract decreased in vitro several steps the platelet activation and the adhesion of the platelets to the molecules of Collagen. Moreover, it acts by decreased the production of Radical Oxygen Species (ROS) both in resting platelets and in those already activated by Thrombin.
We can conclude that Black chokeberry is an extremely rich fruit cultivated in the Balkans and the Black Sea regions that is offering an excellent cardioprotection. Based on actual scientific studies, it should be included in a healthy daily diet. However, much more research is needed in order to completely understand the exact mechanisms, as well as the entire actions of Aronia melanocarpa, especially in vivo. Complete bioavailability studies are required concerning all the Aronia bioactive molecules.

Keywords: Black chokeberry, cardioprotection, anticoagulant, antithrombotic

THE ROLE OF HOUSEHOLDS AND NON-PROFIT ORGANIZATIONS IN HELPING THEM FINANCING THE STATE'S GROSS CONSOLIDATED DEBT IN THE EUROPEAN UNION

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ABSTRACT

The gross consolidated debt of the states increased in the European Union member states in 2020 and 2021 as well. The outbreak of COVID-19 epidemic played a decisive role in the increase of the public debt. State debts rose because the states supported households and companies due to the pandemic, as their incomes decreased due to the crisis. However, due to increase subsidies and declining production, the state's budget balance worsened, and due to filling the rising deficit, the state debt increased robustly. The study will analyze the role of two creditors of the public debt, namely households and non-profit organizations, in 2020-2021. From the statistical data analysis, it is clear that there are very significant differences between the member countries in proportion to which households and non-profit organizations finance the gross consolidated public debt. In some member countries, households and non-profit organizations participate in the financing of public debt significantly, while in other member countries, it is negligible. Due to the increase in debt financing costs and the sensitive reactions of foreign investors, member countries with a significant amount of public debt will be forced in the future to increase their borrowing from households in their own countries and from non-profit organizations that help them.

Keywords: Public debt, Financing, Households, European Union

INTERNALLY DISPLACED YAZIDE WOMEN IN NORTHERN IRAQ: PTSD AND HORMONAL EVALUATION

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ABSTRACT

ACTH, adrenaline and CRF concentrations according to PTSD severity were analyzed in women survivors of genocide-related events after ISIS attack on Iraq in 2014. A total of 120 women were classified into three groups (n=30 per group) as follows: Negative control = healthy individuals living outside the camps, Positive control = healthy individuals living inside the camps and PTSD group = individuals diagnosed with PTSD. PTSD diagnosis was done applying the PTSD DSM-5 (PCL-5) scale. The PTSD group was then categorized into Moderate, Severe and Extreme based on disease severity. Hormonal serum concentrations were determined by ELIZA. In the PTSD group ACTH, adrenaline and CRF were increased by 43%, 43% and 51%, respectively, compared to negative control ($p<0.01$). Increase in ACTH (15%), adrenaline (12%) and CRF (24%) was observed in PTSD group compared to positive control ($p<0.01$). The healthy individuals living inside the camps showed increased concentrations of CRF (21%), adrenaline (28%) and ACTH (24%) compared to healthy people living outside the camps ($p<0.05$). As the severity of PTSD progresses, CRF (26%, $p<0.05$) and adrenaline (50%, $p<0.05$) were increased, however ACTH concentration decreased (14%) ($p<0.01$). Our preliminary results are corroborating with the hypothesis that PTSD leads to alteration of hypothalamic-pituitary-adrenal axis response resulting also in increased release of adrenaline. The results also suggest a correlation between symptoms severity and HPA axis imbalance in patients with PTSD.

Keywords: Posttraumatic stress disorder; Trauma; HPA axis, ACTH, CRF; Adrenaline; Biomarkers.

COBALT PORPHYRINOID COMPLEX (B12) WITH OPTIONAL NON-PHOTODYNAMIC ANTICANCER ACTIVITY

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ABSTRACT

Cobalt corrin complexes known as cobalamins and the vitamins B12 are among the only metal-containing vitamins with typical for photosensitive compounds cyclic tetrapyrrolic structure. This structure suggests the ability for photosensitizing action at specific irradiation spectrum for cobalamins (361 nm). The difference with the related macrocyclic tetrapyrroles is that this is the only natural Co(II) compound possessing a metal – carbon bond. The non-light catalytic action of cobalamins is due to 2-electron reduction of oxygen to hydrogen peroxide and 4-electron reduction to water. The statement of this behavior depends on the structural characteristics such as the axial bulky substitution which incites advanced activity and high selectivity for oxygen reduction. In the present study a natural cyanocobalamin was investigated for the ability to participate in the photosensitive reaction with perspectives for usage as photosensitizer in the curative procedure PhotoDynamic Therapy (PDT). The theory said that the porphyrinoid structured compounds can initiate the photodynamic action at specific conditions. PDT protocol was applied in comparison manner to the dark and light controls. The *in vitro* studies were carried out on cancer cell lines in comparison to the healthy cells suggesting selectivity. The lack of photodynamic efficiency of cobalamin was observed but the dark cytotoxic efficiency was significant for the range of treatment conditions. The optical characteristics of absorption and fluorescence and singlet oxygen generation were studied in biocompatible solvent. In vitro photodynamic studies on tumor versus normal cell lines suggested a promising efficiency at micromolar concentrations of the studied natural cyanocobalamin.

Keywords: Natural photosensitizers, cobalamins, photodynamic action, catalytic mechanism; *in vitro* cytotoxicity, tumor cells

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FEATURES OF DOMESTIC REGULATION OF SPECIFIC CASE MUTUAL AGREEMENT PROCEDURE ON THE BASIS OF DOUBLE TAXATION TREATIES IN UKRAINE

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ABSTRACT

Ukraine has concluded more than 70 double taxation treaties (DTTs). Their main purposes are elimination of double taxation as well as prevention of tax evasion and avoidance or double non-taxation. Their application requires interpretation which itself might be considered as an art despite the fact of being subject to legal rules. Such situation might be ended in tax disputes where taxpayers and competent authorities are on opposite positions in relation to interpretation of specific provisions of DTTs. In this scenario, all DTTs concluded by Ukraine propose taxpayers an opportunity to initiate specific case mutual agreement procedure (MAP) between competent authorities aimed at resolving dispute on taxation or probable taxation not in accordance with the treaty provisions. Nevertheless, the Ukrainian taxpayers had never directly tried to apply for this procedure before 2021 due to the absence of domestic legal regulation on MAP. The situation changed with adoption of the changes to the Tax Code of Ukraine dated 16 January 2020 and the Order of Ministry of Finance of Ukraine (MoF) No. 820 dated 30 December 2020 but new provisions also include rules that might negatively impact on MAP as dispute resolution mechanism. For example, it does not clearly identify the right of taxpayers to initiate specific case MAP if taxation not in accordance with the DTT's provisions has not been charged or notified to him even if this approach might be inconsistent with the position of the OECD. The purpose of this study is to define features of domestic legal regulation of MAP in Ukraine in the context of international standards adopted by the OECD

Keywords: Double Taxation Treaties, Tax Dispute Resolution, Mutual Agreement Procedure, Domestic Regulation, Ukraine

PROBLEMS INHIBITING MATHEMATICS EDUCATION IN PRIMARY SCHOOLS

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Abstract

The study focused on the problems inhibiting mathematics education in primary schools in Kontagora, Niger State. Descriptive survey research design was adopted. Five research questions guided the study. The population of the study constitutes of all primary schools mathematic teachers from both public and private schools in the local government area. Purposive sampling technique was used to select two hundred respondents comprising of one hundred and forty mathematics teachers from public schools; and sixty mathematics teachers from private schools. A questionnaire titled problems inhibiting mathematics education questionnaire "PIMEQ" contains the question item to be answered using four (4) point Likert's scale for data collection. The instrument was validated by experts in mathematics education from Federal College of Education, Kontagora and administrator in the Zonal Education office. The instrument was pilot tested with a reliability coefficient of 0.701 using Cronbach alpha (α=20). Data collected was analysed using descriptive statistics of frequency distribution table and mean response to answer the research questions. Results of the study indicated that mathematics phobia, lack of instructional materials, lack of mathematics laboratory, Language of instruction, poor teaching strategies, lack of relevant textbooks, over population, dilapidated classroom; and so on were problems inhibiting the teaching and learning mathematics in primary schools. It was recommended that adequate number of qualified teachers per refurbished classroom for students should be employed and encouraged to possess relevant mathematics textbook for the purpose of arousing interest; gaining knowledge, improve their academic activities.

Keywords: Mathematics Education, Language, Classroom, Mathematics Textbook, and Primary Schools

IMMUNIZATION COVERAGE AGAINST DISEASES AMONG CHILDREN AGED FIVE YEARS AND BELOW IN MAWOGOLA HEALTH SUB-DISTRICT, SEMBABULE DISTRICT, UGANDA.

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Abstract

This study was conducted to understand the factors affecting complete immunization coverage and dropout rates in Mawogola health sub-district, Sembabule district, Uganda. It was a cross-sectional study among caretakers of children 1-5 years of age in Sembabule District, Mawogola health sub-district. Multi stage sampling was used to select the sub-counties to include in the study. Total of 266 caretakers of children aged 1-5 years were sampled from 12 clusters consisting of villages in the selected sub-counties and interviewed using a semi-structured questionnaire. Data was collected on the caretaker socio-demographic characteristics, children immunization history, and factors affecting immunization dropout rates. Results showed that the crude immunization coverage (by card and history) for BCG, DPT I, DPT III, OPV III and Measles were 92.7%, 90.9%, 72.7%, 70.9% and 65.7% respectively. The DPTI-III and BCG-measles dropout rates were 20% and 29.1% respectively. The significant predictors for coverage at multivariate analysis included care-taker knowledge of age at which the child begins and completes immunization, distance of immunization post, and the time spent waiting at the immunization area before being worked on. The significant risk factor for immunization drop out in the health sub-district was illiteracy among the caretakers. There is a high DPTI-III and BCG-measles dropout rate in Mawogola Health Sub-District. The dropout rate was found to be 42.5% overall in the sub-district hence, full immunization coverage among children aged 1-5 years is very low in the Mawogola HSD. The study recommended that government should include caretakers in the design of immunization programs through sensitization.

Key words: Complete Immunization Coverage, Dropout Rate, Care-taker Knowledge

IS ORGANIZATIONAL CITIZENSHIP BEHAVIOR EFFECTIVE IN INNOVATIVE WORK BEHAVIOR?

İNOVATİF İŞ DAVRANIŞINDA ÖRGÜTSEL VATANDAŞLIK DAVRANIŞI ETKİLİ OLUR MU?

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ÖZET

Örgütsel Vatandaşlık Davranışı, çalışanlar tarafından sergilenmesi istenilen bir davranış olmasından dolayı son yıllardaki akademik çalışmalarda pek çok değişken ile ilişkisi incelenmiş kavramlardan bir tanesidir. Ancak literatürde, örgütsel vatandaşlık davranışı ve inovatif iş davranışı ilişkisini ele alan çalışmaların sayısını oldukça az olduğu görülmüştür. Bilindiği üzere bütün örgütler, örgütsel vatandaşlık davranışı yüksek çalışanlarla çalışmayı isterler. İnovatif iş davranışı ise günümüz iş dünyasında örgütlerin rekabet avantajı elde etmesinde önemli bir anahtar olarak ifade edilmektedir. Bu araştırmanın konusu, çalışanların sahip olduğu örgütsel vatandaşlık davranışı ile ilgili algılarının, çalışanların inovatif iş davranışlarına etkisinin olup olmadığını araştırmaktır. Araştırma, Türkiye'de Akdeniz Bölgesinde bulunan bir üniversitenin Teknokent'te faaliyetlerini sürdüren firmaların çalışanlarına uygulanmıştır. Araştırma verileri anket tekniği yöntemiyle elde edilmiştir. Veri toplayabilmek amacıyla Organ ve Konovsky (1989) tarafından oluşturulan Basım ve Şeşen (2006) tarafından Türkçe'ye uyarlanan ölçeği, Scott ve Bruce (1994) tarafından oluşturulan inovatif iş davranışı ölçeği kullanılmıştır. Araştırma sonucunda, basit tesadüfi örneklem yoluyla elde edilen 158 adet anket verisi analiz edilmiştir. Elde edilen verilere, SPSS istatistik programı ile katılımcıların demografik özelliklerine ilişkin frekans dağılımlarına, faktör analizi ve güvenirlilik analizi sonuçlarına yer verilmiştir. Katılımcıların örgütsel vatandaşlık davranışı ile inovatif iş davranışı arasındaki ilişkiyi ve etkiyi belirlemek amacıyla korelasyon ve regresyon analizleri sonuçlarına yer verilmiştir.

Anahtar Kelimeler: İnovatif İş Davranışı, Örgütsel Vatandaşlık Davranışı, Teknokent

ABSTRACT

Organizational Citizenship Behavior is one of the concepts whose relationship with many variables has been examined in recent academic studies, since it is a desired behavior by employees. However, in the literature, it has been observed that the number of studies dealing with the relationship between organizational citizenship behavior and innovative work behavior is quite low. As it is known, all organizations want to work with employees with high organizational citizenship behavior. Innovative work behavior is expressed as an important key for organizations to gain competitive advantage in today's business world. The subject of this research is to investigate whether the perceptions of the employees about organizational citizenship behavior have an effect on the innovative work behaviors of the employees. The research was applied to the employees of the firms operating in the Technopark of a university located in the Mediterranean Region of Turkey. The research data were obtained by the survey technique method. In order to collect data, the scale developed by Organ and Konovsky (1989) and adapted into Turkish by Basım and Şeşen (2006) and the innovative work behavior scale created by Scott and Bruce (1994) were used. As a result of the research, 158 survey data obtained through simple random sampling were analyzed. The data obtained were included in the frequency distributions of the demographic characteristics of the participants, factor analysis and reliability analysis results with the SPSS statistical program. The results of correlation and regression analyzes are included in order to determine the relationship and effect between organizational citizenship behavior and innovative work behavior of the participants.

Keywords: Innovative Work Behavior, Organizational Citizenship Behavior, Technopark

THE EFFECT OF BLAST FURNACE SLAG-ADDİTİVE CONCRETES ON ROAD PAVEMENT THICKNESS FOR DIFFERENT BASE SOİLS

YÜKSEK FIRIN CÜRUFU KATKILI BETONLARIN FARKLI TABAN ZEMİNLERİ İÇİN YOL KAPLAMA KALINLIĞINA ETKİSİ

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ÖZET

Günümüzde, Yüksek Fırın Cürufu (YFC), uçucu kül ve çelik lif gibi katkılar betonun özelliklerini iyileştirmek amacıyla çalışmalarda sıklıkla kullanılmaktadır. Özellikle, önemli çevre sorunlarına neden olan kömür kaynaklı YFC'nin inşaat sektöründe, şehir içi yollarda, havaalanı pistlerinde, otopark sahalarında, terminallerde ve beton üretiminde çimentonun ikamesi olarak puzolan malzeme olarak kullanılması ve böylece bertaraf edilmesi üzerinde durulan önemli bir konu haline gelmiştir. Bu çalışmada ise, bağlayıcı olarak çimento yerine YFC ikame edilen yol betonlarının fiziksel ve mekanik özellikleri araştırılarak, taşıma gücü çok zayıf, orta ve çok iyi zeminlerde yol kaplaması olarak kullanılabilirliği ve beton yol kaplama kalınlığına etkisi araştırılmıştır. Çalışmada, çimento dozajı 450 kg/m^3 seçilerek, bağlayıcı yerine ağırlıkça %0, %15, %20, %25 ve %30 oranlarında YFC ikame edilmiş ve beton karışım numuneleri hazırlanmıştır. Numuneler, 28 günlük kür süresi sonunda dört noktalı eğilme dayanımı testine tabi tutulmuştur. Deney sonuçları esas alınarak AASHTO 1993 beton kaplama tasarım yöntemi ile anılan üç farklı zemin için farklı trafik yükleri altında (1×10^6, 5×10^6, 10×10^6, 50×10^6, 100×10^6, 200×10^6 ve 400×10^6) beton kaplama kalınlık hesaplamaları yapılmıştır. Deneyler neticesinde, YFC katkılı beton numunelerinin kontrol numunesine kıyasla eğilme dayanımlarının %3,40-6,42 oranında arttığı ve en yüksek eğilme dayanımının %20YFC katkılı numunelerde elde edildiği belirlenmiştir. Ayrıca, AASHTO 1993 tasarım yöntemine göre, beton kaplama kalınlığının taşıma gücü çok zayıf zeminlerde %1,58-3,38, orta zeminlerde %1,59-%3,43, çok iyi zeminlerde ise %1,60-3,70 oranlarında azaldığı tespit edilmiştir. Sonuç olarak, çimento yerine YFC ikamesi ile üretilen betonların tüm zemin grupları için beton yol kaplama kalınlığını azalttığı görülmüştür.

Anahtar Kelimeler: Yüksek Fırın Cürufu (YFC), Zemin Taşıma Gücü, Eğilme Dayanımı, AASHTO 1993 Tasarım Yöntemi, Beton Kaplama Kalınlığı.

ABSTRACT

Today, additives such as Blast Furnace Slag (BFS), fly ash and steel fiber are frequently used in studies to improve the properties of concrete. In particular, the use of coal-derived BFS, which causes significant environmental problems, as a pozzolan material as a substitute for cement in the construction sector, city roads, airport runways, parking lots, terminals and concrete production, and thus its disposal has become an important issue. In this study, the physical and mechanical properties of road concretes, in which BFS substituted cement as a binder, were investigated, and its usability as a road pavement on very weak bearing strength, middle and best soils and its effect on the concrete pavement thickness were investigated. In this study, cement dosage of 450 kg/m^3 was chosen, 0%, 15%, 20%, 25% and 30% by weight of BFS was substituted instead of binder and concrete mixture specimens were prepared. The specimens were subjected to the four-point flexural strength test at the end of the 28-day curing period. Based on the experimental results, AASHTO 1993 concrete pavement design method is used for three different soils under different traffic loads (1×10^6, 5×10^6, 10×10^6, 50×10^6, 100×10^6, 200×10^6 and 400×10^6) concrete pavement thickness calculations were performed. As a result of the experiments, it was determined that the flexural strength of the BFS-added concrete specimens increased by 3.40-6.42% compared to the control specimen, and the highest flexural strength was obtained in the 20%BFS-added specimens. In addition, according to the AASHTO 1993 design method, it was found that the thickness of the concrete pavement decreased by 1.58-3.38% on very weak bearing capacity soil, 1.59-3.43% on middle bearing capacity soil, and 1.60-3.70% on best bearing capacity soil. As a result, it has been observed that concretes produced with the substitution of BFS substitute for cement reduce the concrete pavement thickness for all soil groups.

Keywords: Blast Furnace Slag (BFS), Soil Bearing Strength, Flexural Strength, AASHTO 1993 Design Method, Concrete Pavement Thickness.

ANTIOXIDANT ACTIVITIES AND TOTAL PHENOLIC CONTENTS OF KARAKILÇIK WHEATS GROWN IN DIFFERENT REGIONS OF TURKEY

TÜRKİYE'DE FARKLI BÖLGELERDE YETİŞTİRİLEN KARAKILÇIK BUĞDAYLARININ ANTİOKSİDAN AKTİVİTELERİ VE TOPLAM FENOLİK MADDE İÇERİKLERİ

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ÖZET

Türkiye yerel buğday çeşitleri ve yabani türler bakımından zengin bir biyoçeşitliliğe sahiptir. Son yıllarda tüketicilerin sağlıklı beslenme bilincinin artması ve beslenme alışkanlıklarındaki değişimler ile yerel buğday çeşitlerine ve bu buğdaylardan yapılan ürünlere olan ilgi hızla artmaya başlamıştır. Tüketici talebindeki bu yeni yönelimler nedeniyle yerel buğday çeşitleri yeniden güncel duruma gelmiştir. Bu çeşitler arasında en geniş ekim alanı bulanlar Zerun, Ak Buğday, Kırmızı Buğday, Sarı Buğday, Karakılçık, Kırik, Siyez, Koca Buğday, Topbaş, Şahman ve Üveyik Buğdayı'dır. Uzun yıllar boyunca kuraklık, sel gibi çeşitli olumsuz iklim koşulları ve zararlılara maruz kalan yerel çeşitler bu süreç boyunca dayanabilmek için yapılarında farklı bileşenleri barındırmıştır. Bu durum ata tohumlarının fonksiyonel bileşenler bakımından daha zengin olmalarına katkı sağlamıştır. Bu çalışmada Türkiye'de ekim miktarı fazla olan bölgelerdeki yerel çiftçilerden toplanan 10 farklı karakılçık buğdayının toplam fenolik madde ve antioksidan aktivite yönünden incelenmesi amaçlanmıştır. Karakılçık buğday çeşitleri arasında toplam fenolik madde ve antioksidan aktivite açısından istatistiksel olarak anlamlı farklılıklar bulunmuştur. Karakılçık buğday örneklerinin toplam fenolik madde içeriğinin 4.62-2329.67 µg GAE/g, antioksidan aktivitesinin ise %0.04-23.92 arasında değiştiği belirlenmiştir. Isparta'da üretilen Karakılçık buğdayının toplam fenolik madde ve antioksidan aktivite değerinin, diğer illere oranla daha yüksek olduğu dikkat çekmiştir. Soğuk hava koşullarına direnç gösterebilmek için bitkiler ikincil metabolitler üretmektedirler. Samsun'dan toplanan karakılçık buğdaylarının toplam fenolik madde değeri 2110.22 µg GAE/ g olarak belirlenmiştir ve fenolik madde içeriği bakımından ikinci sırada yer almıştır. Antalya'dan toplanan karakılçık buğday örneğinin toplam fenolik madde ve antioksidan aktivite bakımından en düşük değere sahip olduğu saptanmıştır. Karakılçık buğdaylarının toplam fenolik madde ve antioksidan aktivite değerleri üzerinde yetiştirildikleri bölgenin önemli bir etkisi olduğu sonucuna varılmıştır.

Anahtar kelimeler: Ata Tohumu, Fonksiyonel Bileşen, Karakılçık

ABSTRACT

Turkey has a rich biodiversity in terms of local wheat varieties and wild species. In recent years, with the increase in consumers' awareness of healthy nutrition and the changes in their eating habits, the interest in local wheat varieties and products made from them has started to increase rapidly. Due to these new trends in consumer demand, local wheat varieties have become current again. Among these varieties Zerun, White Wheat, Red Wheat, Yellow Wheat, Karakılçık, Kırik, Siyez, Big Wheat, Topbaş, Şahman and Üveyik Wheat are cultivated in a largest area. Local varieties, which have been exposed to adverse climatic conditions and pests for many years, have contained different components in their structures in order to withstand these conditions. This has contributed to the fact that ancestral seeds are richer in terms of functional components. In this study, it was aimed to examine the total phenolic content and antioxidant activity of 10 different Karakılçık wheat varieties collected from local farmers. Statistically significant differences were found in terms of total phenolic content and antioxidant activity among the Karakılçık wheat cultivars. It was determined that the total phenolic content and antioxidant activity of the Karakılçık wheat samples varied between 14.62-2329.67 µg GAE/g and %0.04-23.92 respectively. It was noted that the total phenolic content and antioxidant activity of Karakılçık wheat produced in Isparta were higher than in other cities. Plants produce secondary metabolites in order to resist cold weather conditions. Total phenolic content value of Karakılçık wheat collected from Samsun was determined as 2110.22 µg GAE/g, and it ranked second in terms of phenolic content. It was determined that the Karakılçık wheat sample collected from Antalya had the lowest value in terms of total phenolic content and antioxidant activity. It was concluded that the region where they were grown had a significant effect on the total phenolic content and antioxidant activity values of Karakılçık wheat varieties.

Key words: Ancestral Seed, Functional Component, Karakılçık

HEMATOLOGIC PARAMETERS OF WILD BUZZARDS (BUTEO BUTEO, B. RUFINUS) IN TURKIYE

TÜRKİYE'DE DOĞADA YAŞAYAN ŞAHİNLERIN (BUTEO BUTEO, B. RUFINUS) HEMATOLOJIK PARAMETRELERİNİN DEĞERLENDİRİLMESİ

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ÖZET

Bu çalışma ile ülkemizde yaşayan şahinlerin tedavi sonrasında salınım öncesi hematolojik parametrelerinin belirlenmesi amaçlanmıştır. Kanatlı hekimliğinde hematolojik referans değerler özellikle rehabilitasyonu gerçekleştirilecek olan hayvanlarda sağlık durumunun belirlenmesinde önemli bir role sahiptir. Bu çalışma kapsamında Türkiye'de rehabilitasyon merkezlerine en sık getirilen yırtıcı kuş olması nedeniyle, şahin (Buteo sp.) türleri çalışılmıştır. Çeşitli nedenler ile doğadan Uludağ Üniversitesi Veteriner Fakültesi Hayvan Hastanesine getirilen ve tedavi ve rehabilitasyonu sonrası klinik olarak sağlıklı olup doğaya tekrar döndürülebilecek olan 30 adet bayağı şahin (Buteo buteo) (9 genç, 21 erişkin) ve 20 adet kızıl şahinden (Buteo rufinus) (6 genç, 14 erişkin) kan örnekleri alınmış ve hematolojik değerler i (hematokrit değer, eritrosit ve hemoglobin miktarı, ortalama eritrosit hacmi, ortalama bir eritrosit içerisindeki hemoglobin konsantrasyonu, ortalama hemoglobin konsantrasyonu, trombosit ve total lökosit miktarları ve formül lökosit değerleri saptanmıştır. parametreler arasında istatistiki farklılığa rastlanmamıştır. Sonuç olarak; çalışma Türkiye'de şahinlerde yapılan ilk hematolojik çalışma olup, kızıl şahinlere ait bugüne değin yayınlanmış ilk referans değerleri içermektedir. Bu çalışma ile ülkemizde yaşayan şahin türleri için referans değerleri olarak kabul edilebilecek veriler elde edilmiş, şahinlerin rehabilitasyonu konusunda doğaya salınma kriterleri belirlenmesinde kullanılabilir veriler ortaya koyulmuştur.

Anahtar Kelimeler: Şahin, Buteo spp, hematoloji

ABSTRACT

In this study, the pre-release hematologic parameters of wild buzzards in Turkey were evaluated after treatment. Having accurate reference hematologic values is of critical importance in the assessment of patients, particularly in avian medicine. We preferred to study common buzzards (Buteo buteo) since they are the most commonly encountered raptors in wildlife rehabilitation centres. After the restoration of their health, pre-release blood samples were collected from 30 common buzzards (Buteo buteo) (9 young and 21 adult) and 20 long-legged buzzards (Buteo rufinus) (6 young and 14 adult) that had been brought to the Animal Hospital, Faculty of Veterinary Medicine, Uludag University. The hematologic values including PCV, RBC, hemoglobin, as well as mean corpuscular volume, mean corpuscular hemoglobin concentration, mean corpuscular hemoglobin, platelet, total WBC count, and WBC differential were measured. No statistical difference was determined with regard to all parameters. In conclusion, this is the first study in Turkey evaluating the hematologic parameters of buzzards and giving reference values, while providing practical data that can be useful in determining the release criteria after rehabilitation of buzzards.

Keywords: Buzzard, Buteo spp., hematology

DETERMINATION OF SOME MECHANICAL PROPERTIES OF WOOD MATERIALS DRY WITH MICROWAVE TECHNOLOGY

MİKRODALGA TEKNOLOJİSİ İLE KURUTULAN AĞAÇ MALZEMENİN BAZI MEKANİK ÖZELLİKLERİNİN BELİRLENMESİ

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ÖZET

Ağaç malzemenin kurutulmasında doğal ve teknik olmak üzere iki farklı kurutma tekniği kullanılmaktadır. Doğal kurutma açık havada yapılırken teknik kurutma şartların ayarlanabildiği çeşitli sistemler ile yapılmaktadır. Doğal kurutma çok vakit aldığı gibi kullanım yerinde gereken rutubet değerine kadar kurutma yapmak mümkün olmayabilmektedir. Teknik kurutma daha pratik, hızlı sonuç veren ve istenilen değerlere kadar kurutma yapılabilen metottur. Fakat ağaç malzemenin teknik olarak kurutulmasında da enerji sarfiyatının fazla olması, üretim maliyetlerinin artmasına sebep olurken günümüz üretim şartlarında yine yavaş kalmaktadır. Bu çalışmanın amacı infrared ve mikrodalga teknolojisi kullanarak ağaç malzemenin kurutma süresinin kısaltılması ve enerji maliyetlerinin düşürülmesidir.

Çalışma kapsamında; %60 rutubete sahip kızılçam (Pinus brutia) ve doğu ladini (Picea orientalis) odunundan elde edilen 20x20x360 mm ve 20x20x30 mm ölçülerinde üç grup halinde örnekler hazırlanmıştır. Birinci grup; mikrodalga fırında kurutulmuş, ikinci grup; infrared ve mikrodalga ile kurutulmuş, üçüncü grup ise; klasik kurutma işlemi ile kurutulmuştur. Gruplar arasında kurutma süreleri, enerji sarfiyatı ve kurutma sonrası örneklerin mekanik dirençleri belirlenmiştir. Bu amaçla, hedef rutubete ulaşan örnekler, ASTM D–1037-12 standartlarına uygun olarak, TS 2474' de belirtilen esaslara göre liflere dik eğilme direnci ve eğilmede elastikiyet modülü, TS 2595 'de belirtilen esaslara göre liflere ve yüzeye paralel basınç direnci testlerine tabi tutulmuşlardır. Elde edilen sonuçlara göre; infrared ve mikrodalga teknolojisi ile kurutmanın, klasik kurutmaya kıyasla %95 daha az enerji sarfiyatıyla ve daha kısa sürede kurutma yapıldığı anlaşılmıştır. Mekanik test sonuçlarına göre ise; klasik kurutma yöntemi ile kurutulan örneklerin diğer yöntemlere kıyasla daha iyi sonuç verdiği görülmüştür.

Anahtar Kelimeler: Ahşap, Kurutma, Mikrodalga, Infrared

ABSTRACT

wo different drying techniques, natural and technical, are used for drying wood material. While natural drying is done in the open air, technical drying is done with various systems in which the conditions can be adjusted. As natural drying takes a lot of time, it may not be possible to dry up to the required humidity value at the place of use. Technical drying is a method that is more practical, gives fast results and can be dried up to the desired values. However, the high energy consumption in the technical drying of wood material causes an increase in production costs, while it remains slow in today's production conditions. The aim of this study is to shorten the drying time of wood material and to reduce energy costs by using infrared and microwave technology.

Scope of work; Samples in three groups of 20x20x360 mm and 20x20x30 mm were prepared from red pine (Pinus brutia) and oriental spruce (Picea orientalis) wood with 60% humidity. First group; microwave dried, second group; dried by infrared and microwave, the third group; dried by the conventional drying process. Drying times, energy consumption and mechanical resistance of the samples after drying were determined between the groups. For this purpose, samples reaching the target humidity were subjected to bending resistance tests perpendicular to the fibers and modulus of elasticity in bending, pressure resistance tests parallel to the fibers and the surface according to the principles specified in TS 2595, in accordance with ASTM D-1037-12 standards. . According to the results obtained; It has been understood that drying with infrared and microwave technology is drying in a shorter time with 95% less energy consumption compared to conventional drying. According to the mechanical test results; It was observed that the samples dried with the classical drying method gave better results compared to other methods.

Keywords: Wood, Dry, Microwave, Infrared

RESEARCH ON SERVICES REQUESTS AND UTILISATION STATUS AND SATISFACTION IN A FAMLIY HEALTH CENTER IN ISTANBUL

İSTANBUL'DA BİR AİLE SAĞLIĞI MERKEZİNE BAŞVURANLARIN HİZMETLERİ BİLME VE YARARLANMA DURUMLARI İLE MEMNUNİYETLERİNİN ARAŞTIRILMASI

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ÖZET

Amaç: Aile Hekimliği Sisteminde Aile Hekimi aile sağlığı elemanı ile birlikte kendine kayıtlı bireylerin sorunlarını fiziksel, psikolojik ve sosyal yönleriyle ele alan bütüncül bir hizmet sunar. Bu araştırmanın amacı, Aile hekimliği Hizmetlerinin İstanbul'un bir ilçesinde bir aile sağlığı merkezinde halk tarafından bilinme, yararlanılma ve memnuniyet durumunu araştırmaktır.

Yöntem: Araştırma İstanbul ilindeki, bir Aile Sağlığı Merkezinde Eylül 2013-Ocak 2014 tarihleri arasında yürütüldü. Yüz yüze görüşme metoduyla 400 kişiye demografik veriler, EUROPEP (Patients Evaluate General/Family Practice) anketi ve araştırıcının geliştirdiği Hizmetleri Bilme, Yararlanma ve Memnuniyet Durumu Anketi (HBYMDA) uygulandı.
HBYMDA de toplam puan 24 idi. EUROPEP anketindeki toplam puan 115 idi.

Bulgular: Araştırmaya katılan kişilerin 302'si(%76) kadın ve 98'i(%24) erkekti. Grubun yaş ortalaması 37,17±14,10 idi. Kadınların yaş ortalaması 35,42±13,04, erkeklerin yaş ortalaması 42,57±15,85 idi. HBYMDA'nin toplam puan ortalaması 11,54±5,80 bulundu. EUROPEP anketi toplam puan ortalaması 93,87±21,32 bulundu. Bireylerin en çok bildikleri, yararlandıkları ve memnun oldukları hizmetler sırasıyla**,** muayene teşhis ve tedavi, enjeksiyon ve pansuman hizmetleri, acil hizmetler, ücretsiz laboratuar hizmetleri idi. Katılımcılar tarafından en az bilinen, yararlanılan ve memnun olunan hizmetler ise sırasıyla verem hastalarının direk gözetimli tedavisi, bireye ve çevreye yönelik bulaşıcı hastalıklarla ilgili önlemlerin alınması, askerlik muayenesi ve periyodik muayene yapılması idi.

Sonuç: Aile Hekimlerinin hizmetlerinden düşük sosyo-ekonomik-kültürel grubun daha fazla yararlandığı ve hizmetlerden memnuniyetin hizmetleri bilme ve yararlanma durumu ile ilişkili olduğu saptandı.

Anahtar Kelimeler: Aile Hekimliği, Sağlık Hizmetleri, Memnuniyet

ABSTRACT

Aim:In the family practice, the family doctor accompanied with the family health center employee render integrated services to people registered in their own department from physical, psychological and social points. The purpose of this research is to investigate the cognition, utilization and satisfaction state of family practice services by the public of a family health center found at any district of Istanbul.

Method: The research in question has been done at the prefecture of Istanbul, at a family health center between the dates September 2013 and January 2014. We have applied the Cognition, Utilization and Satisfaction State of services survey (HBYMDA) developed by the researcher, we have collected data through face to face method and applied EUROPEP (Patients Evaluate General/Family Practice) survey. The total point for HBYMDA was 24. Whereas the total point for EUROPEP was 115.

Results: 302 (76%) of the persons having participated to the survey were women and 98 (24%) men. The average of age of the group was 37,17±14,10. The average of age of women was 42±13,04 and 42,57±15,85 for men. The average of the total point for HBYMDA was calculated as 11,54±5,80. The average of total point of EUROPEP was 93,87±21,32. The services that persons know the most, use the most and are satisfied the most are listed respectively as following inspection diagnosis and therapy, injection and medical dressing services, emergency services, free laboratory services. Whereas the services that participants know the less, use the less and are satisfied the less are listed respectively as following therapy of tuberculosis through direct observation, taking measures concerning contagious disease towards people and environment, military examination and periodic examination.

Conclusion: It is determined that the group of low social-economical-cultural uses more family practice services and that situation is related to the knowing, utilization and satisfaction state of the services.

Key words: Family Medicine, Health Services, Satisfaction

EVALUATION OF QUALITY OF PUBLIC OPEN SPACES FOR THE ELDERLY PEOPLE: A CASE STUDY OF BARIŞ MANÇO PARK, TRNC

YAŞLILARA YÖNELİK KAMUYA AÇIK ALANLARIN KALİTESİNİN DEĞERLENDİRİLMESİ: KKTC BARIŞ MANÇO PARKI ÖRNEĞİ

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ABSTRACT

Old age is an important stage in life needing more care and attention in human development projects. Moreover, with the problem of population growth and the quest for sustainable growth, there is a need to improve the deficit in open space delivery. Also, elderly residents' requirements have not been efficiently incorporated into communal projects. This study aims to classify and assess the elements and amenities that are important to elderly users in a public open space, a case study of Barış Manço Park, in line to encourage elderly residents' participation in outdoor activities through improving accessibility, elderly amenities, and overall quality of open spaces. A methodical survey of 56 respondents was done in the study area and data were obtained using a structured questionnaire that highlights two different sections; the demographics and satisfaction with aspects of the park. In addition to questionnaire survey a site examination was also conducted guided by an organised checklist. Results from the questionnaire investigation found that the problems most respondents have with Barış Manço Park are; the streets, parking and sidewalks (23.2%), pollution (21.4%), accessibility problems (17.9%), and socio-cultural problems (16.1%). The questionnaire investigation also reveals that the features of the park that most respondents found satisfactory, measured on a mean satisfactory scale of one to five, are; Attraction (4.14), pavement (4.09), landscape (4.07), recreational possibilities (4.04) and urban furniture (4.04). The most notable observation from the checklist is the lack of designated parking spaces and toilets in the park. The study recommends the need for government and public open space developers to pay attention to prevalent user requirements as well as the safety of elderly users.

Keywords: Elderly People, Open Space, Public Space, Accessibility, TRNC.

ÖZET

Yaşlılık, insani gelişme projelerinde daha fazla özen ve dikkat gerektiren yaşamın önemli bir aşamasıdır. Ayrıca nüfus artışı sorunu ve sürdürülebilir büyüme arayışı ile, açık alan kabulündeki açığı iyileştirmeye ihtiyaç vardır. Ayrıca, yaşlı sakinlerin gereksinimleri ortak projelere verimli bir şekilde dahil edilmemiştir. Bu çalışma, halka açık bir alanda yaşlı kullanıcılar için önemli olan unsurları ve kolaylıkları sınıflandırmayı ve değerlendirmeyi, Barış Manço Park'tan bir örnek olay incelemesi yapılarak, erişilebilirliği, yaşlılara sağlanan kolaylıkları ve açık alanların genel kalitesini iyileştirerek yaşlı sakinlerin açık hava etkinliklerine katılımını teşvik etmeyi amaçlamaktadır. Çalışma alanında 56 katılımcıyla metodik bir anket yapıldı ve veriler iki farklı bölümü vurgulayan yapılandırılmış bir anket kullanılarak elde edildilmiştir; parkın demografi ve memnuniyet yönleriyle. Anket çalışmasına ek olarak, organize bir kontrol listesi rehberliğinde bir saha incelemesi de yapılmıştır. Anket araştırmasının sonuçları, katılımcıların çoğunun Barış Manço Park ile yaşadığı sorunların; sokaklar, park ve kaldırımlar (%23,2), kirlilik (%21,4), erişilebilirlik sorunları (%17,9) ve sosyo-kültürel sorunlar (%16,1) olduğu bulundu. Anket araştırması ayrıca, katılımcıların çoğunun tatmin edici bulduğu, bir ile beş arasında ortalama tatmin edici bir ölçekte ölçülen park özelliklerinin; Cazibe (4.14), kaldırım (4.09), peyzaj (4.07), eğlence olanakları (4.04) ve kent mobilyaları (4.04) olduğunu buldu. Kontrol listesinden en dikkat çekici gözlem, parkta belirlenmiş park yerleri ve tuvaletlerin olmamasıdır.

Anahtar Kelimeler: Yaşlılar, Açık Alan, Kamusal Alan, Erişilebilirlik, KKTC.

PHYLOGENETIC ANALYSIS OF CARASOBARBUS LUTEUS (HECKEL, 1843) LIVING IN ATATÜRK DAM LAKE BASED ON MTDNA COI SEQUENCES.

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Abstract

Atatürk Dam Lake has a great potential in terms of aquaculture. The economic fish species living here are exposed to increasing pressures due to factors such as overfishing, the dominance of invasive species and habitat loss. *C. luteus*, one of the fish most exposed to these pressures, has an economic importance because it is a fish consumed by humans. In this study, fish samples of *C. luteus* species caught in Adıyaman Region were taken as material and brought to the laboratory in boxes containing ice bags. Approximately 1 g of muscle tissue was taken from each fish sample and total DNAs were obtained using a commercial kit. Then, PCR was performed using primers specific to the mtDNA COI region and the gene region was amplified. The obtained products were compared with similar sequences in the NCBI gene bank by performing sequence analysis, and a phylogenetic tree was formed. To this, genetic distances between species were calculated and similarities were determined.

Keywords: mtDNA, Phylogenetics, Atatürk Dam Lake

EXAMINING THE RELATIONSHIP BETWEEN BRAND IMAGE, BRAND PERSONALITY, BRAND TRUST AND BRAND LOYALTY: A RESEARCH FOR CONSUMERS USING DOMESTIC CAR BRANDS MANUFACTURED IN TURKEY

MARKA İMAJI, MARKA KİŞİLİĞİ, MARKA GÜVENİ VE MARKA SADAKATİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ: TÜRKİYE'DE ÜRETİLEN YERLİ OTOMOBİL MARKALARINI KULLANAN TÜKETİCİLERE YÖNELİK BİR ARAŞTIRMA

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ÖZET

Araştırma, Türkiye'de üretilen yerli otomobil markalarına yönelik tüketici algılarını değerlendirmek amacıyla gerçekleştirilmiştir. Türkiye'de otomotiv sektöründe birçok marka rekabet içerisindedir. Rekabetin yoğun yaşandığı sektörde yerli üretim araçlarının büyük bölümü, ülkede, hem sıfır kilometre hem de ikinci el modellerinde büyük rağbet görmektedir. Teknolojinin gelişmesi bu ilgiyi ve sektördeki rekabeti daha da güçlü hale getirmektedir. Otomotiv işletmeleri, sektördeki bu güçlü rekabet ortamında ayakta kalabilmek ve daha fazla pazar payı elde edebilmek adına tüketici odaklı stratejiler geliştirmek durumundadırlar. Tüketicilerin bir otomotiv markasına ilişkin duygu, düşünce ve değerlendirmelerine odaklanan işletmeler, rekabette daha avantajlı olabilirler. Bu kapsamda araştırma, marka imajı, marka kişiliği, marka sadakati, marka güveni arasındaki ilişkinin incelenmesine odaklanmaktadır. Araştırmanın evrenini Türkiye'de üretilen yerli otomobil markalarından birisini kullanan tüketiciler oluşturmaktadır. Örneklem sayısı ise 410 anket formunda yer alan verilerden yola çıkarak değerlendirilmiştir. Önerilen yapısal modeli test etmek için Smart PLS 4 kullanılmıştır. Yol analizi sonuçları incelendiğinde marka imajı ile marka sadakati arasında pozitif anlamlı bir ilişki olduğu sonucuna ulaşılmıştır. Ayrıca marka imajının, marka güveni üzerinde pozitif ve anlamlı bir etkisi olduğu görülmüştür. Marka kişiliği ile marka sadakati arasında pozitif ve anlamlı bir ilişki tespit edilmiştir. Araştırmada ayrıca marka kişiliğinin, marka güveni üzerinde pozitif anlamlı etkisi olduğu sonucuna ulaşılmıştır. Araştırmada son olarak marka güveninin, marka sadakati üzerinde pozitif anlamlı etkisi olduğu sonucuna ulaşılmıştır. Araştırmanın sonuçlarına bağlı olarak sektörde yer alan otomotiv işletmelerine ve bayilere birtakım çıkarımlarda bulunulmuştur.

Anahtar Kelimeler: Marka imajı, Marka sadakati, Marka kişiliği

ABSTRACT

The research was carried out to evaluate consumer perceptions of domestic automobile brands produced in Turkey. Many brands are in competition in the automotive industry in Turkey. In the sector where competition is intense, most of the domestic production vehicles are in great demand in the country, both in zero kilometer and second-hand models. The development of technology further strengthens this interest and the competition in the sector. Automotive businesses have to develop consumer-oriented strategies in order to survive in this strong competitive environment in the sector and to gain more market share. Businesses that focus on consumers' feelings, thoughts and evaluations regarding an automotive brand may be more advantageous in competition. In this context, the research focuses on examining the relationship between brand image, brand personality, brand loyalty and brand trust. The universe of the research consists of consumers who use one of the domestic automobile brands produced in Turkey. The number of samples was evaluated based on the data in the 410 questionnaires. Smart PLS 4 was used to test the proposed structural model. When the path analysis results were examined, it was concluded that there was a positive and significant relationship between brand image and brand loyalty. In addition, it has been seen that brand image has a positive and significant effect on brand trust. A positive and significant relationship was found between brand personality and brand loyalty. In the research, it was also concluded that brand personality has a positive and significant effect on brand trust. Finally, it was concluded that brand trust has a positive and significant effect on brand loyalty. Depending on the results of the research, some inferences were made to the automotive companies and dealers in the sector.

Keywords: Brand image, Brand loyalty, Brand personality

HIGH PRE-CHEMORADIOTHERAPY PAN -IMMUNE- INFLAMMATORY VALUE MEASURES INDICATE DIMINISHED SURVİVAL OUTCOMES IN LOCALLY ADVANCED NASOPHARYNGEAL CANCERS

KEMORADYOTERAPİ ÖNCESİ YÜKSEK PAN-İMMÜNE-İNFLAMATUAR DEĞERİ, LOKAL İLERLEMİŞ NAZOFARENKS KANSERLERİNDE AZALMIŞ SAĞ KALIM SONUÇLARINI GÖSTERMEKTEDİR

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ÖZET

Amaç: Benzer araştırmaların yetersizliğinde, eşzamanlı kemoradyoterapi (EKRT) ile tedavi edilen lokal olarak ilerlemiş nazofaringeal karsinomlarda (Lİ-NFK) yeni pan-immün-inflamasyon değerinin (PİV) prognostik etkilerini araştırmayı amaçladık.
Yöntem: PİV, EKRT'nin ilk gününde periferik kan sayımından elde edilen trombositler (T), monositler (M), nötrofiller (N) ve lenfositler (L) ölçümleri kullanılarak hesaplandı: PİV=T×M×N÷L. Hastaları farklı genel sağ kalım (GS) ve uzak metastazsız sağ kalım (UMS) ile iki gruba ayırabilen cut-off değeri, ‘’receiver operating characteristic’’ (ROC) eğrisi analizi kullanılarak araştırıldı. Bu çalışmanın birincil ve ikincil hedefleri, tedavi öncesi PİV ölçümleri ile ilgili olarak EKRT sonrası OS ve UMS sonuçları arasında ki anlamlı bağlantıların varlığıydı.

Bulgular: Bu retrospektif kohort araştırmasına toplam 179 Lİ-NFK hastası dahil edildi. ROC eğrisi analizine göre ideal PİV kesimi 512 [eğri altındaki alan (AUC): %84.0; duyarlılık: %73.8, özgüllük: %71.1] idi ve tüm araştırma popülasyonunu iki gruba ayırdı: PİV <512 (N = 108) ve PİV ≥ 512 (N = 71). Gruplar arası karşılaştırmaların sonuçları, medyan UMS'nin [27.0 aya karşı henüz ulaşılmamış (NR); HR: 3.23; P<0.001] ve GS (74.0 ay ve NR; İK: 2.81; P<0.001], PİV ≥ 512 hastalarda, PİV <512 olanlara göre anlamlı derecede daha kısaydı. Tek değişkenli analizlerde, PİV ≥ 512'ye ek olarak, N2-3 nodal evre ve önceki 6 ayda %>5 kilo kaybının varlığının, düşük UMS (her biri için P<0.05) ve GS (her biri için P<0.05) sonuçlarının anlamlı prognostik belirleyicileri olduğu bulunmuştur. Çok değişkenli analiz sonuçları ise; her üç değişkenin de UMS (her biri için P <0.05) ve GS (her biri için P <0.05) sonuçları üzerinde bağımsız olumsuz etkileri olduğunu göstermiştir.

Sonuçlar: Mevcut araştırma bulguları, yeni PİV'nin hastaları önemli ölçüde farklı UMS ve GS sonuçları olan iki gruba ayırdığı için Lİ-NFK'ler için güvenilir ve sağlam bir prognostik gösterge olarak kullanılabileceğini göstermektedir.

Anahtar Kelimeler: Nazofarenks kanseri, prognoz, pan-immün-inflamatuar değeri.

Abstract

Objectives: In the dearth of similar research, we intended to investigate the prognostic implications of the novel pan-immune-inflammation value (PIV) in locally advanced nasopharyngeal carcinomas (LA-NPC) patients treated with concomitant chemoradiotherapy (CCRT).

Methods: The PIV was derived for each patient using the measures of platelets (P), monocytes (M), neutrophils (N), and lymphocytes (L) acquired on the first day of CCRT: PIV=P×M×N÷L. The accessibility of an immaculate cutoff that may divide patients into two groups with distinct overall survival (OS) and distant metastasis-free survival (DMFS) was surveyed using receiver operating characteristic (ROC) curve analysis. The primary and secondary objectives of this study were the existence of significant links between pretreatment PIV measures and the respective post-CCRT OS and DMFS outcomes.

Results: A total of 179 LA-NPC patients were included in this retrospective cohort research. The ideal PIV cutoff, according to ROC curve analysis, was 512 [area under the curve (AUC): 84.0%; sensitivity: 73.8%, specificity: 71.1%], which split the whole research population into two groups: PIV < 512 (N = 108) and PIV ≥ 512 (N = 71). The results of the intergroup comparisons revealed that either the median DMFS [27.0 months vs. not reached yet (NR); HR: 3.23; P<0.001] or OS (74.0 months vs. NR; HR: 2.81; P<0.001] times were significantly shorter in the PIV ≥ 512 group patients than their PIV < 512 counterparts. In univariate analyses, in addition to the PIV 512, the N2-3 nodal stage and the presence of >5% weight loss in the previous 6 months were found to be significant prognosticators of poor DMFS (P<0.05 for each) and OS (P<0.05 for each) outcomes. The multivariate analyses results indicated that all three variables had independent deleterious effects on the DMFS (P < 0.05 for each) and OS (P < 0.05 for each) outcomes.

Conclusions: The present research findings imply that the novel PIV could be used as a reliable and robust prognostic indicator for LA-NPCs since it divides patients into two groups with significantly different PFS and OS outcomes.

Keywords: Nasopharyngeal cancer, prognosis, pan-immune-inflammatory value.

İSTATİKSEL ÖZELLİKLER İLE EV ALETLERİNİN SINIFLANDIRILMASI

CLASSIFICATION OF HOUSEHOLD APPLIANCES BY STATISTICAL FEATURES

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ABSTRACT

In recent years, the development of technology has increased electrical energy consumption. The efficient use of energy is crucial to meet the increasing energy demand due to limited energy resources, and environmental and climate change problems. Although many studies have been done on energy efficiency, the non-intrusive load monitoring approach is one of the most effective methods. This approach provides the determination of the energy consumption of each appliance by measuring the total power consumption at a single point in the house with the help of a sensor or intelligent meter and separating this power consumption for the appliance in the home. In this study, a low-cost approach is proposed to detect household appliances from energy consumption data collected at a single point. In the first stage of the study, the power consumption is divided into windows that do not overlap with the sliding window approach in the time series, and the mean and standard deviation values of each window are combined and used as an attribute. Then, these features are applied to k-nearest neighbor (k-NN) and ensemble learning (EBT) to classify home appliances. The effectiveness of the proposed model has been tested with 18 different high-resolution electrical appliances dataset. In experimental studies, household appliances were detected with k-NN, and EBT classifiers with an accuracy of 81.65%, and 92.14% respectively.

Keywords: Non-intrusive load monitoring, Appliance identification, Feature extraction, Classification

ÖZET

Son yıllarda, gelişen teknoloji ile birlikte elektrik enerji tüketimi de ciddi oranda artmaktadır. Sınırlı enerji kaynakları, çevresel ve iklim değişikliği sorunları nedeniyle artan enerji talebinin karşılanabilmesinde enerjinin verimli kullanımı büyük önem taşımaktadır. Enerji verimliliğine yönelik pek çok çalışma yapılmış olmakla birlikte müdahaleci olmayan yük izleme yaklaşımı en etkili yöntemlerden biridir. Bu yaklaşım, evlerde tek bir noktada toplam güç tüketimini bir sensör veya akıllı sayaç yardımıyla ölçerek ve bu güç tüketimini evlerdeki cihazlar için ayırarak her bir cihazın enerji tüketiminin belirlenmesi sağlamaktadır. Bu çalışmada, tek bir noktada toplanan enerji tüketim verilerinden ev aletlerini tepist edebilecek düşük maliyetli bir yaklaşım önerilmektedir. Çalışmanın ilk aşamasında, güç tüketimi zaman serilerinde kayan pencere yaklaşımı ile örtüşmeyen pencerelere bölünerek her bir pencerenin ortalama ve standart sapma değerleri birleştirilerek öznitelik olarak kullanılmıştır. Daha sonra bu öznitelikler k en yakın komşuya (k-NN) ve topluluk öğrenimi (EBT) uygulanarak ev cihazları sınıflandırılmaktadır. Önerilen modelin etkinliği, yüksek çözünürlüklü 18 farklı elektrikli ev cihazları veri seti ile test edilmiştir. Deneysel çalışmalarda, k-NN, ve SVM sınıflandırıcılarında sırasıyla %81,65, ve %92,14 doğrulukla ev tipi cihazlar tespit edilmiştir.

Anahtar kelimeler: Müdahaleci olmayan yük izleme, Cihaz tanımlama, Öznitelik çıkarım, Sınıflandırma

THE PROCESS OF BUILDING A DESIGNER BRAND THE EXAMPLE OF BARBAROS APAYDIN AND GÖKHAN SLOW

TASARIMCI MARKASI OLUŞTURMA SÜRECİ BARBAROS APAYDIN VE GÖKHAN YAVAŞ ÖRNEĞİ

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ÖZET

Tasarımcı markası tanımlaması, bağımsız tasarımcıların kurdukları markalar için kullanılan bir tanımlamadır ve ürünler tasarımcısına özgü özellikler taşımaktadır. Moda piramidinin üst sıralarında yer alan Louis Vuitton, Prada, Armani, Vivienne Westwood gibi tasarımcı markaları, moda endüstrisinde önemli bir yer tutmaktadır.

Tasarımcı markaları, kaliteli malzeme ve işçilik, yüksek fiyat, geleneksel moda takvimine uymayan üretim döngüleri, tüketicisine sağladığı sosyal statü ve imaj ile lüks modanın bir parçasıdır. Pazar araştırmaları, tüketicilerin tasarımcı markalarına yönelik ilgisinin artmakta olduğunu göstermektedir. Bu durum, genç tasarımcılara kendi markalarını kurmaları için cesaret verici bir unsur olarak yorumlanabilmektedir.

Bu araştırmanın amacı, tasarımcı markası oluşturma sürecine yönelik faaliyetleri analiz etmektir. Yarı yapılandırılmış görüşme yöntemi ile toplanan araştırmanın verileri, araştırmacı tarafından geliştirilen görüşme formu kullanılarak kaydedilmiştir. Barbaros Apaydın'ın kurucusu olduğu Rossi Barbarossa ve Gökhan Yavaş tarafından kurulan GOKHANYAVAS markaları araştırmanın örneklemini oluşturmuştur. Örneklemin belirlenmesinde yargısal örneklem tekniklerinden amaçsal örneklem seçim tekniği kullanılmıştır. Rossi Barbarossa ve GOKHANYAVAS markalarının oluşturulmasında yürütülen faaliyetler ve bu faaliyetlere yönelik tasarımcıların önerilerinden yola çıkarak, tasarımcı markası oluşturma süreci analiz edilmiş ve genç tasarımcılara kendi markalarını kurmalarında rehber olabilecek öneriler geliştirilmiştir.

Anahtar Kelimeler: Tasarımcı markası, moda tasarımı, moda pazarlama.

ABSTRACT

The designer brand definition is a definition used for brands established by independent designers, and the products have designer-specific features. Designer brands such as Louis Vuitton, Prada, Armani, Vivienne Westwood, which are at the top of the fashion pyramid, have an important place in the fashion industry.

Designer brands are a part of luxury fashion with quality materials and workmanship, high prices, production cycles that do not comply with the traditional fashion calendar, and the social status and image they provide to their consumers. Market research shows that consumers' interest in designer brands is increasing. This situation can be interpreted as an encouraging factor for young designers to establish their own brands.

The purpose of this research is to analyze the activities related to the designer brand creation process. The data of the research collected by the semi-structured interview method were recorded using the interview form developed by the researcher. The brands of Rossi Barbarossa, founded by Barbaros Apaydın, and GOKHANYAVAS, founded by Gökhan Yavaş, formed the sample of the research. Purposeful sampling technique, one of the judgmental sampling techniques, was used to determine the sample. Based on the activities carried out in the creation of Rossi Barbarossa and GOKHANYAVAS brands and the suggestions of the designers for these activities, the process of creating a designer brand was analyzed and suggestions were developed that can guide young designers in establishing their own brands.

Keywords: Designer brand, fashion design, fashion marketing.

SAMSUN-VEZİRKÖPRÜ NEOKLAUDIOPOLIS ANCIENT CITY AND TERRITORY SURVEYS AND RESULTS

SAMSUN-VEZİRKÖPRÜ NEOKLAUDİOPOLİS ANTİK KENTİ VE YAKIN ÇEVRESİ YÜZEY ARAŞTIRMASI PROJESİ VE SONUÇLARI

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ÖZET

Samsun İli Vezirköprü İlçesinin tarihini araştırmak, İlçedeki arkeolojik kültür varlıklarını tespit etmek, yerinde incelemek, taşınır ve taşınmaz kültür varlıklarını belgelemek, tescil değerlendirmesini yapmak, bilimsel sonuçlarını sunmak, yayınlamak ve etkin bir biçimde tanıtmak ve bilim dünyası ile ilçe turizmine kazandırılmasına katkıda bulunmak amacıyla, başkanlığımdaki bir ekip tarafından T.C. Kültür ve Turizm Bakanlığı Kültür Varlıkları ve Müzeler Genel Müdürlüğü'nün izniyle "Neoklaudiopolis Antik Kenti ve Yakın Çevresi Yüzey Araştırması" başlıklı bir yüzey araştırma projesi başlatılmıştır. Projenin amacı önemli bir Roma kenti olan Neoklaudiopolis Antik Kenti'nin lokalizasyon sorununu çözmek ve kentin yayılım alanını tespit etmektir. Bu kapsamda toplam beş yıllık bir çalışma takvimi hazırlanmış ve bu takvim çerçevesinde 2018 yılında çalışmalara başlanmıştır. Bugüne dek yürütülen çalışmalarda 72 köyde gerçekleştirilmiştir. Bu çalışmalar sırasında, tescilli olanlarla birlikte, 24 tümülüs, 12 kale, 28 yamaç yerleşimi, 6 höyük, 16 nekropol, çok sayıda mezar, pres denge ağırlığı, işlik, sütun, sütun başlığı ve altlığı, lahit, mimari yapı elamanı, mil taşı ayrıntılı bir şekilde araştırılarak kayıt altına alınmıştır. Birçok bölgede tarihlemek amacıyla nitelikli seramiklerden örnekler toplanarak Samsun Arkeoloji Müzesi'ne teslim edilmiştir. Çalışmalar sırasında tespit edilen devşirme malzemeler ağırlıklı olarak Roma ve Bizans dönemlerine aittir. Tespit edilen tümülüs ve yamaç yerleşimlerinde çok sayıda kaçak kazı çukurunun görülmesi bölgede yoğun bir definecilik faaliyetinin yürütüldüğünü ortaya koymaktadır. Yerleşim alanlarında özellikle Demir çağ, Roma çağı ve Bizans seramiklerinin yoğunlaştığı izlenmektedir. Köylerde ele geçen devşirme mimari yapı elamanları ise Neoklaudiopolis antik kentinin kalıntılarının geniş bir alana yayıldığını göstermesi açısından oldukça önemlidir.

Anahtar Kelimeler: Karadeniz, Samsun-Vezirköprü, Neoklaudiopolis, Roma Yeleşimleri

ABSTRACT

In order to research the history of Vezirköprü District of Samsun Province, to identify the archaeological cultural assets in the district, to examine on-site, to document the movable and immovable cultural assets, to make registration evaluation, to present, publish and effectively promote the scientific results, and to contribute to the scientific world and tourism of the district. A survey project titled "Neoklaudiopolis Ancient City and Territory Surveys" was initiated by a team with the permission of the Repuplic of Türkiye Ministry of Culture and Tourism, Directorate General of Cultural Assets and Museums. The aim of the project is to solve the localization problem of the ancient city of Neoklaudiopolis, an important Roman city, and to determine the spread of the city. In this context, a five-year working calendar was prepared and work started in 2018 within the framework of this calendar. Studies carried out to date have been carried out in 72 villages. During these works, 24 tumuli, 12 castles, 28 hillside settlements, 6 mounds, 16 necropolises, numerous tombs, press counterweights, workshops, columns, column capitals and bases, sarcophagi, architectural elements, and milestones, together with the registered ones, were found in detail. was researched and recorded. In order to date in many regions, samples of quality ceramics were collected and delivered to the Samsun Archeology Museum. The spolia materials found during the studies mainly belong to the Roman and Byzantine periods. The presence of many illegal excavation pits in the identified tumulus and slope settlements reveals that an intense treasure hunting activity is carried out in the region. It is observed that especially Iron Age, Roman Age and Byzantine ceramics are concentrated in the settlement areas. Reused architectural building elements found in the villages are very important in terms of showing that the remains of the ancient city of Neoklaudiopolis spread over a wide area.

Keywords: Black Sea, Samsun-Vezirköprü, Neoklaudiopolis, Roman Settlements

ISSUES AND POST CORONA-19 FISCAL PROJECTIONS TO GLOBAL FISCAL RISK MANAGEMENT IN EMERGING ECONOMIES

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ABSTRACT

This study aims to analyse the recent structural problems related to the management of financial crises after the Corona 19 pandemic process in emerging economies and to emphasise the importance of issues related to the development of critical fiscal projections regarding these structural problems. This study, focusing on the financial crisis process in line with the related objectives, was found meaningful and prioritised to clarify the global dynamics necessary to express the fiscal projections before and after the Corona 19 pandemic period, mainly to define the expectations. Overcoming financial balance problems means the fact that financial institutions in emerging economies are questioned with financial efficiency problems, which is far from representing a clear crisis management policy regarding financial crisis management. This approach also revealed that the clarity in fiscal crisis management and the avoidance of rational estimation principles in showing future projections might turn into a possible crisis phenomenon. This phenomenon, which has emerged as an essential financial deviation phenomenon for emerging economies, has also necessitated the restructuring of new structural policies to address possible crisis management and financial measures and to overcome economic crises. The concern that every financial formation that may arise in emerging economies will have a shrinking effect with a more significant deviation value today has also caused these countries to become more consistent in applying to global financial institutions and reaching external global financial resources. Therefore, in these countries, which represent emerging economies, the effectiveness of the fiscal policies implemented after the Corona 19 pandemic has made it necessary to deal with tight monetary and fiscal policies.

Key Words: Emerging Economies, Fiscal Policies, Fiscal Projections, Fiscal Risk Process, Risk Management.

JEL Codes: H12, H13, H30.

LEGAL ASPECTS CONCERNING THE HYBRID PRODUCT CONFORMITY ASSESSMENT SYSTEM: OBJECTIVE CONFORMITY VS. SUBJECTIVE CONFORMITY

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ABSTRACT

The study approaches several key-aspects concerning the hybrid product conformity assesment in B2C contracts, under the provisions of Directive 2019/771 which propose the assessment of the conformity of products delivered under B2C contracts starting from a mixture of objective and subjective criteria of conformity, that have been broken down into four interconnected and nested levels at multiple levels: (i) subjective criteria extracted from the express contractual clauses (especially with regard to the atypical purposes selected on the products by the consumer with the consent of the seller or with regard to the exclusion from the contractual field of some typical characteristics of the product, at the proposal of the seller, with the consent of the consumer); (ii) objective criteria for assessing the conformity of the delivered products, by reference to typical uses, to the normal characteristics of the products in the respective category and to the typical character of the accessories that should have been the object of the delivery; (iii) the consumer's reasonable expectations regarding the qualities and typical features or the content of the installation instructions that accompanied the product; (iv) the professional trader's public statements from which specific references to certain technical features or characteristics of the product can be accurately derived. Secondly, the paper focuses on the (a) provisions which draw a clear line of demarcation between the subjective criteria of conformity (based on express contractual stipulations, including those of incorporating in the contractual field the purpose/atypical use of the products) and the objective criteria for assessing conformity, starting from the purposes typical, usual printed on products, thus being described in the specialized literature as one of the major innovations brought by the text of the new directive in the matter of product conformity assessment in B2C contracts, and (b) the references to product interoperability and to non-compliance arising from the incorrect installation of products, in the context in which Directive 2019/771 substantially maintains the compliance criteria previously forged in judicial practice and to which the previous regulation referred (the delivered product to correspond to the one ordered in terms of identity, quality and quantity, characteristics of product functionality).

Keywords: consumer, B2C contracts, product conformity, objective conformity, conformity assessment, liability

ANTIMICROBIAL PROPERTIES OF COMPOSITION OF ESSENTIAL OILS OF DIFFERENT ESSENTIAL PLANTS WITH DIFFERENT MAJOR COMPONENTS AND WHITE NAFTALAN (NAPHTHALANE) OIL

АНТИМИКРОБНЫЕ СВОЙСТВА СОСТАВА ЭФИРНЫХ МАСЕЛ РАЗЛИЧНЫХ ЭФИРНЫХ РАСТЕНИЙ С РАЗЛИЧНЫМИ ОСНОВНЫМИ КОМПОНЕНТАМИ И БЕЛОЙ НАФТАЛАНСКОЙ (НАФТАЛАНОВОЙ) МАСЛИ

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Özet

Main text: As it is known, essential oils (EO) are characterized as a complex complex of organic substances and aromatic substances belonging to different classes of organic substances - terpenoids, aromatic and aliphatic compounds, including carbohydrates, alcohols, ketones, aldehydes, organic acids, complex esters, lactones, etc. The biologically active components of EO are mainly considered alcohols, aldehydes, ketones, phenols, including relatively less active hydrocarbons. According to the datareferences, and the results of our research, the component composition of essential oil includes about 500 types of substances. We have used about 20 essential herbs - Anise, Catnip, Gooseberry, Chamomile, Peppermint, St. John's wort, Fenugreek, Transcaucasian thyme, St. John's wort, Wormwood, Wormwood, Celery, Rosemary, Lemon, Sage, Valerian, Jasmine and etc. to get EO. During our research, firsly we tried to clarify the any dependence between the major components contained in the EO we get from these plants and their bactericidal and fungicidal properties.

Result: The obtained results showed that when comparing the bactericidal or fungicidal properties of plants with EY, whose major component is mainly menthol, thymol and cineole, both bactericidal and fungicidal properties of EY containing thymol and cineole are higher compared to menthol. We considered that in this regard, the use of materials obtained from common and bitter wormwood and common sage is more promising. In the other part of our study, we compared the bactericidal and fungicidal properties of the compositions of different essential plants, whose major components are mainly menthol, thymol, and cineole, with each other, as well as with White Naphthalene oil obtained from Naphthalene oil based on high purification technology. As a result, it was found that at least 20-25% higher effect is achieved with essential oils containing thymol and cineol.

Application importance:the possibility of using the mentioned components in medicine, horticulture, horticulture, and veterinary medicine, and at the same time creates additional opportunities for more efficient use of natural resources.The biopreparation prepared on the basis of the compositions obtained from the studied essential oil plants is especially suitable for ensuring mycological (mycotoxin) safety of hazelnuts produced in Azerbaijan.

Key words: essential oils, antifungal, antibacterial, white Naftalan(naphthalene) oil, major component, minor component, fragrances

Аннотация

Введение:Как известно, эфирные масла (ЭМ) характеризуются как сложный комплекс органических веществ и ароматических веществ, принадлежащих к разным классам органических веществ - терпеноидов, ароматических и алифатических соединений, включающих углеводы, спирты, кетоны, альдегиды, органические кислоты, сложные сложные эфиры, лактоны и др. К биологически активным компонентам ЭМ относятся в основном спирты, альдегиды, кетоны, фенолы, в том числе относительно менее активные углеводороды. Согласно справочным данным и результатам наших исследований, в компонентный состав эфирного масла входит около 500 видов веществ. Мы использовали около 20 основных лекарственных растений - анис, кошачья мята, крыжовник, ромашка, мята перечная, зверобой, пажитник, чабрец закавказский, зверобой, полынь, полынь горькая, сельдерей, розмарин, лимон, шалфей, валериана, жасмин и др., чтобы получить ЭО. В ходе нашего исследования, прежде всего, мы попытались выяснить, есть ли какая-либо зависимость между основными компонентами, содержащимися в эфирном масле, которое мы получаем из этих растений, и их бактерицидными и фунгицидными свойствами.

Результат: Полученные результаты показали, что при сравнении бактерицидных или фунгицидных свойств растений с ЭГ, основным компонентом которых являются в основном ментол, тимол и цинеол, как бактерицидные, так и фунгицидные свойства ЭГ, содержащего тимол и цинеол, выше по сравнению с ментолом. Мы посчитали, что в этом плане более перспективным является использование материалов, полученных из полыни обыкновенной и горькой, шалфея обыкновенного. В другой части нашего исследования мы сравнили бактерицидные и фунгицидные свойства композиций различных эфирных растений, основными компонентами которых являются в основном ментол, тимол и цинеол, друг с другом, а также с Белым нафталиновым маслом, полученным из нафталинового масла. на основе технологии высокой очистки. В результате было установлено, что по крайней мере на 20-25% более высокий эффект достигается при использовании эфирных масел, содержащих тимол и цинеол.

Актуальность применения: возможность использования указанных компонентов в медицине, садоводстве, огородничестве и ветеринарии, при этом создает дополнительные возможности для более эффективного использования природных ресурсов. Биопрепарат, приготовленный на основе композиций, полученных из изученных эфиромасличных растений, особенно пригоден для обеспечения микологической (микотоксиновой) безопасности фундука, производимого в Азербайджане.

Ключевые слова: эфирные масла, противогрибковые, антибактериальные, белое нафталановое (нафталиновое) масло, основной компонент, минорный компонент, ароматизаторы.

CHANGES IN THE LEVELS OF ANTI-OXIDANT PEPTIDE GLUTATHIONE IN VARYING IN VITRO CONDITIONS

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ABSTRACT

The main goal of the current study was related to the determination of the levels of reduced glutathione (GSH) after treatment with plant extract on laboratory-incubated normal and malignant cells, treated or non-treated with a chemotherapeutic agent. These investigations were connected with the determination of the role of GSH as a key molecule in the response of various external in vitro-conditions, by changing the direction of cascade mechanisms against oxidative stress (OS), in which this tri-peptide is known to be included. The levels of GSH in normal 3T3 mouse embryonic fibroblasts, mouse malignant myeloma cells, and mixed cultures of both cell types, treated and non-treated with plant extract were assessed before and after treatment with a chemotherapeutic agent. Further studies to determine the levels of GSH-dependent enzymes such as Glutathione-transferase (GST), Superoxide-dismutase (SOD), Catalase (CAT), and beta-galactosidase, included in defense mechanisms against oxidative changes, are necessary.

Keywords: Anti-Oxidant Molecules/GSH, Chemo-Therapeutic Agents, Natural Products/Plant Extracts

CHALLENGES OF THE CONFLICT IN ABKHAZIA IN NEGATIVE PEACE CONDITIONS

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The self-proclaimed Republic of Abkhazia has been living in negative peace conditions for years. Unlike positive peace, which is focused on structural integration, is preventive and optimistic, and peace can only be achieved through peaceful means, in the case of negative peace the situation is completely opposite.

The armed conflict of 2008 started a new phase of relations between Russia and Georgia, which, in turn, affected the conflict regions. Before the war, Russia had the status of "peacekeeper in the region", the involvement of Russia in the armed conflict changed its status.

Lederaj's vision of the peace building process could not be realized in Abkhazia. This was due to the fact that the de facto government of Abkhazia did not even consider the offer of the Georgian government. Based on the above, it can be concluded that in the post-conflict period, Abkhazia is in negative peace conditions.

Analyzing the Lederaj's pyramid of peace building, it was determined that no part of the pyramid is involved in positive peace transformation of conflict. The three-level pyramid, which plays an important role in the peace-building process, has no any positive results.

Based on the above, it can be concluded that the Georgian side participating in the conflict had an attempt to resolve the conflict, although the Abkhazian side was not ready for such a process. Moreover, they did not even express their desire to be involved in any way to stabilize the relationship.

Key Words: Abkhazia, Conflict, Negative Peace, Peacebuilding, Positive Peace, Positive Transformation

APPLICATION OF ARTIFICIAL INTELLIGENCE IN BIOINFORMATICS

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The recent pandemic events in the world have made it necessary to focus the attention of scientists on such directions, using which it is possible to carry out preventive measures for the protection and survival of life and to identify threats. Among them, the most important direction is bioinformatics, which manages and analyzes biological data through computer processing. It combines such areas of science as biology, computer science, and information technology, based on their integrated use, computer processing and statistical analysis of biological information are possible. Molecular structure analysis is performed based on preliminary modeling of biological systems. Bioinformatics consists of the prefix "Bio" which means the knowledge of biological sciences, the purpose of which is to study the laws governing and regulating the life of an organism, and on the other hand, the word computer refers to the process of automated management of data collection, analysis, and organization.
The Major aspects of bioinformatics:
- Organization of databases
- Hypotheses based on calculations
- Web services (online applications/tools)
- Screening of various biological or chemical compounds
- Big data analysis

As mentioned above, bioinformatics mainly studies the fields of molecular biology, as well as cell biology, biomedicine, and biochemistry, which contribute to molecular diagnostics, genetic analysis, genetic improvement of crops, and new drug discovery. The use of artificial intelligence is important for the formation of a successful composition of bioinformatics.

Keywords: Artificial intelligence, Bioinformatics, Intelligent bioinformatics, Logistical regression algorithms

The use of artificial intelligence in bioinformatics increases the accuracy of data analysis and prediction at the molecular level, it is one of the main determinants of the adoption of innovative ideas.
In our work, we use the logistic regression algorithm, based on which you can determine the influence of various parameters affecting a living organism in relation to the stability of its vital indicators. Binary logistic regression helps us test the relationship between a binary dependent variable and more than one independent variable. A dependent binary variable means that it has only two values "0" and "1", which means the operation was successful or completely failed. In the logistic regression analysis, we determine the probability that the independent variables get the value of the dependent variable, "1". It means that it is not the value of the dependent variable that is predicted, but the probability that the dependent variable takes the value "1".

A CASE OF POST-INFECTIOUS EXTERNAL HYDROCEPHALY DUE TO BACTERIAL ENCEPHALITIS IN A KITTEN

YAVRU BİR KEDİDE BAKTERİYEL ENSEFALİTİNE BAĞLI, POST-ENFEKSİYÖZ EKSTERNAL HİDROSEFALİ OLGUSU

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ÖZET

Giriş/Amaç: Eksternal hidrosefali, beyin omurilik sıvısı (BOS) oluşumundaki artış veya emilimindeki azalma nedeniyle subaraknoid boşluklarda aşırı BOS biriktiği durumdur ve veteriner tıbbında nadir olarak gözlenir. Post-enfeksiyöz hidrosefali, sıklıkla piyojenik veya tüberküloz meningoensefalitine bağlı, nadir olarak da diğer merkezi sinir sistemi patolojilerine sekonder olarak gelişir. Bu vakada, özel bir veteriner kliniğine getirilen 6 haftalık yavru bir kedide bakteriyel ensefalite sekonder gelişen, nadir gözlenen eksternal hidrosefali olgusunu histopatolojik sonuçları ile tanımlıyoruz.
Olgu Sunumu: Yavru kedinin genel muayenesinde genel kötü olmasının yanısıra, dehidrasyon ve hemogram sonuçlarında lökositoz olduğu görüldü. Frontal ve oksipital bölgede şişkinlik ile kraniyofasiyal orantısızlık dikkati çekti. Konvansiyonel röntgen grafilerinde, genişlemiş kafatasında, hiperekoik alanlarla karakterize muhtemel sıvı varlığından şüphe edildi. İntravenöz yolla %0,9 NaCl, %5 dekstroz, klindamisin ve prednisolon uygulanan kedi, kısa bir süre sonra eks oldu. Yapılan nekropside, meningeal damarlarda hiperemi ve epidural hematom, kranial sütüraların diyaztazı ve subaraknoid aralıkta seröz karakterde sıvı gözlendi. Alınan örneklerin histopatolojik incelemelerinde, beyin parankiminde inflamatuar hücre infiltrasyonu, gri maddede yaygın reaktif astrositik gliosis ve ayrıca mikroglial aktivasyon görüldü. Ayrıca parankimal ve parankim dışındaki alanlarda yoğun miktarda bulunan bakteri kümeleri dikkati çekti. Tüm bulgular doğrultusunda, bu vakaya post-enfeksiyöz eksternal hidrosefali tanısı kondu.

Anahtar Kelimeler: Eksternal Hidrosefali, Bakteriyel Ensefalit, Histopatoloji

ABSTRACT

Aim: External hydrocephalus is a condition in which excessive cerebrospinal fluid (CSF) accumulation in the subarachnoid spaces due to increased CSF formation or decreased absorption is observed rarely in veterinary medicine. Post-infectious hydrocephalus often develops secondary to pyogenic or tuberculous meningoencephalitis, and rarely secondary to other central nervous system pathologies. In this case, we describe a rare case of external hydrocephalus secondary to bacterial encephalitis in a 6-week-old kitten brought to a private veterinary clinic, with histopathological results.

Case Report: In the general examination of the kitten, her general condition was poor, she had dehydration and leukocytosis in the hemogram results. Examination of the skull revealed swelling in the frontal and occipital regions and craniofacial disproportion. The possible presence of fluid in the enlarged skull, characterized by hyperechoic areas, was suspected on conventional X-rays. The cat, who was administered 0,9% NaCl, 5% dextrose, clindamycin and prednisolone intravenously, died after a short time. In the necropsy, hyperemia and epidural hematoma in the meningeal vessels, diastasis of the cranial sutures and serous fluid in the subarachnoid space were observed. In the histopathological examination of the samples, inflammatory cell infiltration in the brain parenchyma, diffuse reactive astrocytic gliosis in the gray matter and microglial activation were observed. In addition, dense bacterial clusters in parenchymal and non-parenchymal areas were noted. In line with all the findings, this case was diagnosed as post-infectious external hydrocephalus.

Keywords: External Hydrocephalus, Bacterial Encephalitis, Histopathology

ON HERMITE-BELL BASED STIRLING NUMBERS OF THE FIRST AND SECOND KINDS

BİRİNCİ VE İKİNCİ TÜRDEN HERMİTE-BELL TABANLI STIRLİNG SAYILARI ÜZERİNE

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ÖZET

Özel polinomlar ve sayılar, fizik, matematik, uygulamalı bilimler, mühendislik ve diferansiyel denklemler, sayı teorisi, fonksiyonel analiz, kuantum mekaniği, matematiksel analiz, matematiksel fizik ve diğer ilgili araştırma alanları gibi bilimlerin çok çeşitli alanlarında büyük öneme sahiptir. Örneğin, Bernoulli polinomları ve sayıları, asal sayıların dağılımı ile bağlantısı olan Riemann zeta fonksiyonu ile yakından ilişkilidir. Özel polinomlar teorisindeki en önemli polinomlardan bazıları Gould-Hopper, Bell, Euler, Bernoulli, Hermite ve Genocchi polinomlarıdır. Son zamanlarda, yukarıda bahsedilen polinomlar ve bunların çeşitli genellemeleri, birçok fizikçi ve matematikçi tarafından yoğun bir şekilde düşünülmüş ve araştırılmıştır. Son zamanlarda, polylogaritma fonksiyonu ve çok üslü fonksiyon tarafından genelleştirilen birkaç özel polinom ve dejenere üstel fonksiyon tarafından genişletilen çeşitli özel polinomlar birçok yazar tarafından incelenmiştir. Bu çalışmada, Hermite-Bell tabanlı ikinci tür Stirling polinomlarının ve α. mertebeden Hermite-Bell tabanlı Bernoulli polinomlarının tanımından ilham alarak, Hermite-Bell tabanlı birinci tür Stirling polinomlarını ele aldık ve bazı yararlı ilişkiler türettik. Daha sonra Bell polinomları ve Hermite polinomlarını içeren bazı toplam formüllerini elde ettik. Ardından, ikinci tür ve birinci tür Stirling polinomlarını içeren çok yönlü bağıntıları ve formülleri araştırdık. Ayrıca, Hermite-Bell tabanlı birinci tür Stirling polinomlarını için çeşitli kapalı toplam formülleri ve simetrik özellikler elde ederiz. Ayrıca, sonuçların bazı özel durumlarını analiz ettik.

Anahtar Kelimeler: Hermite polinomları, Bell polinomları, Stirling sayıları.

ABSTRACT

Special polynomials and numbers possess much importance in multifarious areas of sciences, such as physics, mathematics, applied sciences, engineering, and other related research fields covering, differential equations, number theory, functional analysis, quantum mechanics, mathematical analysis, mathematical physics, and so on. For example, Bernoulli polynomials and numbers are closely related to the Riemann zeta function which possesses a connection with the distribution of prime numbers. Some of the most significant polynomials in the theory of special polynomials are the Gould-Hopper, Bell, Euler, Bernoulli, Hermite, and Genocchi polynomials. Recently, the aforesaid polynomials and their diverse generalizations have been densely considered and investigated by many physicists and mathematicians. Recently, several special polynomials generalized by the polylogarithm function and polyexponential function and diverse special polynomials extended by the degenerate exponential function have been studied by many authors. In this study, by inspiring and motivating the definition of Hermite-Bell based Stirling polynomials of the second kind and the Hermite-Bell based Bernoulli polynomials of order α, we consider Hermite-Bell based Stirling polynomials of the first kind and derive some useful relations and properties including some summation formulas related to the Bell polynomials and Hermite polynomials. Then, we investigate multifarious correlations and formulas including the Stirling polynomials of the second kind and the first kind. Also, we acquire diverse implicit summation formulas and symmetric identities for Hermite-Bell based Stirling polynomials of the first kind. Furthermore, we analyze some special cases of the results.

Keywords: Hermite polynomials, Bell polynomials, Stirling numbers.

IN VITRO ANTICANCER ACTIVITY OF TWO CAMPHOR DERIVATIVES AGAINST LUNG CANCER CELLS

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ABSTRACT

The successful design of antitumour drugs often combines in one molecule different biologically active subunits that can affect various regulatory pathways in the cell and thus achieve higher efficacy. Two ferrocene derivatives, DK-164 and CC-78, with different residues were tested for cytotoxic potential on non-small lung cancer cell lines, A549 and H1299, and non-cancerous MRC5. DK-164 demonstrated remarkable selectivity toward cancer cells and more pronounced cytotoxicity against A549. The cytotoxicity of CC-78 toward H1299 was even higher than that of the well-established anticancer drugs cisplatin and tamoxifen, but it did not reveal any noticeable selective effect. DK-164 showed predominantly pro-apoptotic activity in non-small cell lung

carcinoma (NSCLC) cells, while CC-78 caused accidental cell death with features characteristic of necrosis. The level of induced autophagy was similar for both substances in cancer cells. DK-164 treatment of A549, H1299, and MRC5 cells for 48h significantly increased the fluorescence signal of the NFkB (nuclear factor 'kappa-light-chain-enhancer' of activated B-cells) protein in the nucleus in all three cell lines, while CC-78 did not provoke NFkB translocation in any of the tested cell lines. Both compounds caused a significant transfer of the p53 protein in the nucleus of A549 cells but not in non-cancerous MRC5 cells. In A549, DK-164 generated oxidative stress close to the positive control after 48h, while CC-78 had a moderate effect on the cellular redox status. In the non-cancerous cells, MRC5, both compounds produced ROS similar to the positive control for the same incubation period. The different results related to the cytotoxic potential of DK-164 and CC-78 associated with the examined cellular mechanisms induced in lung cancer cells might be used to conclude the specific functions of the various functional groups in the ferrocene compounds, which can offer new perspectives for the design of antitumour drugs.

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Keywords: ferrocene derivatives; lung cancer; cytotoxicity; apoptosis; autophagy

REDEFINING THE PHOTOGRAPHER IN THE AGE OF COMPUTATIONAL PHOTOGRAPHY. CASE STUDY ON SMARTPHONE PHOTOGRAPHY APPLICATIONS

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ABSTRACT

Camera technologies in the age of digital media production are not limited to hardware. Instead, the software is taking a fundamental role in photography. Unlike the early examples of digital image compression algorithms such as JPEG, the modern camera can identify the object in the frame. This leap in technology is defined as computational photography. But it puts modern photography in controversy as software-based imaging technology simply interprets the image by choosing efficient pixels for compression, producing new ones for "better" images, and even blurring outs some in terms of "beauty".

In this paper, popular photography applications are reviewed in terms of how they intervene in the image. By checking the cultural practices of media consumption and technologies of digital photography, the study tries to relocate the modern location of the photographer while taking a photograph. First, media consumption. Capabilities of the modern applications show that practically apps can upload users' photos to big data libraries for machines to learn "better photography". Users can access other users' filters, replicate their aesthetic skills, or simply "barrow" other photographs to generate their mixed media. This simply defines a modern kind of photographer who socially generates a collaborative photographic aesthetic. Latter, digitalization of photography. Modern computational photography can virtually skins the moon with pre-generated moon images. It can virtually put makeup on your face, get rid of facial wrinkles, and merges different photographs for a better color range, but without any intention of the photographer. Hence, the modern definition of authorship is more complicated. Technologies that enable photographs to be collaboratively edited, shared and generated in multi-user libraries. Hence, this directs this paper's questions into new, multiple forms. Is there any photographer left behind the camera or simply, if we are perplexed to find a photographer, how can we know what photography is?

Keywords: Digital, Camera, Computitional Photography

SIRTIGÖKÇE MANTARINDAN (Russula Cyanoxantha, L.) POLİFENOL OKSİDAZ ENZİMİNİN ELDE EDİLMESİ VE SAFLAŞTIRILMASI

EXTRACTION AND PURIFICATION OF POLYPHENOL OXIDASE ENZYME FROM SIRTIGÖKÇE MUSHROOM (Russula Cyanoxantha, L.)

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ABSTRACT

Wild and edible Sırtıgökçe mushroom (Russula cyanoxantha, L.) was collected in the countryside of Karabük city. Polyphenol oxidase enzyme was extracted and partially purified from Russula cyanoxantha, then enzyme's biochemical and kinetic properties were characterized. After optimization of parameters of extraction step, homogenized solution was subjected to the ammonium sulfate salt precipitation process. The precipitate was cleaned by dialysis then, the resulting enzyme solution was loaded to the affinity column and partially purified by gel chromatography. Protein content in enzyme solutions were determined and enzyme activity measurements were performed. Yield and purification factor were calculated as %11,30 and 9,33. To investigate substrate specificity of polyphenol oxidase enzyme, nine different substrates were used for enzyme activity measurements. Highest activities were obtained by catechol and L-Dopa. Optimum measurement pH and temperature were obtained as 7.0 and 10℃ in the existence of catechol and 7.0 and 30℃ for L-Dopa. By using catechol substrate, optimum extraction pH, pH and termal stability were obtained. Kinetic parameters of Russula cyanoxantha enzyme, V_{max} (maximum reaction rate) and K_m (substrate affinity) were determined as 1,965 μmol min^{-1} and 1,769 mM by catechol and 1,369 μmol min^{-1} and 15,193 mM by L-Dopa. Enzyme keep its activity for one year at –18℃. Several inhibitors and their affect on enzyme activity were investigated. This study provides important contribution to the the usage of Russula cyanoxantha polyphenol oxidase in industry and the control of browning reactions occuring during the processes of cultivation, preparation and packaging of Sırtıgökçe mushroom as food.

Keywords: Polyphenol oxidase, Enzyme extraction, Purification, Russula cyanoxantha

ÖZET

Yabani ve yenilebilir bir mantar olan Sırtıgökçe mantarı (Russula cyanoxantha) Karabük şehrinin kırsal bölgelerinden elde edildi. Russula cyanoxantha polifenol oksidaz enzimi ekstrakte edildi ve kısmen saflaştırıldı, biyokimyasal ve kinetik özellikleri karakterize edildi. Enzim ekstraksiyonunun parametreleri optimize edildikten sonra elde edilen homojenata amonyum sülfat tuzuyla çöktürme işlemi uygulandı. Çökelti diyalizle temizlendikten sonra elde edilen enzim çözeltisi affinite kolonuna uygulanarak jel kromatografisi ile kısmen saflaştırıldı. Protein tayinleri ve enzim aktivite ölçümleri yapılarak saflaştırma verimi %11,30, saflaştırma derecesi ise 9,33 olarak hesaplandı. Polifenol oksidaz enziminin substrat spesifikliğini incelemek amacıyla dokuz farklı substrat enzim aktivite ölçümlerinde kullanıldı. En yüksek aktivite katekol ve L-Dopa ile elde edildi. Optimum ölçüm pH ve sıcaklık değerleri sırasıyla katekol için 7,0 ve 10 ℃ olarak, L-Dopa için 7,0 ve 30 ℃ olarak saptandı. Katekol substratı kullanılarak optimum ekstraksiyon pH'ı, enzimin pH ve termal kararlılığı araştırıldı. Russula cyanoxantha enziminin kinetik parametreleri, V_{max} (maksimum reaksiyon hızı) ve K_m (substratın enzim ilgisi) belirlendi. Bu değerler katekolle yapılan ölçümlerde 1,965 µmol dk^{-1} ve 1,769 mM olarak L-Dopa ile yapılan ölçümlerde 1,369 µmol dk^{-1} ve 15,193 mM olarak hesaplanmıştır. Enzimin –18 ℃'da bir sene aktivitesini koruyabildiği saptanmıştır. Farklı inhibitörler ve bunların enzim aktivitesine etkisi araştırıldı. Bu çalışma, Russula cyanoxantha polifenol oksidazının endüstride kullanımına ve Sırtıgökçe mantarının gıda olarak yetiştirilmesi, hazırlanması ve paketlenmesi işlemleri sırasında oluşan kahverengileşme tepkimelerinin kontrolüne önemli katkı sağlar.

Anahtar kelimeler: Polifenol oksidaz, enzim ekstraksiyonu, saflaştırma, Russula cyanoxantha

A SOCIOLOGICAL ASSESSMENT OF THE RELATIONSHIP BETWEEN URBANIZATION AND CRIME

KENTLEŞME ve SUÇ İLİŞKİSİ ÜZERİNE SOSYOLOJİK BİR DEĞERLENDİRME

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ÖZET

Kent yalnızca yaşanan bir mekân değil, aynı zamanda, insanları etkileyen ve onlardan etkilenen toplumsal, kültürel ve ekonomik bileşenleri içeren bir bütündür. Kentlerin en önemli özelliklerinden biri de çok sayıda ve homojen olmayan nüfusun yaşadığı alanlar olmasıdır. Bir yerleşim yerinin, çeşitli faktörlerin etkisiyle kent olma özelliği kazanmaya başlaması da kentleşme sürecini ifade etmektedir. Dolayısıyla kentleşme bir toplumsal değişim süreci anlamına gelmektedir. Bu toplumsal değişme sürecinden kaynaklanan sosyal çatışmalar toplumsal yapılar arasındaki ahengi zedelemektedir. Yoğun nüfuslu alanlarda yaşamak zorunda kalmanın yol açtığı hızlı tempo ve karmaşık teknoloji gerilimi daha da artırmakta bu da toplumsal düzensizliğe neden olmaktadır. Bu durum toplumsal dayanışma duygusunun ve toplumsal denetimin zayıflaması anlamına gelmektedir. Hızlı değişme durumunda ya da karmaşıklaşmış olan sosyal süreç ve sosyal yapıda, insanlar çoğu kez anomi veya normsuzluk hallerinde yaşar. Bu durumda kent, suç olgusunun ortaya çıkmasının zemini haline dönüşür. Bu ve benzeri nedenlerden dolayı kentler tarih boyunca suç kavramı ile birlikte anılmıştır. Kentlerin yapısı gereği suça kaynaklık ettiği iddiaları çok eskilere dayanmaktadır. Günümüzde de kentler açısından bu durum değişmiş değildir. Heterojen ve kalabalık yapısı, sosyal kontrolün zayıf oluşu, zenginlik ve servetin kaynağı oluşu kentleri suç işlemek için cazip alanlar haline getirmektedir. Bu durumda kentlerdeki toplumsal anominin boyutlarını sınırlayarak suç olgusunun minimize edilmesi için sosyal bağların nasıl güçlendirilebileceği ve ne tür mekanizmalar üreterek bu sorunun aşılacağı önem kazanmaktadır. Sonuçta geleneksel değerlerin yeniden inşa edilmesi veya tahkim edilmesi değil kentsel değerlerin tıpkı geleneksel değerlerin toplumsal dayanışmayı sağlayan mekanizmalar ortaya koyması gibi yeni kurumlar üreterek toplumsal dayanışmayı güçlendirici kurumlar ihdas etmesi gerektiği söylenebilir.

Anahtar Kelimeler: Kent, kentleşme, suç

ABSTRACT

A city is not only a living space, but also a whole containing social, cultural and economic factors that influence and affect people. One of the most important characteristics of cities is that they are areas with large heterogeneous populations. The process of urbanization is also represented by settlements beginning to become cities under the influence of various factors. Urbanization therefore implies a process of social change. The social conflicts that arise from this process of social change undermine the harmony between social structures. The fast pace and complex technology of having to live in densely populated areas creates tensions and social chaos. This means a weakening of social solidarity and social control. In rapidly changing conditions and complex social processes and structures, people often live in a state of anomie and normlessness. In this case, the city becomes a scene of crime. For these and similar reasons, cities have been mentioned in the concept of crime throughout history. Claims that cities are sources of crime because of their structure date back to ancient times. Today, this situation has not changed with regard to cities. A heterogeneous and crowded structure, weak social controls, and a source of wealth and wealth make the city an attractive place to commit crime. In this case, the question is how social cohesion can be strengthened and what mechanisms can be created to overcome it in order to limit the dimension of social anomies in cities and minimize criminal phenomena becomes important. As a result, it can be said that traditional values should not be restructured or strengthened, but urban values should be used in the same way that they reveal the mechanisms by which traditional values provide social solidarity needs to create institutions that strengthen social solidarity by creating new institutions.

Keywords: city, urbanization, crime

THE OPINIONS OF TEACHER CANDIDATES ON SUSTAINABLE ECOLOGICAL RESPONSIBILITY

ÖĞRETMEN ADAYLARININ SÜRDÜRÜLEBİLİR EKOLOJİK DUYARLILIK HAKKINDAKİ GÖRÜŞLERİ

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ÖZET

Sürdürülebilirlik kavramı son yıllarda üzerinde sıklıkla durulan önemli bir konudur. Hızlı nüfus artışının bir sonucu olarak yenilenemeyen kaynakların aşırı tüketilmesi çevre sorunlarına yol açmaktadır. Bu durum ise sürdürülebilir gelecek ve sürdürülebilir bir çevre ihtiyacını ortaya çıkarmaktadır. Nüfusun giderek artması, doğal kaynakların hızla tükenmesi ve kirlenmesi, teknolojinin gelişmesi ile birlikte çevresel atıkların artması çevre sorunlarını da beraberinde getirmektedir. Bu durum hızla artan çevre sorunlarının çözümüne yönelik çalışmaların etkili bir biçimde uygulanması gerektiğini göstermektedir. Çevre sorunları karşısında durabilmenin ilk yolu çevreye duyarlı eğitimli bireyler yetiştirmektir. Çevre eğitiminin amacı ise bireye çevre ve çevre sorunları ile ilgili bilgi, tutum, davranış ve beceri kazandırmaktır. Bu nitelikte bireyler yetiştirmede öğretmen adaylarının çevre eğitimi bilgisi ve ekolojik duyarlılığa algıları oldukça önemlidir. Bu nedenle gelecek nesli yetiştirecek olan öğretmen adaylarının sürdürülebilir ekolojik duyarlılık kavramı ile ilgili görüşlerinin nasıl algılandığı önemli görülmektedir. Araştırmanın amacı, öğretmen adaylarının sürdürülebilir ekolojik duyarlılık hakkındaki görüşlerini ortaya koymaktır. Araştırma, nitel araştırma desenlerinden fenomenolojik (Olgubilim) desen ile yürütülmektedir. Araştırmanın çalışma grubu amaçsal örnekleme yöntemlerinden biri olan kolay ulaşılabilir durum örneklemesi ile belirlenmiştir. Çalışma grubunun, Elazığ Fırat Üniversitesi sosyal bilgiler öğretmenliği, fen bilgisi öğretmenliği ve sınıf öğretmenliği bölümünde öğrenim gören 15-20 öğretmen adayından oluşması planlanmaktadır. Araştırma verileri yarı yapılandırılmış görüşme formu aracılığıyla elde edilecektir. Araştırma sonucunda elde edilen veriler içerik analizi ile çözümlenecek ve nitel veri analiz programı ile değerlendirilecektir. Sonuçlar analiz yapıldıktan sonra sunulacaktır.

Anahtar Kelimeler: Sürdürülebilirlik, Ekolojik duyarlılık, Çevre sorunları.

ABSTRACT

The concept of sustainability is an important issue that has been frequently emphasized in recent years. As a result of rapid population growth, excessive consumption of non-renewable resources causes environmental problems. This situation reveals the need for a sustainable future and a sustainable environment. Increasing population, rapid depletion and pollution of natural resources, and the increase in environmental wastes with the development of technology bring environmental problems. This shows that efforts to solve rapidly increasing environmental problems should be implemented effectively. The first way to stand against environmental problems is to raise educated individuals who are sensitive to the environment. The purpose of environmental education is to provide individuals with knowledge, attitudes, behaviors and skills related to the environment and environmental problems. In raising individuals of this nature, pre-service teachers' knowledge of environmental education and their perceptions of ecological sensitivity are very important. For this reason, it is considered important how the views of teacher candidates who will raise the next generation about the concept of sustainable ecological sensitivity are perceived. The aim of the research is to reveal the views of teacher candidates about sustainable ecological sensitivity. The research is carried out with a phenomenological (phenomenological) design, one of the qualitative research designs. The study group of the research was determined by easily accessible case sampling, which is one of the purposive sampling methods. The study group is planned to consist of 15-20 pre-service teachers studying at Elazig Fırat University, social studies teaching, science teaching and classroom teaching departments. Research data will be obtained through a semi-structured interview form. The data obtained as a result of the research will be analyzed with content analysis and evaluated with a qualitative data analysis program. Results will be presented after analysis.

Keywords: Sustainability, Ecological sensitivity, Environmental problems.

THE PROTECTIVE EFFECT OF INDOLE-3-ACETIC ACID AGAINST CADMIUM STRESS IN REDROOT PIGWEED (Amaranthus retroflexus L.)

İNDOL-3-ASETİK ASİDİN TİLKİ KUYRUĞUNDA (Amaranthus retroflexus L.) KADMİYUM STRESİNE KARŞI KORUYUCU ETKİSİ

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ÖZET

Kadmiyum (Cd), esansiyel olmayan bir ağır metal olup, büyümenin azalması ve klorozis gibi ciddi morfolojik, fizyolojik ve moleküler etkilere neden olmaktadır. Bir karboksimetil ikame edicisi içeren indol türevi olan indol-3-asetik asit (IAA), doğal olarak oluşan en yaygın oksin sınıfı bitki hormonudur. Bu çalışmanın amacı, kadmiyum toksisitesi ile ilişkili oksidatif hasara karşı bazı büyüme parametreleri, yaprak nisbi su içeriği (RWC), elektrolit sızıntısı, klorofil floresansı (Fv/Fm), Cd içeriği ve membranların lipid peroksidasyonu miktarları üzerine IAA'nın olası koruyucu rolünü değerlendirmektir. Sera deneyleri gerçekleştirilmiş olup tohumlar iki ay süre ile büyütülmüştür. Sonrasında, fideler gelişigüzel bir şekilde dört gruba ayrılmıştır: kontrol, Cd (100 µM), IAA (25 µM) ve IAA (25 µM) + Cd (100 µM). On dördüncü günün sonunda, büyüme parametreleri, RWC, elektrolit sızıntısı, Fv/Fm, Cd içeriği ve lipid peroksidasyonunu ölçmek için standart analiz yöntemleri kullanılmıştır. Cd toksisitesi, bitki biyokütlesini ve klorofil floresansını inhibe ederken RWC'de önemli bir değişiklik ($P < 0.05$) kaydedilmemiştir. IAA uygulaması, bitki büyümesini ve tilki kuyruğu bitkisinin Fv/Fm'sini iyileştirmiştir. IAA + Cd gruplarındaki Cd stres toleransı, sadece Cd uygulanan gruplardan daha yüksek belirlenmiştir. Diğer taraftan, Cd, kontrol bitkileri ile kıyaslandığında elektrolit sızıntısı, lipid peroksidasyonu ve Cd düzeylerinde artışa neden olmuştur. Dıştan IAA uygulaması ile Cd'la muamele edilmiş bitkilerdeki elektrolit sızıntısı, lipid peroksidasyonu ve Cd seviyelerindeki artışlar azalmıştır. Sonuç olarak, Amaranthus retroflexus'un Cd toleransını arttırmada dıştan IAA uygulaması önemli bir rol oynamaktadır.

Anahtar Kelimeler: Amaranthus retroflexus, İndol-3-asetik asit, kadmiyum

ABSTRACT

Cadmium (Cd) is a non-essential heavy metal and causes severe morphological, physiological and molecular effects such as growth reduction and chlorosis. Indole-3-acetic acid (IAA), a derivative of indole containing a carboxymethyl substituent, is the most common naturally occurring plant hormone of the auxin class. The aim of this study was to evaluate the role of IAA as a possible protector against oxidative damage associated with cadmium toxicity on some growth parameters, leaf relative water content (RWC), electrolyte leakage, chlorophyll fluorescence (Fv/Fm), Cd content and lipid peroxidation of the membranes. Greenhouse experiments were conducted and seeds were grown for two months. After that, the seedlings were randomly separated into four groups: control, Cd (100 µM), IAA (25 µM) and IAA (25 µM) + Cd (100 µM). At the end of the fourteenth day, standard methods of analysis were used to determine for measuring growth parameters, RWC, electrolyte leakage, Fv/Fm, Cd content and lipid peroxidation. Cd toxicity inhibits plant biomass and chlorophyll fluorescence while there was no significant ($P < 0.05$) change in RWC. The IAA application improved plant growth and Fv/Fm of redroot pigweed plant. The Cd stress tolerance at IAA + Cd groups appeared to be higher than that of Cd groups. On the other hand, Cd caused increases in electrolyte leakage, lipid peroxidation and Cd levels when compared to control plants. With the treatment of exogenous IAA, electrolyte leakage, lipid peroxidation and Cd levels increases of Cd-treated seedlings reduced. In conclusion, exogenous IAA application plays an important role in enhancing the Cd tolerance of Amaranthus retroflexus.

Keywords: Amaranthus retroflexus, Cadmium, Indole-3-acetic acid

THE EFFECTS OF EXOGENOUS MELATONIN ON DROUGHT TOLERANCE IN SUNFLOWER (Helianthus annuus L.)

AYÇİÇEĞİNDE (Helianthus annuus L.) EKSOJEN MELATONİNİN KURAKLIK TOLERANSI ÜZERİNE ETKİLERİ

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ÖZET

Kuraklık, ürün üretimini engelleyen en zararlı abiyotik stres etkilerinden biridir. Ayçiçeği (Helianthus annuus L. cv. 'Metinbey'; Asteraceae) tüm dünyada ekonomik önemi olan yağlı tohumlu bir bitkidir. Bu çalışmanın amacı, dıştan melatoninin uygulamasının kurak koşullar altında yetiştirilen ayçiçeği bitkilerinin morfolojik ve fizyolojik özellikleri üzerine etkilerini araştırmaktır. Bu amaçla, yaprak ve sürgün uzunluğu, yaprak yaş ve kuru ağırlıkları, yaprak nisbi su içeriği (RWC), ozmotik potansiyel (Ψ_w), elektrolit sızıntısı (EL), klorofil floresansı (Fv/Fm), klorofil ve karotenoid içerikleri ölçülmüştür. Sera deneyleri gerçekleştirilmiş ve tohumlar üç ay süre ile büyütülmüştür. Daha sonra bitkiler gelişigüzel bir şekilde seçilerek 4 gruba ayrılmıştır: kontrol, melatonin, kuraklık ve melatonin + kuraklık. Melatonin 5 gün boyunca yapraktan foliar olarak uygulanmıştır. İki haftalık kuraklık stresinden sonra tüm gruplar hasat edilmiştir. Kuraklık stresi, ayçiçeği bitkisinde yaprak yaş ve kuru ağırlıklarını, yaprak ve sürgün uzunluklarını, RWC, Fv/Fm, Ψw, klorofil a, klorofil b, toplam klorofil ve karotenoid içeriğini önemli ölçüde azaltırken, EL miktarını arttırmıştır. Diğer taraftan, melatoninin yapraktan foliar uygulanması kuraklık stresinin olumsuz etkilerini azaltmış; büyüme ve fizyolojik parametreleri iyileştirmiştir. Melatonin uygulaması, kuraklık stresi altındaki ayçiçeği bitkilerinin Fv/Fm (%2,5), RWC (%9,8), Ψw (%16,7) ve klorofil a (%43,9), klorofil b (%46,7), toplam klorofil (%44,5) ve toplam karotenoid (%58.6) içeriği gibi fotosentetik pigment miktarlarını, kuraklık altında yetiştirilen melatonin ile muamele edilmemiş bitkilerle karşılaştırıldığında önemli ölçüde arttırmıştır. Genel olarak, dıştan melatonin uygulamasının ayçiçeği fidelerinde kuraklık toleransını arttırdığı sonucuna varılmıştır.

Anahtar Kelimeler: Ayçiçeği, Helianthus annuus, Kuraklık stresi

ABSTRACT

Drought is one of the most detrimental abiotic stress effect that hampered crop production. Sunflower (Helianthus annuus L cv. 'Metinbey'; Asteraceae) is an oilseed crop having economical importance all over the world. The aim of this study was to investigate the effects of exogenous melatonin treatment on morphological and physiological characteristics of sunflower plants grown under drought conditions. With this aim, leaf and shoot length, leaf fresh and dry weights, leaf relative water content (RWC), osmotic potential (Ψ_w), electrolyte leakage (EL), chlorophyll fluorescence (Fv/Fm), chlorophyll and carotenoid contents were measured. Greenhouse experiments were conducted and seeds were grown for three months. After that, the seedlings were randomly separated into four groups: control, melatonin, drought and melatonin + drought. Melatonin was applied as a foliar spray for 5 days. After two-week of drought stress, all groups were harvested. Drought stress significantly reduced leaf fresh and dry weights, leaf and shoot lengths, RWC, Fv/Fm, Ψ_w, chlorophyll a, chlorophyll b, total chlorophyll and total carotenoid content while increased the amount of EL in sunflower plant. On the other hand, the foliar application of melatonin reduced the adverse effects of drought stress and improved growth and physiological parameters. Melatonin treatment significantly increased Fv/Fm (2.5%), RWC (9.8%), Ψ_w (16.7%) and the photosynthetic pigments such as chlorophyll a (43.9 %), chlorophyll b (46.7 %), total chlorophyll (44.5%) and carotenoid (58.6%) content of drought-stressed sunflower plants as compared non-melatonin-treated plants grown under drought. Overall, it is concluded that exogenous application of melatonin enhances drought tolerance in sunflower seedlings.

Keywords: Drought stress, Helianthus annuus, Sunflower

MATERIAL SELECTION FOR LIGHT MOTOR VEHICLE PISTON FOR 3 DIMENSIONAL PRINTING BY ANALYTICAL HIERARCY TECHNIQUE

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ABSTRACT

A Light Motor Vehicle (LMV) is a wheeled vehicle that carries its own weight and transports from one destination to another. It consists of around 15,000 parts for its sub-systems like engine, transmission, suspension, brake system, electrical systems and chassis and body. LMVs are propelled by Internal Combustion Engines which are fueled by either petrol or diesel. In India around four million vehicles annually which require 16 million pistons. Piston is the part of engine which converts heat and pressure energy liberated by fuel combustion into mechanical works. Engine piston is the most complex component among the automobiles. Pistons are manufactured by several materials like A2618, A4032, A356 ,AlSi10Mg, AlSi12Mg by various LMV Manufacturers and piston requires various attributes like Light in weight, High Strength, Hardness, Elongation , Surface Roughness , Coefficient of Friction, Wear Resistance, Coefficient of Thermal Expansion, Low cycle time and Manufacturing cost. Pistons are also manufactured by 3 D printing process in addition to conventional casting methods. There is no systematic method to evaluate and select the material for piston manufacturing by 3 D Printing. Hence in the present work an attempt has been made to consider mathematical technique of Analytical Hierarchy Process. This addresses multi attribute multi material selection and ranking of material by pair wise comparison method. This will be useful for industrial Engineers for the selection of Piston material, In the present research work five materials and 10 attributes are considered. Comparison of various attributes for LMV piston and calculated priority weights varies from 0.0199 to 0.2312. Higher the priority weight. Similarly pairwise comparison five materials for 10 attributes are calculated. The final composite rating for five materials and 10 attributes are computed. The ranking of materials for the piston are considered based on total composite weights. Higher the composite rating the better the material. AHP technique is found to be simple, easy to calculate and has clear analogy.

Key words: MCDM, Light Motor Vehicles, Piston, 3 D Printing, AHP

GORGONIAN Ellisella sp.-ASSOCIATED BACTERIA AS A PROMISING ANTIPATHOGENIC AGENT AGAINST SKIN DISEASES IN HUMANS

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ABSTRACT

Skin disease is the fourth most common disease in the world, especially in tropical countries with high humidities, including Indonesia. One common treatment to handle this infection is the application of antibiotic drugs. However, the use, often inappropriate, of antimicrobial agents will trigger the emergence of antimicrobial resistance. Therefore, the search for new antibiotic compounds that can fight multidrug-resistant pathogens is urgently needed. The results of previous studies showed that crude extracts from Ellisella sp. have a weak antimicrobial activity. However, reports on the potential of gorgonian-associated bacteria as antimicrobial agents for skin diseases are still under-explored. This study aims to isolate gorgonian Ellisella sp.-associated bacteria with antibacterial activity against the causative agents of skin disease including Cutibacterium acnes, Staphylococcus aureus, and Staphylococcus epidermidis. The agar plug method was used to screen the antimicrobial activity. All active isolates were identified polyphasically and detected genes encoding for the enzyme polyketide synthase (PKS) and non-ribosomal peptide synthesis (NRPS) through a molecular approach. The results demonstrated that a total of 4 among 46 gorgonian Ellisella sp. associated bacterial isolates, BU.19.1, BU.19.2, GL.17.1, and GL.17.8 isolates, showed antimicrobial activity in at least one pathogenic test. Identification through a polyphasic approach obtained BU.19.1, BU.19.2, GL.17.1, and GL.17.8 are closely related to Nacordiopsis salina, Nacordiopsis salina, Bacillus paramycoides, dan Kocuria palustris, respectively. All bacterial isolates were detected to have PKS II and NRPS cluster genes. This study revealed that gorgonian Ellisella sp.-associated bacteria are potential sources of antibacterial compounds for antibiotic development of skin diseases.

Keywords: skin diseases, antimicrobial activity, marine gorgonian, NRPS, PKS

ASIAN SECURITY PARADIGM: A CASE OF COMPETING INTERESTS OF INDIA AND CHINA

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ABSTRACT

The embedded security dynamics (traditional and non-traditional) among competing regional powers shape the security regime of the region. The competition became more intense when rising and contending regional powers endure to influence regional security architecture, to gain possible status of hegemon in the region, inherently lead towards conflictual of interests.

No region has changed as much as Asia in the last three decades. US, China and Japan were the primary powers to reshuffle the balance of power of the Asian Security. However, in the last few decades, China and India are among the rising powers, return of geopolitics, changing balance of power and instability heightening the uncertainty, unleashed by the continuing crisis of world economy.

As Asia's largest and most rapidly growing powers in contemporary global politics, relations between India and China have been conditioned by the emerging strategic-diplomatic chessboard of Asia. An underlying climate of mistrust and threat perception continue to permeate the relationship rooted in the unresolved territorial disputes, contest for hegemonic status and wider diplomatic tensions (notably China-Pakistan ties, India-USA- Japan engagement, and US-China strategic competition).

This research paper critically analyses the interplay of security dimensions exiting between India and China and other regional powers causing regional security arrangement upset to contain strategic space of each other. It further explores the security challenges ahead and assess Asia's security profile in the current geopolitical paradigm, especially in the context of involvement, interests, and behaviour of India and China towards shifting balance of Power in the region. Lastly, it concludes with findings.

Key words: India-China relations, regional security, geopolitics, Asian security

PREVALENCE OF GASTROINTESTINAL HELMINTS IN CATTLE IN NORTHEASTERN PART OF SERBIA (BANAT)

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ABSTRACT

Banat is northeastern part of Serbia**,** and is limited by the flows of the Danube river in the south, the Tisza river in the west, the Serbian-Romanian border in the east and the Serbian-Hungarian border in the north. Banat are abundant in grasslands where catlle grazing is mainly semi-intensive. In pasture breed condition helminth infections are common especially during late spring and autumn months. Research on the parasitofauna of cattle in Banat has not been done for more than fifty years, and that was the reason why we renewed these examination.During our study performed on 2019 we examined faeces of 177 cattle from 31 herds and 47 cattle by post-mortem examination. Determination of eggs and adult parasites performed on their morphological characteristics. The coprological examination established the presence of gastrointestinal helminth eggs in 41.6% of samples. The majority of cattle were infected with two and fewer number with three or four parasite species. At post-mortem examination of cattle we found Ostertagia ostertagi in 65,63%, O.trifurcata in 61,53%, Trichonstrongylus colubriformis in 57,57%, Paramphistomum ichikawai. 36.17%, Toxocara vitulorum in 32.52%, Strongyloides papillosus in 21.51%, Dicocelium dendriticum in 19.97%, T.axei in 17,23%, Haemonchus contortus in 6.52%, Trichuris discolor in 6.21%, and Moniezia benedeni in 2,23%. The result of this study shows a moderately high prevalence of gastrointestinal helminth infection of cattle with both economic (reduced growth rate and milky) and zoonotic importance. This indicates the need to continue these researches in order to control parasitic infections in cattle.

Keywords: gastrointestinal helmints, cattle, Banat, Serbia

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DIFFERENCES IN THE KNOWLEDGE OF PREGNANT WOMEN ABOUT EXCLUSIVE BREASTFEEDING IN THE HEALTH DEVELOPMENT CLINIC IN SIMALUNGUN DISTRICT

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ABSTRACT

Exclusive breastfeeding is defined by (WHO), namely breastfeeding infants with only breast milk for the first six months of a baby's life. According to Basic Health Research (Riskesdas) data, the rate of Early Breastfeeding Initiation (IMD) in Indonesia increased by 58.2% in 2018 from 35.2% in 2013. Despite the increase, the figure is still far from the target of 80%, where IMD has a very decisive role in the success of the breastfeeding process. According to Assriyah (2020), several factors can influence mothers in exclusive breastfeeding, one of which is knowledge.

The purpose of the study was to determine the difference in knowledge of pregnant women before and after being given health education about exclusive breastfeeding at the health development clinic in Simalungun District.

The research method used is quasi-experimental. The research design is pre and post-test design. The population in this study was pregnant women with normal pregnancies, and the sample in this study was 20 pregnant women at the Health of Development Clinic, Simalungun District. The results showed that almost all the 19 respondents (95%) were reproductive aged (20-35 years). Before being given health education show that the median value of knowledge was 70 (40-80) and after being given health education median value of knowledge was 80 (60-93.33).

There is a difference in maternal knowledge about exclusive breastfeeding before and after being given health at the Health Development Clinic in Simalungun Regency with a median value ($p < 0.001$). Health education can give to increase the mother's knowledge

Keywords: exclusive breastfeeding, Knowledge, Health Education

PARIS AGREEMENT IN INDIA: EFFORT TOWARDS MITIGATING CLIMATE CHANGE

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Abstract

Paris Agreement is an international treaty on climate change. The agreement was adopted by 197 parties to the UN Framework Convention on Climate Change (UNFCC) at 21st Conference of the Parties (COP 21) on 12 December 2015 in Paris. The agreement aims to strengthen the global response to the threat of Climate Change. After approximately 8 years of the agreement, the momentum of global warming is going up day by day which is a serious concern for globe. Every decade is warmer than its prior. The statistics shows that last five years (2015-2020) were the warmest on record. Natural disasters are more common which indicates that natural system of earth is disturbed. The rising sea levels indicates that the world is moving closer to face irreversible changes which may be beyond imagination. The rapid increase in global warming is attributed to Green House Gas emissions particularly to Carbon dioxide. The increasing temperature of earth is making an alarming situation to the world community. This indicates that world community desperately needed to adopt climate favor practices.

Paris agreement is the first and important step to combat the issue. The agreement set aggressive goal to keep global warming below 2 degrees Celsius – specifically 1.5 degree Celsius has been accepted by policymakers from all over the world in Paris in 2015. The pledge to reduce greenhouse gas emissions and to focus on net zero carbon emission are also an important initiative in this direction.

India has ratified the Paris Agreement and committed to -reduce Green House Gas emission intensity of its GDP by 33-35 percent by 2030, - shift India's 40 percent power capacity on non-fossil fuels, - and the country will create additional 'carbon sink' of approximately 3 billion tonnes of carbon di oxide. To fulfill the commitments to COP 21 towards Climate Change, India has taken concrete steps and efforts. Promotion to Solar appliances, research for biodiesel, increasing registration of electric cars, shifting to renewable energy, ban on single use plastic, stimulation to reduce, reuse and recycle are some efforts taken in conformity with the Paris Agreement. The initiatives indicate that will achieve its promised goals very soon and will lead the initiatives.

Keywords: Climate Change, Global Warming, Net Zero Carbon Emission, Paris Agreement

DEVELOPMENT OF A TESTING SETUP TO ESTIMATE THE PERMEABILITY OF COMPOSITE MATERIALS

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ABSTRACT

Pressure vessels are used to store a liquid or a gas. The great advantage of using a pressure vessel made of composite material over pressure vessels made of metal alloys and those that have a liner, is its reduced weight. In the aerospace industry, weight is highly valued, as any reduction in weight is advantageous when sending satellites into orbit. In this work, a testing setup was developed that determines the permeability of a sample of composite material representative of type V pressure vessels. The setup is based on placing a sample of the pressure vessel between two chambers and compacting the three components. Afterwards, the gas, which the pressure vessel will store, is injected into one of the setup chambers. In the other chamber, the pressure variation is measured with the aid of a pressure transducer. After obtaining the data from the second chamber pressure transducer, it is possible to calculate the permeability of the sample. Few materials with good permeability characteristics were tested, some alternatives were considered during the design, and the justifications of each characteristic that was included in the setup were presented. Permeability tests were also carried out and the results obtained were analyzed. In conclusion, the tests performed were successful, the setup was created as planned and it is operational. The results obtained from the setup were compared with literature data and showed to be similar.

Keywords: Aerospace vehicles; Composite materials; Mechanical design; Pressure vessel; Type V; Permeability tests.

SOME SPECIFICS OF TRANSPORTATION OF ILL AND INJURED

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ABSTRACT

Objective. During accidents that take place outside traffic highways one of the most important goals of first aid is primary transport of ill and injured patients. The choice of method of primary transport is defined by the state of patient as well as the number of people providing care and equipment.
Methods. The study reviews relevant literature and discusses transport by one person(on his/her back), transport by hands, transport on the person's shoulder, as well as transport by two people(by the "lock" from four hands, by the "lock" from three hands, and transport by the method "one after the other"). The study also review the methods of transport by equipment using the easiest transport method- strap. The best method of transport is using stretcher.
Results. It is suggested that for the purpose of transport several recommendations should be followed when using stretcher:
The taller carrier should carry the back part of the stretcher
The carriers should move fast but rather in short steps
When moving on an incline the stretcher should be in horizontal position; when climbing the carrier who is behind rise stretcher, and when going downhill carrier who is ahead rise stretcher
When carrying the ill and injured person during cold season the person should be warmly covered
Conclusions. The incorrect transport of ill and injured people can lead to the additional complications such as pain shock, increased bleeding, deterioration of breathing and others. Therefore, it is important to correctly follow rules of transport of ill and injured people.

Keywords: transportation of ill and injured, primary transport, stretcher

ESTIMATION OF WHEAT YIELD UNDER COMBINATIONS OF DIFFERENT CLIMATE PARAMETERS WITH THE LINTUL MODEL IN THE THRACE REGION

TRAKYA BÖLGESİ'NDE LINTUL MODEL İLE FARKLI İKLİM PARAMETRELERİ KOMBİNASYONLARINDA BUĞDAY VERİM TAHMİNİ YAPILMASI

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ABSTRACT

It is common knowledge that climate change will affect the agricultural sector as well as many other sectors. Therefore, it is vital importance to know how agriculture will be affected by climate change. It is necessary to know the impact of climate change on wheat yield, which is one of the most important elements of agricultural production as grown in Turkiye and particularly in the Thrace Region, which is known for the fertile agricultural lands. Because being able to determine the impact of climate change on agriculture and even yield is of great importance for states in terms of agriculture and food sector in order to be prepared for the advers affect of climate change, to take precautions and to develop strategies. The aim of this study is to make a yield estimation in line with possible climate change scenarios in the Thrace Region. In order to achieve this aim, firstly, the yield value obtained from a wheat plantation in Malkara District of Tekirdağ Province in the period of 2020-2021 was calibrated by comparing the yield value obtained with the LINTUL model. The estimated wheat yield values were obtained using the LINTUL Model applying 27 different temperature-precipitation, temperature-solar radiation scenario combinations, i.e., by increasing the long term average minimum and maximum temperature values by 1, 2 and 3°C, increasing and decreasing the average precipitation values by 10%, 20% and 30%, and increasing the solar radiation values by 10%, 20% and 30%. As a result, the lowest wheat yield was forecasted when long term average minimum temperature and maximum temperature values were increased by 1°C and similarly when the precipitation amount was reduced by 30%. The highest wheat yield was estimated when the long term average minimum temperature and maximum temperature values were increased by 3°C and the solar radiation value was increased by 30% at the same time.

Keywords: Yield estimation, LINTUL, Wheat

ÖZET

İklim değişikliğinin birçok sektör ile birlikte tarım sektörünü de etkileyeceği bilinen bir gerçektir. Dolayısıyla tarımın iklim değişikliğinden nasıl etkileneceğinin bilinmesi çok önemlidir. İklim değişikliğinin ülkemizde ve özellikle verimli topraklara sahip Trakya Bölgesi'nde yetiştirilen ve tarımsal üretimin en önemli öğelerinden biri olan buğday verimine etkisinin bilinmesi gerekmektedir. Çünkü iklim değişikliğinin tarıma ve hatta verime etkisini belirleyebilmek devletler için tarım ve gıda sektörü açısından iklim değişikliğine karşı hazırlıklı olabilmek, önlemler alabilmek ve stratejiler geliştirebilmek için büyük önem arz etmektedir. Bu çalışmanın amacı, Trakya Bölgesi'nde olası iklim değişikliği senaryoları doğrultusunda verim tahmini yapabilmektir. Bu amaca ulaşmak için öncelikle 2020-2021 döneminde Tekirdağ İli, Malkara İlçesinde buğday ekili bir tarladan elde edilen verim değeri, LINTUL model ile elde edilen verim değeri ile karşılaştırılarak kalibre edilmiştir. Daha sonra ise LINTUL Model ile uzun yıllar ortalama minimum ve maksimum sıcaklık değerlerini 1, 2 ve 3°C artırarak, yağış değerlerini %10, %20 ve %30 artırarak ve azaltarak, ayrıca uzun yıllar ortalama minimum ve maksimum sıcaklık değerlerini 1, 2 ve 3°C artırarak ve güneş radyasyonu değerlerini %10, %20 ve %30 artırarak oluşturulan 27 farklı sıcaklık yağış ve sıcaklık güneş radyasyonu senaryo kombinasyonlarının birlikte uygulanması ile verim tahmini yapmak ve olası iklim değişikliğinin buğday verimine etkisini belirlemektir. Sonuç olarak en düşük buğday verim tahmini uzun yıllar ortalama minimum sıcaklık ve maksimum sıcaklık değerlerinin 1°C artırılması ve aynı zamanda yağış miktarının %30 azaltılması durumunda, en yüksek buğday verim tahmini ise uzun yıllar ortalama minimum sıcaklık ve maksimum sıcaklık değerlerinin 3°C artırılması ve aynı zamanda güneş radyasyonu değerinin %30 arttırılması durumunda elde edilmiştir.

Anahtar Kelimeler: Verim tahmini, LINTUL, Buğday

ВОСТОК И ЗАПАД: ПУТИ ПЕРЕСЕЧЕНИЯ В СОВРЕМЕННОЙ МОДЕ

EAST AND WEST: ROUTES OF CROSSING IN MODERN FASHION

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ТЕЗИС

В статье рассказывается о слиянии восточной и западной эстетики, о дизайнерах, повлиявших на процесс создания и соединения культур, о влиянии истории, политики, современных дизайнеров, использующих синтез двух этнических культур Востока и Запада. Начиная с 17 века, когда шла активная торговля с Турцией, благодаря чему удивительные турецкие ткани появились и в Европе, и в России. С тех пор восточные мотивы были в авангарде западной моды, затем ненадолго ушли в тень. Самым ярким и запоминающимся стилем стал восточный, имевший названия «гарем», «японизм», «египтомания». Во многих проектах ультрасовременных дизайнеров присутствует восточная традиция, духовно обогащающая предметный мир западного человека. Восток очень интересен для современного дизайна, так как содержит в себе важные качества. Ценным опытом является восточный традиционализм - способность восточной культуры сохранять и поддерживать традиции на протяжении многих веков.

Примеры синтеза восточных и западных традиций дизайна одежды убеждают, что именно диалог культур способен придать современной культуре столь необходимые ей экологические качества.

Ключевые слова: Восток, Запад, дизайнеры, мода, стиль, традиция, культура.

ABSTRACT

The article tells about the fusion of the of Eastern and Western aesthetics, about designers who influenced the process of creating and connecting cultures, about the influence of history, politics, modern designers using the synthesis of two ethnic cultures of East and West. Starting from the 17th century, when there was an active trade with Turkey, thanks to which amazing Turkish fabrics appeared both in Europe and Russia. Since then, oriental motifs have been at the forefront of Western fashion, then briefly faded into the shadows. The most striking and memorable style was the oriental, which had the names "Harem", "Japanism", "Egyptomania". In many projects of ultra-modern designers, there is an oriental tradition, spiritually enriching the objective world of a Western person. East is very interesting for modern design, because it contains important qualities. A valuable experience is oriental traditionalism - the ability of oriental culture to preserve and maintain tradition for many centuries.

Examples of the synthesis of Eastern and Western traditions clothing design convinces that it is the dialogue of cultures that can give modern culture the ecological qualities it needs so much.

Key words: East, West, designers, fashion, style, tradition, culture.

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THE BLACK SEA AND NUCLEAR SECURITY -GAUGUNG THE CONCERN OF TRAFFICKING IN CONTESTED SPACES AND THE MULTINATIONAL POTENTIAL

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ABSTRACT

The wider Black Sea region has seen some of the biggest recorded instances of nuclear material trafficking. Despite changes in the wider security environment, nuclear security stakeholders have often indicated that the majority of countries in the region have not considerably revised their national nuclear security risk assessments. Ukraine is an extraordinary case when compared to other countries as it faces very serious and specific risks pertaining to nuclear security on land as well as the maritime domain. These risks include but are not confined to, the concern and challenge of reconstruction and adaption of legal and administrative elements of the national regime on nuclear security specifically during the emergency conditions. Some of the most major known examples of illicit nuclear material trafficking have occurred in the larger Black Sea region, in addition to losing situational awareness of the location as well as the movement of nuclear material and radioactive sources. It is thus critical to comprehend if nuclear security concerns have increased or decreased as a result of recent changes in the region, notably the conflict in Ukraine. The objective of this research study thus is to understand the nuclear security scenario and risks associated with countries in the region in light of the fact that nuclear security stakeholders have themselves suggested that many countries in the region have not taken any drastic measures to strengthen the risk, despite being aware and witnessing the changes in the wider security environment. The doctrinal study based on secondary sources will determine whether recent events in the region, including the conflict in Ukraine, have led to an increase or decrease in nuclear security concerns.

Key words: Nuclear security, Ukraine crisis, black sea region, nuclear trafficking, national security.

THE PROPERTIES OF THE IGNEOUS GRAVELS WITHIN THE ASMABOĞAZI FORMATION (AKSARAY), CENTRAL ANATOLIA, TURKEY

ASMABOĞAZI FORMASYONU (AKSARAY) İÇERİSİNDEKİ MAGMATİK BİLEŞİMLİ ÇAKILLARIN ÖZELLİKLERİ, ORTA ANADOLU, TÜRKİYE

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ÖZET

Orta Anadolu Kristalen Kompleksi (OAKK), Orta Anadolu'da Ankara–Sivas–Ulukışla arasında yer alan üçgen biçimindeki alanda yüzeylenir. OAKK genel olarak dört ana kaya grubundan oluşmaktadır. Bunlar Orta Anadolu Metamorfikleri (OAM), Orta Anadolu Ofiyolitleri (OAO), Orta Anadolu Felsik (OAF) ve Orta Anadolu Mafik (OAM) intrüzifleri ile tüm bu temel birimlerin üzerini uyumsuz bir şekilde örten sedimanter ve Orta Anadolu volkanizmasına ait ürünlerdir. Üst Kretase yaşlı sedimanter birimler Maestrihtiyen-Kampaniyen yaşlı Kartal Formasyonu ve Maestrihtiyen yaşlı Asmaboğazı Formasyonu'dur. Bunlar Tuz Gölü Fayı (TGF)'nın doğusundaki yükseltilerde tipik yüzlekler vermektedir. Bu birimlerin yaşları önceki literatürde fosil içeriklerine ve stratigrafik konumlarına göre belirlenmiştir. Belirtilen bu formasyon çökellerinde gözlenen çakıllar çoğunlukla magmatik kökenlidir. Bu çalışmanın amacı Asmaboğazı Formasyonu içerisindeki magmatik kökenli çakılların tanımlanması ve kökenini ortaya koymaktır. Çakılların bileşimini ve kökenini ortaya koymak amacıyla mineraloji, petrografi, mineral kimyası ve jeokimya çalışmaları yapılmıştır. Formasyon içerisindeki magmatik kökenli çakıllar derinlik, damar ve volkanik kayaların çakılları olup alkali feldispat granit, granodiyorit, tonalit, gabro, granodiyorit porfir, monzonit porfir, siyenit porfir, diyabaz, dasit, latit ve bazalt bileşimindedir. Alkali feldispat granit bileşimindeki çakıllar içerisindeki plajiyoklazların albit, oligoklaz mika minerallerin ise siderofillit bileşiminde oldukları tespit edilmiştir. Mika minerallerinin kimyası kabuk kökenli bir magmanın 579-662°C, 1.12-3.07 kbar ve 4.31-11.81 Km'de oluştuğunu belirtmektedir. Jeokimyasal verilere göre granitoyid kökenli çakılların üst kabuktan türedikleri söylenebilir. Magmatik kökenli çakılların petrografisi ve jeokimyasına göre S-Tipi granitlerine benzer bir kaynaktan türedikleri ve çarpışma ile eşzamanlı kabukta meydana gelen ergimelerle oluşmuş Orta Anadolu'nun S-Tipi granitlerine ait çakıllar oldukları söylenebilir.

Anahtar Kelimeler: Asmaboğazı Formasyonu, granitoyid çakılları, köken.

ABSTRACT

The Central Anatolian Crystalline Complex (CACC) crops out in a triangular area between Ankara-Sivas-Ulukışla in Central Anatolia. CACC generally consists of four rock groups. These are Central Anatolian Metamorphics (CAM), Central Anatolian Ophiolites (CAO) Central Anatolian Felsic (CAF) and the Central Anatolian Mafic (CAM) intrusives and the sedimentary and the products of Central Anatolia volcanism cover all these units unconformably. Upper Cretaceous sedimentary units comprise of Maestrichtian-Campanian aged Kartal Formation and Maestrichtian aged Asmaboğazı Formation. These typically outcrop at the elevations at east of the TGF. The ages of these sedimentary deposits have been determined according to their fossil content and their stratigraphic relations. There are magmatic pebbles within these units. The aim of this study is to identify the igneous originated pebbles in the Asmaboğazı Formation and to reveal the origin of these pebbles. To reveal the composition and origin of these pebbles detailed mineralogy, petrography, mineral chemistry and geochemistry studies were carried out. The mentioned magmatic origin pebbles are pebbles of intrusives, subvolcanic and volcanic rocks and it has been determined that they are alkali feldspar granite, granodiorite, tonalite, gabbro, granodiorite porphyry, monzonite porphyry, syenite porphyry, diabase, dacite, latite and basalt in composition. It was determined that plagioclases in the pebbles which are alkali feldspar granite in composition are albite and oligoclase, micas are siderophyllite in composition. The chemistry of micas indicates that a crustal magma was formed at 579-662°C, 1.12-3.07 kbar and 4.31-11.81 Km depth. According to the geochemical data, it can be said that the granitoid-originated pebbles are derived from upper crustal source. According to the petrography and geochemistry of the igneous pebbles are derived from a source similar to the S-Type granites and they are belonging to the S-Type granites of Central Anatolia, formed by melting in the crust as syncollisional.

Keywords: Asmaboğazı Formation, granitoid gravels, origin.

FATHER OF IRANIAN CHILDREN'S POETRY – MOSTAFA RAHMANDOOST

İRAN UŞAQ ŞEİRİNİN ATASI - MUSTAFA RƏHMANDUST

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XÜLASƏ

İran uşaq ədəbiyyatının inkişafında müstəsna xidmətləri olan qələm sahiblərindən biri də Mustafa Rəhmandustdur. Bütün şüurlu həyatını uşaqların təlim, təhsil, əxlaqi-estetik tərbiyəsinə həsr edən M. Rəhmandustun "İran uşaq şeirinin atası" kimi fəxri adla şərəfləndirilməsi də onun bu sahədəki prinsipial, yorulmaz fəaliyətinin məntiqi nəticəsidir. İlk şeirini çox kiçik yaşlarında qələmə alan şairin universitet illərində uşaq ədəbiyyatı ilə yaxından tanış olması, onu uşaq dünyasının ecazkar sehrinə qərq edir.

Zəngin ədəbi-tarixi ənənələrə malik olan İran uşaq ədəbiyyatına özünəməxsus dil-üslub, yanaşma tərzi ilə keyfiyyətcə yeni forma və məzmun qazandıran M. Rəhmandust indiyədək uşaqlara xitab edən, onlar tərəfindən sevilə-sevilə oxunan 360-dan çox əsərin müəllifidir. Daha çox "Yüz yaqut" şeiri ilə tanınan şairin "Asan lüğət: uşaq və yeniyetmələr üçün ensiklopediya", İran atalar sözlərinin toplusundan ibarət "Zərbül məsəllər lüğəti", "Nəvaziş tərənələri: laylalar", "Asiman da güldü", "Balıqların xoş halına", "Quş dedi: Bəh! Bəh!", "Beş barmağın nağılı", "Barmaqlarla oyun" adlı kitabları istər ideya-tematik tutum, istərsə də poetik dəyər baxımından İran uşaq ədəbiyyatına yeni nəfəs bəxş etmişdir. Mükəmməl qafiyə quruluşu, aydın və lakonik ifadə tərzi M. Rəhmandust yaradıcılığının xarakterik cəhətlərindəndir.

Uşaq psixologiyasına dərindən bələd olan ustad şairin yaradıcılığının əsas qayəsi bu günün kiçik fidanlarının tarixi keçmişinə sahiblənərək (!) müasir elmi-texniki inqilablar dünyasının tələblərinə cavab verməyi bacaran yetkin insan kimi tərbiyə etməkdən ibarətdir. M. Rəhmandusta görə, bu tərbiyə sisteminin nüvəsində (qaydalar və şərtlər, formasiya və tələblər nə olursa-olsun) insanlıq, milli-mənəvi dəyərlər, əxlaq durmalıdır.

Açar sözlər: İran uşaq ədəbiyyatı, İran uşaq şeiri, Mustafa Rəhmandust, "Yüz yaqut".

ABSTRACT

Mostafa Rahmandoost is one of the authors who have exceptional services in the development of Iranian children's literature. M. Rahmandoost, who devoted his entire conscious life to the education, moral and aesthetic education of children, was honored with the honorary title of "father of Iranian children's poetry" and is the logical result of his principled, tireless activity in this field. The poet, who wrote his first poem at a very young age, became familiar with children's literature during his university years, which plunged him into the wonderful magic of the children's world.

M. Rahmandoost, who has given a qualitatively new form and content to Iranian children's literature with his unique language and approach, is the author of more than 360 works that appeal to children and are loved by them. "Easy dictionary: an encyclopedia for children and teenagers", "Proverbs dictionary" containing a collection of Iranian proverbs, "Lullabies of caress: lullabies", "Asiman also laughed", "Good luck to the fish" of the poet, who is best known for his poem "One hundred rubies" , “The bird said: Bah! Bah!", "The Tale of Five Fingers", and "Game with Fingers" have given a new breath to Iranian children's literature, both in terms of idea-thematic capacity and poetic value. Perfect rhyme structure, clear and concise style of expression are characteristic features of M. Rahmandoost’s creativity.
The main goal of the work of the master poet, who is deeply familiar with child psychology, is to take ownership of the historical past of today's small seedlings (!) and educate them as adults who are able to meet the requirements of the world of modern scientific and technical revolutions.

According to M. Rahmandoost, at the core of this educational system (regardless of the rules and conditions, formation and requirements) should be humanity, national and moral values, and morality.

Key words: Iranian children's literature, Iranian children's poetry, Mostafa Rahmandoost, "One hundred rubies".

QSAR AND DRUG-LIKENESS STUDIES OF THIADIAZOLE DERIVATIVES AGAINST LUNG CANCER

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ABSTRACT

This study was aimed at building a robust quantitative structure–activity relationship (QSAR) to predict the anti-proliferate activity of 1,3,4-thiadiazole derivatives against the A549 lung cancer cell lines. The semi-empirical PM7 parametrization approach was used to optimize the complete set of 1,3,4-thiadiazole derivatives and various classes of molecular descriptors have been calculated. We built models using Fisher score and the best subset selection for feature selection, and the final model was developed using the multiple linear regression technique, all in accordance with the rigorous Organization for Economic Co-operation and Development (OECD) requirements. Furthermore, various internationally agreed severe validation parameters were used to validate the model. Overall, our established model for quick prediction should be relevant to new, untested, or not yet produced compounds that fall within the applicability domain (AD) of the model. The drug-likeness properties of the 10 compounds with the greatest activity value were also calculated using Lipinski's rule properties.

Keywords: QSAR, Thiadiazole derivatives, A549, PM7, OECD

THE IMPORTANCE OF CHINA'S "ONE BELT AND ROAD" PROJECT FOR BLACK SEA COUNTRIES: THE ROLE OF CONFUCIUS INSTITUTES IN THIS PROJECT

ÇİN'İN "BİR KUŞAK BİR YOL " PROJESİNİN KARADENİZ'E KIYISI OLAN ÜLKELER AÇISINDAN ÖNEMİ: KONFÜÇYÜS ENSTİTÜLERİNİN BU PROJEDE OYNADIĞI ROL

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ÖZET

Çin Cumhurbaşkanı Xi Jinping 7 Eylül 2013 tarihinde önce Kazakistanda daha sonra 3 Ekim 2013 tarihinde Endonezya'da yaptığı konuşmada "Bir Kuşak Bir Yol " Projesini dile getirmiştir. Bu projenin büyüklüğü projenin önemini gözler önüne sermektedir. Girişimin finansmanı, planlanması ve organizasyonunda en büyük pay Çine aittir. Çin Asya, Avrupa ve Afrika kıtalarında küresel siyasette belirleyici etkin bir rol oynamaktadır.
Bir Kuşak Bir Yol Projesi Çin Halk Cumhuriyetinin kuruluşunun 100. yılı olan 2049 yılında tamamlanması hedeflenen projeler arasında bulunmaktadır.Proje kıtalar arasında bir çok ülke ve milyarlarca insana ulaşmayı hedeflemektedir. Bunlar ulaştırma, ticaret, enerji kaynakları, alt yapı hizmetleri gibi karşılıklı sermaye alışverişi ve kültürel iletişimin geliştirilmesini gerekli kılmaktadır. "Bir Kuşak Bir Yol " Projesinin amacı: İnsanlık için ortak bir kader topluluğu oluşturmaktır. İnsanlığın tek bir dünyası vardır. Ve tüm ülkeler aynı dünya üzerinde birlikte yaşamak zorundadırlar. Bu nedenden dolayı ülkeler kendi çıkarlarını gözetirken diğer ülkelerin de çıkarlarını da düşünmek zorundadırlar. Ülkeler kendi kalkınmalarını sürdürürken diğer ülkelerin de kalkınmalarına destek sağlamalıdırlar.
Bu Projede Çin dilini bilen elemanlara büyük ihtiyaç duyulmaktadır. Ve bu projede görev yapacak elemanların yetiştirilmesinde Konfüçyüs Enstitüleri büyük önem taşımaktadır. Konfüçyüs Enstitüleri ilk olarak 2004 yılında Pekinde kuruldu. Bu Enstitülerin amacı yurtdışındaki okul ve üniversitelerle Çince eğitim konusunda işbirliğini sağlamaktır. Çin ve diğer ülkeler arasında dostluk temeline dayanan ilişkiler kurmaktır.

Anahtar Kelimeler: Çin, Kuşak, Yol, Konfüçyüs

ABSTRACT

Chinese President Xi Jinping expressed the "One Belt One Road" Project in his speech on September 7, 2013, first in Kazakhstan and then in Indonesia on October 3, 2013. The size of this project demonstrates the importance of the project. The largest share in the financing, planning and organization of the enterprise belongs to China. China plays an active and decisive role in global politics in Asia, Europe and Africa. One Belt One Road Project is among the projects targeted to be completed in 2049, the 100th anniversary of the founding of the People's Republic of China. The project aims to reach many countries and billions of people across continents. These necessitate cultural communication and the development of mutual capital exchange such as transportation, trade, energy resources, infrastructure services. The aim of the “One Belt One Road” Project is to create a community of common destiny for humanity. Humanity has only one world and all countries have to live together on the same world. For this reason, countries have to consider the interests of other countries while taking care of their own interests. While countries continue their own development, they should also support the development of other countries. In this Project, there is a great need for employees who can speak the Chinese language. In addition, Confucius Institutes have a great importance in educating the employees who will work on this project. Confucius Institutes were first established in Beijing in 2004.
The purpose of these Institutes is to cooperate with foreign schools and universities on Chinese education and to establish friendly based relations between China and other countries.

Keywords: China, Belt, Road, Confucius

HOMOPHONES – IN PHONETIC, DISTRIBUTIVE RESEARCHES

OMOFONLAR - FONETIK, DISTRIBUTIV ARAŞDIRMALARDA

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XÜLASƏ

Ərəb əlifbası əsasında formalaşmış fars dilinin tez-tez rastlaşdığı əsas problemlərdən biri bu dildə qrafikaya görə mövcud olan omofonlardır.
Omofon –yazılış və məna cəhətdən fərqli, tələffüzcə eyni olan müxtəlif nominativ, morfoloji tərkibli leksemlərdir. İngiliscə - “homophone”, azərbaycanca - “oмofoн”, fars dilində “həmava” adlanır. Bu termin yunanca “homos”- (oxşar) və “fonem”- (səs) sözlərinin birləşməsindən əmələ gələrək, “oxşar səslənmə” mənasını verir. Omofonlar fars dilinin öyrənilməsində çox ciddi çətinliklər yaratdığından, haqqında ara-sıra danışılsa da, qeyd edək ki, mövzu ciddi tədqiq olunmamışdır.
Fars yazısını çətinləşdirən əsas səbəblərdən biri odur ki, farslar ərəb qrafikasını qəbul etdikləri halda, bu hərflərin bir çoxunun tələffüzünü qəbul etməmişlər. Belə ki, fars dilinin qrafik quruluşunda 3 müxtəlif – "س " ، "ث" "ص" hərfləri olsa da bunların hər üçü bir /s/ fonemi məxrəcində tələffüz edilir. Eksperiment araşdırmaları göstərir ki, kar, sürtünən, dil, dildibi /s/ samitini ağ ciyərlərdən gələn hava axını ağızda yaranan novdan keçərək formalaşdırır. Müxtəlif fonetik şəraitdən asılı olmayaraq /s/ samiti öz karlıq və nəfəslilik xüsusiyyətini heç vaxt itirmir. Tədqiqatımızda /s/ samiti (CVCC) tipli bir hecalı sözlər daxilindəki (CC) samitlərinin bir-birini izləməsi, distributiv xüsusiyyətəri çərçivəsində araşdırılmışdır. Bu növ araşdırma tərzi bizə qeyd etdiyimiz qrafik nümunələrin söz daxilindəki mövqeyi, hansı samitlərlə yanaşı işlənməsi və işlənməməsi haqqında daha konkret fikir yürütmək imkanı yaradır.
Bu tezisimizdə fars dilinin qrafik quruluşundakı omofonların yaranmasında fəallıq göstərən /s/ foneminin 3 müxtəlif – "س " ، "ث" "ص" hərflərindən bəhs etmişik.

Açar sözlər: omofon, fonetika, distribusiya, samit, fars dili

SUMMARY

One of the main problems that the Persian language, formed on the basis of the Arabic alphabet, often encounters is the homophones that exist in this language due to the graphics.
Homophones – are lexemes with different nominative, morphological composition, which are different in spelling and meaning, but the same in pronunciation. It is called "homophone" in English, "omofon" in Azerbaijani, "hamava" in Persian. This term is derived from the combination of the Greek words "homos"- (similar) and "phoneme"- (sound) and means "similar sounding". Since homophones cause serious difficulties in the study of the Persian language, although they are occasionally discussed, it should be noted that the topic has not been seriously studied.
One of the main reasons that make Persian writing difficult is that while the Persians adopted the Arabic script, they did not adopt the pronunciation of many of these letters. So, although there are 3 different letters in the graphic structure of the Persian language - "س" ,"ث" and "ص", all three of them are pronounced with one /s/ phoneme denominator. Experimental studies show that the voiceless consonant, /s/ is formed by the air flow from the lungs passing through the groove in the mouth. Regardless of various phonetic conditions, the consonant /s/ never loses its voiceless and breathiness. In our study, the succession of (CC) consonants within monosyllabic words of the /s/ consonant (CVCC) type was investigated within the framework of distributive features. This type of research allows us to have a more concrete idea about the position of the graphic examples we mentioned within the word, with which consonants are used and not used.
In this thesis, we talked about 3 different letters of the /s/ phoneme - "س" ,"ث" and "ص" - which are active in the creation of homophones in the graphic structure of the Persian language.

Key words: homophone, phonetics, distribution, consonant, Persian language

LABOR RIGHTS AND CORPORATE SOCIAL RESPONSIBILITY IN GEORGIA DURING COVID PANDEMIC

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Abstract

Government deregulation policy and abolishment of the labor inspectorate in 2006 led to an obvious deterioration in the protection of labor rights in Georgia. By contrast, the recent institutional and legal reforms ensure access to clear guidelines on the implementation of labor standards compliant with international standards, including the anti-discrimination policy and several procedures. As regards occupational safety at the workplace, it is defined as the tendency toward improvement,

The Covid-19 Pandemic made clear about the degree of workplace flexibility and Georgia has undertaken several international commitments to ensure decent and safe labor conditions. Social dialogue has a critical role to play in designing policies to promote decent working conditions, to protect jobs, and the incomes of business companies. The Georgian government is still willing to take a more modern approach toward labor regulations allowing more flexibility for employers.

Although there is recent progress in the reduction of workplace accidents, it is also recommended to encourage diversity and equality at work, including the creation of decent working conditions. It is still crucial for Georgian employees to make the full implementation of the labor standards, create a code of ethics, and implement several main principles of CSR.

Keywords: Corporate Social Responsibility (CSR), labor rights, Georgia,

ASAL-GHOUBBET BÖLGESİNDEKİ INKİ-GARAYTO BAZALTLARININ PETROJENEZİ, CİBUTİ CUMHURİYETİ.

PETROGENESIS OF INKI-GARAYTO BASALTS OF ASAL-GHOUBBET AREA, REPUBLIC OF DJIBOUTI.

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ABSTRACT

Inki Garrayto, or axial chain, is a little-known volcano that is often confused with Ardoukoba. It is located in the rift depression area between Ardoukoba volcano and Fialé volcano in NW and SE respectively. It consists of 9-11 volcanic cinder cones aligned on the axis of the 150 m high rift. Inki Garrayto's array craters are spread out in the NW/SE direction. It is clearly seen that the spreading lava flow continues to the north and south directions. The volcano of Inki Garrayto and the associated parasitic volcanoes have the lava character of AA type. These lavas erupted in different eruption centers were divided into three groups as porphyritic, aphyric and vesicles. The basaltic lavas with porphyric composition are mainly composed of plagioclase, olivine, pyroxene and opaque mineral crystals. The rocks exhibit an intergranular texture and sometime intersertal texture is observed with the filling volcanic glass between microcrystalline and microlite. The basaltic aphyric lavas have mineralogical assemblage of plagioclase, clinopyroxene and opaque mineral composition. The rocks exhibit an intersertal texture groundmass. The basaltic vesicular lavas have mineralogical assemblage of plagioclase, olivine, clinopyroxene and oxide minerals (like opaque). The vesicles dominate the rock with 70% occupation.

The rocks from Inki Garrayto volcanoes range from basalt to basaltic trachy-basalt field. The Inki Garrayto rocks tend from subalkaline to the slightly moderate to alkaline zone and also have a tholeitic character. Al_2O_3 and MgO content display a negative correlation with SiO_2. This decrease is roughly due to the fractionation of the plagioclase, clinopyroxene and olivine. Na_2O and K_2O contents show a positive correlation with the increase in silica as a result of crystallization of calcic plagioclase. As can be seen from the major oxide diagrams, it is observed that there is a consistent relationship with the fraction of mafic mineral phases such as clinopyroxene, olivine, iron titanium oxide and apatite. The CaO constant may be due to fractionation mainly by plagioclase and clinopyroxene. N-type MORB normalized trace element concentrations of the multielement patterns are all characterized by significant enrichment in all the large ion lithophile elements (LILE), Rb, Ba, Th, U, Pb, K and slightly depleted of the light rare earth elements (LREE), La, Ce, Pr, Nd, relative to the high field strength elements (HFSE) Nb, Ti, Zr, Y with respect to N-type MORB. Cs and U have positive anomalies and these Sc and U enrichment supports that they may have been affected by the crust.

Keywords: Inki Garrayto, Tholeiitic, Aphyric

ÖZET

Inki Garrayto kelime olarak Cibuti'nin yerel dillerinden bir tanesi olan Afarcada inki Garrayto dom palmiyesi anlamına gelmektedir. Volkanik patlamalar olduğu bu yerl halk volkan patlamasının dom Palmiye ağacı olarak adlandırmıştır. Inki Garrayto volkan çıkışı KB ve GD'de Ardoukoba yanardağı ile Fialé yanardağı arasındaki rıft çöküntüsü arasında yer almaktadır. Bu volkan, 150 m yüksekliğindeki riftin ekseninsıralanmış 9-11 "cinder" volkanik konilardan oluşmaktadır. İnki Garrayto'nun dizi kraterleri NW/SE yönünde yayılmaktadır. İnki Garrayto volkanları Ghoubet volkanlarından daha önce oluşmuştur. Yayılan lav akıntıları kuzey ve güney yönlerine doğru yayıldığı arazide açıkça görünmektedir. "AA" lav tipi karakterine sahip olan Inki Garrayto volkanı aynı zamanda volkani konilerinde volkan pombaları da içermektedir. Farklı püskürme merkezlerinde püsküren bu lavlar, porfirik, afirik ve vesiküller olmak üzere üç gruba ayrılmaktadır. Porfirik bileşimli bazaltik lavlar başlıca plajiyoklaz, olivin, piroksen ve opak mineral kristallerinden oluşur. Burada oluşan kayalar taneler arası bir doku sergilerler ve bazen mikrokristalin ve mikrolit arasındaki dolgu volkanik camla birlikte intersertal doku da göstermektedir. Bazaltik afirik lavlardan oluşan katyalar ise mineralojik olarak başlıca plajiyoklaz, klinopiroksen ve opak mineral bileşimine sahiptir. Bu kayalar intersertal dokulu bir hamur içerisinde katılaşmıştır. Bazaltik veziküler lavlarda plajiyoklaz, olivin, klinopiroksen ve oksit minerallerinden (opak gibi) oluşmaktadır. Bu tür lavların en önemli özelliği %70 oranında bir vesikül doku sergilemektedir. .

Inki Garrayto volkanlarından gelen kayalar bazalttan bazaltik traki-andezit alanına kadar değişim göstermektedir. Inki Garrayto kayaları subalkaliden hafif orta ile alkalin zona doğru eğilim gösterir ve aynı zamanda toleyitik bir karaktere sahiptir. Al2O3 ve MgO içeriği SiO2 ile negatif korelasyon göstermektedir. Bu azalma kabaca plajiyoklaz, klinopiroksen ve olivin fraksiyonasyonundan kaynaklanmaktadır. Na2O ve K2O içerikleri, kalsik plajiyoklaz kristalleşmesi sonucu silika artışı ile pozitif korelasyon göstermektedir. Ana oksit diyagramlarından da görülebileceği gibi, klinopiroksen, olivin, demir titanyum oksit ve apatit gibi mafik mineral fazların fraksiyonu ile tutarlı bir ilişki olduğu görülmektedir. CaO sabiti, esas olarak plajiyoklaz ve klinopiroksen tarafından fraksiyonlanmaya bağlı olabilir. Çok elementli örümcek diyagramında N-tipi MORB normalize edilmiş eser element konsantrasyonlarının tümü, Büyük iyon yarıçaplı litofil elementler (LILE), Rb, Ba, Th, U, Pb, K ve hafif nadir toprak elementlerinin hafifçe tükenmesi ile karakterize edilir (LREE), La, Ce, Pr, Nd, N-tipi MORB'a göre kalıcılığı yüksek elementlere(HFSE) göre Nb, Ti, Zr, Y. Cs ve U pozitif anomalilere sahip olup ve bu Sc ve U zenginleşmesi kabuktan etkilenmiş olabileceklerini desteklemektedir.

Anahtar kelimeler: Inki Garrayto, Toleyitik, Afirik.

ВЛИЯНИЕТО НА ОБРАЗУВАНЕТО НА HMF В МЕДА

THE INFLUENCE OF HMF FORMATION IN HONEY

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ABSTRACT

5-hydroxymethylfurfural (HMF) is one of the main parameters of honey quality, which is influenced by a large number of factors, the most important of which are honey storage, freshness and/or overheating. The aim of this research was to monitor the change in the content of HMF in acacia honey after one year and the influence of the environment on the formation of HMF. The presence and formation of HMF were investigated in the twelve samples of honey from the area of Belgrade (Republic of Serbia). The experiment was designed to assess the contents of HMF after harvest, and the one year after storing honey in packaging and in the hive. In this way, the formation of HMF at room temperature and under unchanged conditions, i.e. in hives, was calculated. HMF of honey was examined through high performance liquid chromatography (HPLC) system equipped with dual λ absorbance detector. All the samples and standards were analyzed in triplicate. Therefore, the formation of HMF at room temperature and under unchanged conditions, i.e., in hives, was calculated. The tested honey samples had the contents of HMF from 1.1 to 2.4 mg/kg after harvest. The mean values of the analysis results after one year were for testing honey samples in packaging and beehives: 17.2 mg/kg, 6.5 mg/kg, respectively. The formation of HMF was faster under conditions of storage at room temperature compared to honey obtained directly from the honeycomb and left for one year from autumn through winter.

Keywords: honey, acacia, HMF, chromatography

РЕЗЮМЕ

5-хидроксиметилфурфуролът (HMF) е един от основните параметри на качеството на меда, който се влияе от голям брой фактори, най-важните от които са съхранението, свежестта и/или прегряването на меда. Целта на това изследване е да се проследи промяната в съдържанието на HMF в акациевия мед след една година и влиянието на околната среда върху образуването на HMF. Наличието и образуването на HMF са изследвани в дванадесетте проби мед от района на Белград (Република Сърбия). Експериментът е предназначен да оцени съдържанието на HMF след прибиране на реколтата и една година след съхранение на меда в опаковката и в кошера. По този начин се изчислява образуването на HMF при стайна температура и при непроменени условия, т.е. в кошери. HMF на меда беше изследван чрез система за високоефективна течна хроматография (HPLC), оборудвана с детектор с двойна λ абсорбция. Всички проби и стандарти бяха анализирани в три екземпляра. Следователно беше изчислено образуването на HMF при стайна температура и при непроменени условия, т.е. в кошери. Изследваните проби мед са със съдържание на HMF от 1,1 до 2,4 mg/kg след прибиране на реколтата. Средните стойности на резултатите от анализа след една година са за изследване на проби от мед в опаковка и пчелни кошери: съответно 17,2 mg/kg, 6,5 mg/kg. Образуването на HMF е по-бързо при условия на съхранение при стайна температура в сравнение с меда, получен директно от пчелната пита и оставен за една година от есента до зимата.

Ключови думи: мед, акация, HMF, хроматография

THE ROLE OF MARKETING FOR EDUCATION SECTOR.

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Abstract

Education is the basic factor for reducing poverty and kick starting social Development. The educational system of Albania is facing new challenges. These challenges include the quality of the teaching, the teacher and school management licensing policy and the broader range of policy initiatives designed to improve the quality of teachers and school Leaders.
The University College Logos offers a Bachelor and Master Degree diploma from tthre faculties: The Faculty of Applied Sciences where students graduate in Information and Advance Techniques in Medical Laboratories, Faculty of Economics where students graduate in Finance, Business Management and Tourism Management and Faculty of Humanities and Linguistic Communication. Also a number of laboratories for scientific research are offered. But it is enough? It has yet to be developed at par with other developing countries in the region. And in this contest, digital marketing for education is becoming a promising platform due to the increase of web and digital media in the education sector. This sector has transformed entirely, and this is partly due to the widespread access that people have due to the internet. Therefore, educational industries should keep this in mind and work on their digital presence to reach a large number of students & parents with ease.
This study highlight some reasons why digital marketing is considered to be the best option when it comes to reaching out to both students and parents.

Keyword; education system, digital marketing, challenges.

HERMITE-HADAMARD INEQUALITIES FOR CONVEX STOCHASTIC PROCESS VIA FRACTIONAL INTEGRAL

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ABSTRACT

In this work we apply well known fractional integral operators such as Riemann-Liouville fractional integral, k-Riemann-Liouville fractional integral, Katugampola fractional operators, conformable fractional integral, Hadamard fractional integrals, etc, on convex stochastic processes in order to establish new integral inequalities of Hermite-Hadammard type.

Keywords: Hermite-Hadammard inequality, convex stochastic process, Fractional integral.

Introduction :

The stochastic processes is a significant branch of probability theory, it is usually defined as a family of random variables, and thus stochastic processes are used as mathematical models of systems and phenomena that appear to vary in a random manner probabilistic in time. And so the definition of a stochastic process is as follow :

(Ω, A, P) being a probability space. A function $\mathrm{X} : \Omega \to \mathbb{R}$ is a random variable if A is measurable.

A stochastic processes is defined as function $\mathrm{X} : \Omega \times \mathrm{I} \to \mathbb{R}$ where $\mathrm{I} \subset \mathbb{R}$ is an interval if for every $t \in I$ the function X(t,.) is a random variable.

The study of convex stochastic process was initiated by Nikodem in 1980, investigating some regularity properties of convex stochastic process. In 1992 Skowronski managed to obatin some further results on convex stochastic process, later on different types of convexities of stochastic processes were considered to derive new results .

A stochastic process $\mathrm{X} : \Omega \times \mathrm{I} \to \mathbb{R}$ is convex if $\forall \lambda \in [0,1]$ where a and b $\in I$, the following inequality is satisfied (see 4)

$$X(\lambda a + (1-\lambda)b,.) \leq \lambda X(a,.) + (1-\lambda)X(b,.)$$

Among the results found, one in particular is considered to be one of the most important inequalities for convex function in general, and for convex stochastic prosses especially , known as the Hermite-Hadammard inequalitie.

For a Jensen convex stochastic process $\mathrm{X} : \Omega \times \mathrm{I} \to \mathbb{R}$on the intervalle I where a and b $\in I$ and a<b , the inequality stipulate that :

$$X(\frac{a+b}{2},.) \leq \frac{1}{b-a}\int_a^b X(x,.)dx \leq \frac{X(a,.)+X(b,.)}{2}$$

The inequality became quickly very useful tool in the Theory of Probability and Optimization.

On the hand fractional calculus , was introduced at the end of the nineteenth century by Liouville and Riemann,the subject of which has become a rapidly growing area and has found applications in diverse fields ranging from physical sciences and engineering to biological sciences and economics.

The Riemann-Liouville integral exists in two forms, upper and lower. Considering the interval [a,b], the integrals are defined as :

$$I_{a^+}^{(\alpha)} f(x) = \frac{1}{\Gamma(\alpha)}\int_a^x (x-t)^{\alpha-1} f(t)dt$$

$$I_{b^-}^{(\alpha)} f(x) = \frac{1}{\Gamma(\alpha)}\int_x^b (t-x)^{\alpha-1} f(t)dt$$

Where Γ is Euler Gamma function.

In time different types of fractional integrals were introduced among wich we mention :

K Riemann-Liouville fractional integral defined by :

$$I_{a^+,k}^{(\alpha)} f(x) = \frac{1}{k\Gamma_k(\alpha)}\int_a^x (x-t)^{\frac{\alpha}{k}-1} f(t)dt$$

$$I_{b^-,k}^{(\alpha)} f(x) = \frac{1}{k\Gamma_k(\alpha)}\int_x^b (t-x)^{\frac{\alpha}{k}-1} f(t)dt$$

Where : $\Gamma_k(\alpha) = \int_0^{+\infty} t^{\alpha-1} e^{\frac{-t^k}{k}} dt$

EMBRYONIC DEVELOPMENT OF THE TURTLE BLOODFEEDING LEECH: PLACOBDELLA SP. (HIRUDINEA: GLOSSIPHONIIFORMES) FROM TUNISIA

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Leeches, like all Annelids, together with flatworms, Nemerteans, Mollusks, exhibit a clear spiralian cleavage and are, therefore, important models for studying embryonic development (Wilson 1898). They are characterized by their direct development which involves no metamorphosis of the hatched juveniles. Whereas Polycheata are known by their indirect development involving the metamorphosis of the trochophore's larvae.
The aim of the present study is to provide new data on the life cycle of the freshwater leech Placobdella sp. from Tunisia and to describe for the first time its egg-laying and development under laboratory conditions. One leech deposited 2 to 3 cocoons. Each cocoon contained 15 to 20 fertilised egg. The sequence of morphological changes in the developing eggs observed with light microscopy allowed us to identify five main embryonic stages. The first stage was characterised by aggregates of blastomeres, showing a spiral arrangement. Approximately 4 days after laying the cocoons (stage II), the archenteron and the body metamerisation took place. At stage III, the organogenesis of the definitive inner organs started. Between 11 and 12 days after laying the eggs, hatching occurred (stage IV). The newly hatched juveniles (stage V) remained attached to the parent's venter for 4-7 days. They consumed their yolk supply during a post-embryonic brooding period.

Keywords: Placobdella sp.; embryonic development; polar ring; blast cell; germinal band

PERFORMANCE AND CARCASS CHARACTERISTICS OF BROILER CHICKENS FED DIETS SUPPLEMENTED WITH AGRICULTURAL WASTE-DERIVED ACTIVATED CHARCOAL

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Abstract
Feed remains the most important component of the cost of production in the intensive poultry sector. Hence, there is the compelling need to harness the potentials of numerous alternative ingredients such as activated charcoal as replacement for expensive conventional ingredients. One hundred and twenty unsexed day old arbor acre strain of broilers were used. On arrival, they were distributed into four treatment groups (T1-T4) of thirty birds each with each group further replicated three times comprising of 10 birds each in completely randomized design. They were maintained ad-libitum on a starter and finisher diet for 3 weeks each respectively with T1 (control) fed diet containing no activated charcoal. T2-T4 was fed diet which contained 0.5g/kg, 1.0g/kg and 1.5g/kg of AC respectively. Data on feed intake, live weight, carcass yield, internal organs and relative organ weight were taken and subjected to one-way statistical analysis of variance. Results showed that the activated charcoal significantly ($P < 0.05$) reduced feed intake and increased live weight gain with better feed conversion efficiency ($P < 0.05$) in the supplemented broiler group (T2-T4) when compared with broilers fed control diet. It was concluded that the use of agricultural waste-derived activated charcoal will enhance growth performance and health in broiler chickens at a recommended inclusion rate of 1.0g/kg of feed and as alternative to antibiotics as a growth promoter.

Keywords: Activated charcoal, broilers, agricultural waste, performance, carcass characteristics

KARADENİZ'E KIYISI OLAN DEVLETLER AÇISINDAN İSTANBUL BOĞAZI'NIN ÖNEMİ VE GEÇİŞ REJİMİ DEĞERLENDİRMESİ

THE IMPORTANCE OF BOSPHORUS IN TERMS OF BLACK SEA COASTAL STATES AND THE EVALUATION OF THE TRANCID PASSAGE REGIME

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ÖZET

Boğazlar ve kanallar iki denizi birbirine bağlayan suyolları olarak yüzyıllardır denizcilik faaliyetlerinde önemli kavşak noktaları olmuştur. Karadeniz kendine has özellikler barındıran birçok ülkenin kıyıdaş olduğu bir denizdir. İstanbul Boğazı ise bu özel denizin tek doğal kapısı özelliğine sahiptir. Günümüzde Türkiye Cumhuriyeti Devleti'nin sınırları içerisinde yer alan bu doğal suyolu geçidi, etrafı karalarla çevrili Karadeniz'in diğer denizler ile olan tek doğal bağlantısıdır. Karadeniz'e kıyıdaş devletlerin çoğu denizcilikte ve deniz ticaretinde yer edinmiş gelişmeleri önde ilerleten devletlerdir. Bunun bir sonucu olarak ise
Boğazlardan geçişler uluslararası hukuk kurallarına göre belirlenmektedir. Uluslararası hukuk kuralları ise iki taraflı veyahut çok taraflı sözleşmeler yordamı ile belirlenmektedir. İstanbul Boğazına ilişkin geçişler ise günümüzde Montrö Boğazlar Sözleşmesi hükümlerine uygun olarak yürütülmektedir. Karadeniz'e kıyısı olan devletler açısından İstanbul Boğazı'nın önemi tartışmasızdır. Boğazın geçiş rejimine ilişkin kurallar ise uluslararası sözleşmeler ile düzenlenmektedir. Bu noktada en önemli belgeyi Montrö Boğazlar Sözleşmesi olarak belirlenmelidir. Sözleşme Karadeniz'e kıyısı olan devletler ile olmayanlar arasında ayrıma gidilmiştir.
Böylelikle bölgedeki geçiş rejimi devletlerin bölgeye olan yakınlıklarına göre düzenleme alanı bulmaktadır. Boğazlardan geçiş savaş gemileri ile ticaret gemileri arasında ayrıma da gitmekle birlikte yine bu ayrım içerisinde de kıyıdaş devletler için özel hükümler içermektedir. Bu çalışmamızda biz geçiş rejiminde bu farklılıkları tartışarak İstanbul Boğazı'nın Karedeniz'e kıyısı olan devletler ile tüm dünya devletleri açısından önemini ortaya koymayı amaçlamaktayız.

Anahtar kelimeler: Boğazlar rejimi, Montrö Boğazlar Sözleşmesi, İstanbul Boğazı

RELIGIOUS LIFE IN TERMS OF SOME VARIABLES (AGE AND GENDER)

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ABSTRACT

In the age we live in, it is observed that people are constantly in search of meaning. In this respect, human beings are in constant interaction with their environment. The sense of belief in its creation is constantly developing in the world of the soul and heart, almost like a nucleus. In this respect, human beings are constantly exposed to a change and transformation, both with the genes they have from birth and the experiences they have gained afterwards. Religious values and cultural features are also included in this area of change and transformation. In addition, the environment in which a person lives and the social and economic conditions of the society in which he lives also affect his belief.

In this study, the religious development process of individuals in different age periods was discussed and it was aimed to reveal how the relationship between the unique characteristics of each age and belief is. However, another aim of our research is to reveal whether individuals of different genders have an effect on religious belief.

As a result, the level of religiosity changes in every period of an individual's life. While there is no visible religiousness in infancy, this situation may differ in childhood, adolescence, adulthood and old age. Religious awakening starts again after the thirties, when the religious level is the lowest for the individual, especially in the thirties. Old age is the period when the individual is most religious. In short, if a person, who is a psycho-social being, experiences physiological, psychological and sociological changes at every age, there are also changes in his religiosity.

Keywords: Psychology of religion, religious belief, age, gender.

ALTERNATIVE BIOFUELS OBTAINED THROUGH PYROLYSIS OF PRE-PROCESSED MSW FROM URBAN LANDFILL

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ABSTRACT

The main objective of performing the thermal processing of MSW was to obtain high-calorific liquid fuel, using the pyrolysis process. Pyrolysis offers advantages over other products processing methods, being the treatment that maximizes the production of bio-oil with superior technical applications and it has the potential to be used to produce several high valuable chemicals or fuels. The materials tested in this study were supplied by Vitalia Environment services, a Romanian company dealing with MSW and landfilling, and they are a mixture of plastic, paper, wood, textile etc. Before pyrolysis, the samples were dried at room temperature in a well-ventilated area. The most important parameters affecting the generation of pyrolysis products are the pyrolizer design, MSW composition, and the operating parameters such as heating rate, pyrolysis temperature, the residence time in the reaction, and the particle size of the substrate. A mass of 300±5g of sample was introduced into the reactor. Five series of experiments were performed in a pyrolysis reactor of 5kW electrical power of for each sample to verify the accuracy of the data. As stated above, low heating rates have been used, 2-3 °C/min starting with 150 °C up to 600 °C and kept for 120 minutes to complete the process. The pyrolysis products were Solid (char) 18% ±1%wt, Liquid 60%±1%wt and Gas 22%±1% wt. The

products were analysed on GC-MS (liquid fraction) and GC (gaseous fraction). As a conclusion we establish that the gaseous fraction is reach in combustible gases CH4, C2H6, C2H4...and the liquid fraction is suitable as an alternative fuel.

Acknowledge: This work is part of a knowledge transfer project that includes clean technologies for producing and using alternative bioresources, financed by Romanian 2014-2020 Structural Funds through the Project POC-CleanTech, SMIS 105958.

Keywords: pyrolysis, MSW, recycling

HALOPHYTE PLANTS FOR SUSTAINABLE BIOENERGY PRODUCTION

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ABSTRACT
The development of bioenergy in marginal environments has been hampered by the lack of sustainable sources of biomass. The need of second-generation biofuels is in continuous growing. The objective of this work is to obtain biofuels and biochar through pyrolysis of halophyte Salicornia cultivated on soils contaminated with salt water. It was used an electrical heated reactor of 5kW electrical power. In order to see the repeatability (qualitative and quantitative) of pyrolysis products, five sets of test were performed with the same quantity (300g) of dry material. The reaction starts in the range of 100-120 °C with slight release of vapours and the peak is reached around the temperature of 320-350 °C with release of liquid and flammable non-condensable gases. The pyrolysis products were Solid (biochar) 47% ±1%, Liquid 31%±1% and Gas 22%±1%. The products were analysed on GC-MS (liquid fraction) and GC (gaseous fraction). As a conclusion we establish that the gaseous fraction is reach in combustible gases and the liquid fraction is suitable as a biofuel.

Acknowledge: This work is part of a knowledge transfer project that includes clean technologies for producing and using alternative bioresources, financed by Romanian 2014-2020 Structural Funds through the Project POC-CleanTech, SMIS 105958.

Keywords: pyrolysis, halophyte species, bioenergy

DEVELOPMENT AND VALIDATION OF A PREDICTIVE QSAR-BASED ON ARTIFICIAL NEURAL NETWORK FOR EFFECTIVE DESIGN OF PFDHFR INHIBITORS

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ABSTRACT

This study is important and original since it investigates and forecasts the potential antimalarial activity of a number of 1,3,5-triazine derivatives as PfDHFR inhibitors.

In the present investigation, we focused our interest on the Quantitative Structure-Activity Relationships studies were carried out for a bioactive series of 1,3,5-triazine derivatives complexed with the P. falciparum dihydrofolate reductase (Pfdhfr). For that purpose, artificial neural networks (ANNs) are used. The accuracy of such model is mainly evaluated by the correlation coefficient of R^2_{ANN} value 0.99, respectively, with risk lower than 0.01 % of model. These model can also be used to predict the activities of new chemical entities for their design and with low toxicity.

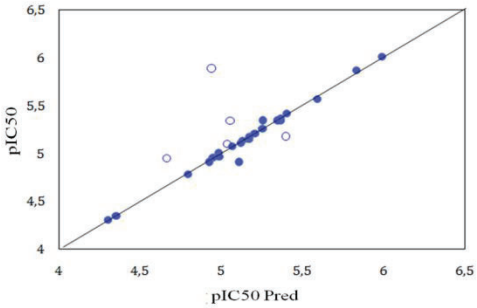

Fig.1 Correlations of experimental versus predicted pIC50 values using ANN.

The fundamental idea of QSAR is the possibility of establishing relationship between a set of structural properties and a particular type of biological activity.

keywords: 1,3,5-triazine derivatives, PfDHFR, QSAR, ANN.

EVALUATION OF THE WATER QUALITY OF THE DANUBE RIVER (THE SECTION CĂLĂRAȘI - BORCEA BRANCH – HÂRȘOVA - VADU OII, ROMANIA) - INITIAL STUDY

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ABSTRACT

The Danube River is the second longest river in Europe, representing an important international waterway, flowing through 10 countries and having tributaries from seven other countries. Due to its long course, the Danube collects the waters of its rivers and effluents together with all the nutrients and residues. Having a total area of 801,463 km2 and covering 10% of Continental Europe, the Danube River Basin features the highest degree of cultural diversity in the world and plays a key role in the continent's socio-economic, political and cultural life. The Danube River water quality is important for the communities relying on it, but also for supporting and maintaining the biodiversity in the Danube Delta Biosphere Reserve, which is included in the UNESCO Universal Cultural and Natural Heritage List.

In this context, the aim of this study is to assess the water quality of the Danube River water collected from four points at Chiciu (Călărași), Borcea branch, Hârșova (the main course), and Giurgeni-Vadu Oii, during the period May-July 2022 and measuring physical parameters for each. Borcea is the branch that separates from the main course of the Danube upstream at Calarasi - Ostrov ferry crossing point and re-joins the river downstream near the town of Giurgeni. Physico-chemical parameters such as pH, conductivity (EC), hardness, nitrates were analysed and further correlated with the specific biota and vegetation in the considered monitoring points. These data are collected in order to establish the water quality on each of these sections and also to identify the critical points (residues) that influence the quality of the Danube waters and the impact on biodiversity of Danube Delta.

This work is part of a larger study that also includes research on the biofiltration potential of plant species, the kinetics of pollutants, the microbiological status of waters, financed by Romanian 2014-2020 Structural Funds through the Project POC-RO-ESFRI-ERIC – D3MN, SMIS 108630.

Keywords: Biofiltration, Pollutants, Microbiology, Water quality indicators

FESTUCA ARUNDINACEA – A POTENTIAL CANDIDATE FOR RENEWABLE ENERGY

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ABSTRACT

In light of the global crisis situation, which also involves non-renewable energy resources, the need to find alternative solutions is ever greater. Every country in one form or another feels the effects of the pandemic and implicitly the energy ones, bringing back to the fore the reopening of some dormant domains. Another area that contributes to amplifying the effects of the world crisis is climate change and its impact on all components of ecosystems. One of these ecosystems is the agricultural one, supported entirely by the soil, which is becoming unsuitable for conventional crops. Thus, it is necessary to find integrated alternative solutions for, that serve the aspects mentioned above. One of these solutions is the use of perennial plant species with energetic potential.

The purposes of this research are to highlight the opportunity offered by the cultivation of Festuca sp. for the valorization of scarce soils and as a renewable source of sugars.

Thus, Festuca arundinacea cultivated in the spring of 2021 in Murighiol, Tulcea county, Romania was subjected to several extraction procedures to obtain high yields of sugar fraction. Conventional (as room temperature - RT, cold extraction - CE, maceration - M, and heat assisted extraction - HAE) and modern extration procedures (microwave assisted extraction - MAE, accelerated solvent extraction - ASE) were used.

The results showed that the extraction methods followed the trend: ASE> MAE> HAE> CE.

Both growth and development parameters and extraction procedures were realized using as reference Festuca sp biomass grown in greenhouse.

Keywords: Biomass, Methods of extraction, Soil quality, Reducing hexoses

FIRST DESCRIPTION FROM TUNISIAN WATERS OF BASEODISCUS DELINEATUS (DELLE CHIAJE, 1825) (NEMERTEA, PILIDIOPHORA)

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ABSTRACT

Nemerteans known as “Ribbon worms” are bilaterally symmetrical worms lacking a general cavity. These animals live in marine, freshwater and even in terrestrial ecosystems. One characteristic that is of particular interest is the possession of an eversible tubular proboscis located in a fluid-filled cavity, the rhynchocoel. Members of phylum Nemertea, possess many features in common with free-living flatworms mainly the presence of parenchyma tissue and protonephridial excretory system and the absence of either skeletal and respiratory structures.
Theses ribbon worms are mainly carnivorous or scavenging but some are parasites. In fact, there is the genus Carcinonemertes that lives as a parasite on crabs, eating the crab’s eggs and any animals that it can find from the confines of its host. Moreover, the phylum includes many interesting species provided with chemical toxins and bioactive compounds. Although his importance, the knowledge of the Nemertean fauna in Tunisia is poorly documented. In this context, we signalize for the first time the nemertean Baseodiscus delineatus (Delle Chiaje, 1825) from tunisian coasts and offer some data dealing with its external and internal morphology. Additionally, we give information dealing with habitats and distribution of this species in Tunisia and in the world.

Keywords: Nemerteans, Tunisia, Mediterranean sea, Taxonomy, Baseodiscus delineatus

CANOPY EFFECTS ON THE DISTRIBUTION OF ORCHIS PURPUREA HUDS. IN COAST AREAS NEAR PRIMORSKO

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ABSTRACT

The Black Sea coast has moister microclimate due to the constant seawater evaporation than in the farther from the sea regions. The areas near Primorsko city also have to some extent Mediterranean type climate with warm winters and dry summers. These factors have their impact on the vegetation type and structure. For the terrestrial Orchis purpurea Huds. with declining populations and occupational area as with many orchids Primorsko city is near the south border of its global distribution area. Therefore it is reasonable to be studied the influence of some of the ecological factors under such special conditions for this species.

Objectives: The study aimed to explore the distributional pattern of the populations of Orchis purpurea found in this unique region and the possible impact of the canopy.

Methods: Geospatial data of the orchid populations found in the studied region (near Primorsko city coast areas) were collected. Along that hemispherical photographs were made and analyzed.
Results: The results from the analysis of the acquired geospatial data and hemispherical images of the studied species revealed some discrepancy of the distributional pattern in relation to the canopy openness in comparison to the populations in other parts of the country. However further research is needed for the determination of the relation and possible impact of the other ecological factors.

Keywords: Orchis purpurea Hds. Orchidaceae, canopy effects; hemispherical imaging analysis, Black Sea coast.

ORCHID FLORA OF THE SOUTHERNMOST BULGARIAN BLACK SEA COAST FLORISTIC REGION – CURRENT STATUS AND THREATS

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ABSTRACT

Black Sea coast floristic region is unique zone which climate and vegetation is greatly influenced by the sea. The southernmost part of the Bulgarian Black Sea coast is also at the borderline of the Mediterranean climate zone. This combination of factors forms more moist and warm microclimate making possible the growth of Mediterranean floristic elements including the orchids and formation of specific habitats.

Objectives: The study aimed to explore the diversity, pattern and threats of the orchid flora found in this unique region and the possible impact of its specific conditions.

Methods: Collection of geospatial data and monitoring of the orchid populations found in the studied region (stretched from Ropotamo Nature Reserve till Silistar Protected Area). Also the threats for the wellbeing and existence of the orchid populations were recorded.

Results: During the study were found new species for this part of the Black Sea coast floristic region. Also were noted plethora of worrying threats and tendencies for some of the orchid species.

Keywords: Orchids, Orchidaceae, biodiversity, bioconservation, Black Sea coast floristic region.

COASTAL SURVEY AND MAPPING FOR THE SHORELINE RECLAMATION OF OBOLO- CREEK, AKWA-IBOM STATE, NIGER DELTA, NIGERIA

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ABSTRACT

This study is designed to find solution to the inherent tidal flood due to the relative low topography of part of the adjoining land, at Okoroete / Okorongak Mbokho and Okoroiti, all in Eastern Obolo Local Government Area, Akwa Ibom State, Niger-Delta, Nigeria. The adjoining land is swampy because of the continuous flooding of the area and this has brought untold hardship to the inhabitants of the area. The aimed of the study was to map the shoreline and adjoining topography to facilitate the planning for the proposed dredging and Shoreline reclamation of the area. The specific objectives include: hydrographic survey of the creek, topographic survey of the swampy sections and production of maps that will facilitate proper planning for the control of the flood. The bathymetric survey of the creek was done using Digital Echo-sounder integrated with Differential Global Positioning System while the topography of the flooded area was determine using a Total Station instrument. The acquired data were compiled, analyzed and used to compute the volumes of sand required from the dredging of the creek and for the reclamation of the flooded area. The results revealed that the average depth of the creek was 0.58m below Mean Low Low Water (MLLW) whereas the height of the topography that can control the flooding was 3.1m above Mean Low Low Water.

KEYWORDS: Coastal Survey, Shoreline Reclamation, Dredging, Niger-Delta, Nigeria

TYPE 2 DIABETES MELLITUS: CHOLINESTERASE ACTIVITY AND OXIDATIVE STRESS

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ABSTRACT

Type 2 diabetes mellitus is a metabolic disorder affecting several enzymatic systems including the cholinesterases. The impact of the disease over the susceptibility of cholinesterases to drugs used as cholinesterase inhibitors is not know. This study assess the correlation between oxidative stress and plasma cholinesterase activities in patients with type 2 diabetes mellitus and healthy individuals. Apparently healthy individuals (n=100) and type 2 diabetic patients (n=100) of both sexes (50/gender) were enrolled. The participants were not exposed to organophosphate insecticides or any medication known to interfere with cholinesterase activity. The criteria of WHO for diagnosis of type 2 diabetes was applied for confirming the diagnosis. Plasma lipid peroxidation was evaluated through determining malondialdehyde concentration by a colorimetric method at 535nm. Plasma and erythrocyte cholinesterase activities were measured in all subjects applying Ellman's spectrophotometric method. Significantly higher plasma malondialdehyde concentrations with both plasma and erythrocyte cholinesterase activities were found in type 2 diabetic patients, compared to respective healthy individuals ($p<0.05$). Plasma malondialdehyde concentrations significantly increased in both male and female type 2 diabetic patients in comparison with healthy individuals ($p<0.05$). Plasma cholinesterase activity significantly increased in type 2 diabetic male patients, whereas that of the erythrocyte significantly increased in type 2 diabetic females compared to healthy individuals 'respective values ($p < 0.05$). Elevated malondialdehyde concentrations in conjunction with increased blood cholinesterase activities may render type 2 diabetic patients more susceptible to oxidative stress; this might impact therapy with cholinesterase inhibitors when there is exposure to anticholinesterase pesticides.

Keywords: Type 2 diabetes mellitus, enzymology, cholinesterase activities, oxidative stress, cholinesterase inhibitors, anti-cholinesterase therapy.

CONTRIBUTION TO A STUDY OF THE DETERMINANTS OF LOGISTICS PERFORMANCE: DEFINITION AND MEASUREMENT AN INVESTIGATION IN THE FOOD RETAILING SECTOR

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ABSTRACT

The openness of the markets and the increase in competitiveness oblige companies to incessantly seek differentiation in the market and the satisfaction of the consumer group. The improvement of the quality of the logistic service level has been increasingly used as a strategy to satisfy and build customer loyalty. There has been a growing interest in the application of models to evaluate logistics performance and, in this way, to evidence in a qualitative and quantitative way the performance of organizations. Thus, the evaluation of logistics performance has a significant role in organizations, because it is characterized as a tool that allows measuring the global performance criteria and indicators in order to align the strategy in such a way that the goals and objectives are achieved.

Objective: To assess the identification of the variety of determinants of logistic performance, composed of indicators that can be measured and quantified in a clear and objective manner, and its application in the food retailing sector.

Material and Methods: A descriptive study was made. Data from a sample of food retailers are analyzed using a structural equation modeling methodology. A total of 250 surveys were responded that the evaluation was done by using a questionnaire whose reliability and validity have been scrupulously tested.

Results: Consideration of the result obtained confirm that logistics performance is influenced by these variables. The indicators, which have a leverage effect on the profitability of the organization and the overall performance of the company, are extremely relevant for all organizations.

Conclusion: Logistics performance evaluation presents great potential for the development of practical and theoretical studies. The evaluation of the indicator of logistics performance is currently a subject of great interest in the business world, so much so that several authors have studied the subject. However, few works have been developed focusing on the identification of the determinants belonging to the food retail sector in Morocco.

Keywords: Food retailing, Logistics Performance, Determinants, indicators.

SALICORNIA HERBACEA – PLANT SPECIES THAT CAN BE PRODUCED ON LANDS UNSUITABLE FOR TRADITIONAL AGRICULTURE

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ABSTRACT

Whether we are talking about a natural phenomenon as a result of climate change, or about salt as a result of oil exploitation, the areas affected by salinization are getting bigger and bigger. In the context of the world crisis, as a result of the multitude of geopolitical and biological factors, the need to ensure the basic needs of humanity is becoming increasingly urgent. Not only we need agricultural areas to provide food, but we also need plant species that are adapted, better said that are able to follow the same trends with climate changes and anthropic activities.

The purpose of this work is to highlight the opportunity offered by the use of halophyte species for the valorization of saline-alkaline soils, for food and feed. Therefore, Salicornia herbacea was cultivated in spring of 2021 in anthropogenic salt affected soils, with different electrical conductivity values. The plants successfully adapted to maturity and were harvested in late autumn. They were subjected to drying at room temperature and further subjected to analysis. Total phenolic, flavonoid and free radical scavenging activity were realized spectrophotometrically. Also, C and N content were determined.

The results showed the presence both of TFC, TPC, and antioxidant activity. With regard to C content, the results were over 30%, and N between 0.6 and 1.1 %.

Acknowledge: This work is part of a knowledge transfer project that includes clean technologies for producing and using alternative bioresources, financed by Romanian 2014-2020 Structural Funds through the Project POC-CleanTech, SMIS 105958.

Keywords: Green remediation**,** Saline agriculture, novel food and feed sources

GREEN OPTION FOR MANAGING SALTED SOILS

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ABSTRACT

Soil is a vital natural resource, equivalent to air and water, which supports the growth of the terrestrial vegetation, and provides habitats for microorganisms. Changes in soil properties may occur in natural ways, but also as a result of industrial and human activities. In this work the management of soils with anthropic salts contamination by using halophyte plants species is tackled. Lately, in different regions, salinity became a significant ecological constraint for most known crops. Thus, usually these lands became unsuitable for agriculture practices and remain unused. For finding answers to specific cross-sector problems that affect environmental, agriculture and energy sectors, coupling the salts extraction and soil reclamation for such lands,

with bioresources production is considered. The research activities were implemented at both laboratory and in-situ scale. The laboratory trials were developed by using soil sampled from real environment and evolved with the demonstration of plants capacity to adapt at increased salinity. For the in-situ trials, 2500 m^2 land affected by high salinity was allocated in Dambovita county (Romania) for this study. It was proved that soil quality remediation with halophyte plant species can be realized with an efficiency up to 62% in three plants' cycle. As a further factor or consideration, the process can be conducted to became an economical and greener approach for both improving the use of soil and alternative bioresources production. Among species used in this study, Salicornia sp., Limonium sp. and Safflower showed the highest capacity of adaptation and capturing the salts from the soil.

Acknowledge: This work is part of a knowledge transfer project that includes clean technologies for producing and using alternative bioresources, financed by Romanian 2014-2020 Structural Funds through the Project POC-CleanTech, SMIS 105958.

Keywords: halophyte plants species, saline soils, soil reclamation

DRUG DESIGN OF ISOTHIAZOLE DERIVATIVES AGAINST HCV IN A QSAR STUDY USING ARTIFICIAL NEURAL NETWORKS

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ABSTRACT

Drug discovery takes many years and requires big budgets for research and development. QSAR in addition to drug likeness studies contribute strongly to predict and discover new active molecules. In this study, a fundamental and original research on the isothiazole compound is carried out with the aim of predicting the reactivity and the biological activity of the studied compound and its derivatives [1]. The structure of isothiazole is incorporated in several compounds having a biological activity (antibacterial, antifungal, ...), our study aims at derivatives having good activity against the disease of hepatitis C (HCV) [2]. In this work, we perform a QSAR modeling of Isothiazole derivatives by artificial neural networks and Gaussian process seldom used in this approach. Their predictability coefficient was good with a value that exceeds 0.9. Drug likeness studies based on Lipinski and Veber rules, besides the lipophilicity indices permitted to define the drug like molecules [3].

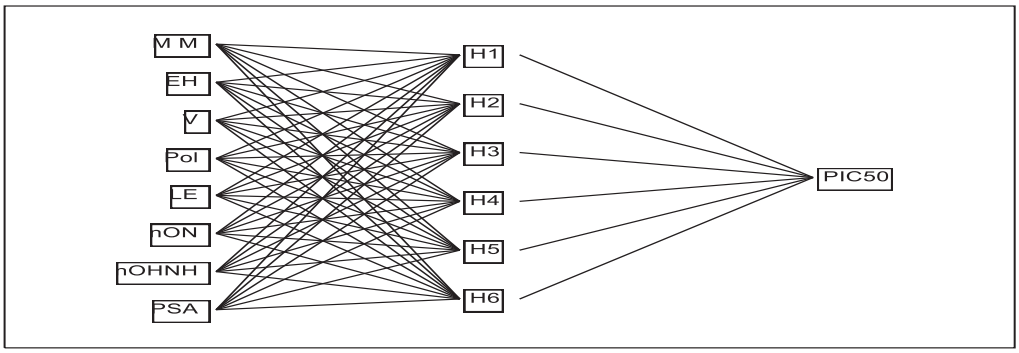

Fig. 1. Structure of ANN

Keywords: Isothiazole Derivatives, QSAR, ANN, Gaussian Process, Drug Likeness.

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SYNTHESIS AND DESIGN OF NEW PYRAZOLE DERIVATIVES WITH POTENTIAL PHARMACOLOGICAL ACTIVITIES.

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Abstract

Pyrazoles are five-membered heterocycles that constitute a class of compounds particularly useful in organic synthesis. They are one of the most studied groups of compounds in the azole family. The presence of the pyrazole ring in different structures leads to diversified applications in different fields such as technology, medicine, and agriculture. In particular, they are described as anticancer, anti-inflammatory, antidepressant, antioxidant, antiviral, antibacterial and antifungal agents, as well as agents of protein glycation inhibitors. All our work is in line with the research theme of the therapeutic chemistry laboratory, namely the synthesis of new potential heterocyclic molecules analogues of pyrazoles, in particular hydrazone derivatives. The molecules thus synthesized will be tested for their pharmacological activities.

Key words: synthesis, pyrazole, hydrazone, Activity, Pharmacologies.

MELANİT İÇEREN FOİD SİYENİTLERİN RAMAN SPEKTROSKOPİK KARAKTERİSTİKLERİ: YOZGAT İNTRÜZİF KOMPLEKSİ

RAMAN SPECTROSCOPIC CHARACTERISTICS OF MELANITE BEARING FOID SYENITES: YOZGAT INTRUSIVE COMPLEX

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ABSTRACT

The foid bearing syenites within the Yozgat Intrusive Complex (YIC), have coarse crystalline, euhedral, dark-black coloured in hand specimen melanite type garnet. They are mainly crop out in Sivritepe, Gedikhasanlı, Mükremin, Karlı hills and Çağlayan vicinity. Foid bearing syenites generally are in the composition of pyroxene syenite, foid syenite, melanite bearing foid syenite, foid syenite porphyry and pyroxene bearing foid syenite porphyry. The scope of this study, is to use the Raman spectra of melanites of the foid syenites to evaluate their significant behavior in the crystallization process of the unit. Melanites are represent the member of the black andradite type of the garnet group. Melanite, is crystallized from the silica undersaturated magma with the $Ca_3Fe^{3+}{}_2(SiO_4)_3$ chemical formula. Melanites exhibit clear with high spectrum in Raman spectroscopic determinations due to the silicate structure form and their high symmetrical habit within the crystal systems. The melanites are dark brown in color, euhedral shape, with high optical relief and are isotropic under the polarizing microscope. Raman spectra of melanites are identical with the andradite in composition and generally show Raman shift peaks in the range of 170-1000 cm^{-1}. The melanite has 13 spectra in the total, of the 12 spectra of these spectra are asymmetrical and only one spectra has symmetrical character. Three groups of Raman spectra of the melanite-type are identical with the andradites Raman spectra. These are distributed as 371 cm^{-1}, 522 cm^{-1} and 879 cm^{-1} respectively. The Raman spectra of the melanites are obtained in two main regions: (a) external vibration below 400 cm^{-1} and (b) internal vibration above 400 cm^{-1}. The first part of the external vibration up to 400 cm^{-1} is related to SiO_4 tetrahedra and divalent cations. The internal vibration of these garnets belongs to the SiO_4 and their spectra are wavenumber ranges of 400-1050 cm^{-1}. Si-O bending modes are observed in the spectral region between 400 and 600 cm^{-1}, and Si-O stretching modes are observed in the spectral region between 700 and 1050 cm^{-1}. The compositional spectra and vibrational modes of the melanites in the YIC show that the crystallization and differentiation processes have been affected by the interaction of different sources of the components rather than the pure main silica undersaturated magma during their crystallization.

Keywords: Yozgat Intrusive Complex, Melanite, Confocal Raman Spectroscopy

ÖZET

Yozgat İntrüzif Kompleksi (YİK)'nde foid içeren siyenitler iri kristalize, özşekilli, el örneğinde koyu-siyah renkli melanit bileşimli granatlar içermektedir. Bunlar daha çok Sivritepe, Gedikhasanlı, Mükremin, Karlı tepeleri ve Çağlayan civarlarında tipik olarak yüzeylenmektedir. Foid içeren siyenitler genel olarak siyenit, foid siyenit, melanitli foid siyenit, foid siyenit porfir, piroksenli foid siyenit porfir bileşimlerine sahiptirler. Bu çalışma kapsamında YİK'nin doğu bölümündeki foid siyenitler içerisindeki melanitlerin Raman spektraları incelenerek kristalizasyon sürecindeki önemleri ortaya konulmuştur. Melanitler, siyah renkli andradit türü granat grubuna girmektedir. Genel olarak $Ca_3Fe^{3+}{}_2(SiO_4)_3$ kimyasal bileşimini sergileyen melanit, silikaca doygun olmayan alkali magmatik kayalar içerisinde tipik olarak görülebilmektedir. Melanitler, Raman spektroskopik incelemelerinde silikat yapısı formu ve kristal sistemlerindeki yüksek simetriden dolayı belirgin ve yüksek spektrum sergilerler. Siyenitler içerisindeki melanitler polarizan mikroskop altında incelendiğinde koyu kahve renkli, özşekilli, yüksek optik engebeye sahip ve izotropturlar. Melanitlerin Raman spektraları andradit bileşimli olup genel olarak 170-1000 cm^{-1} aralığında Raman kayma pikleri göstermektedir. Toplamda 13 spektrum gösteren bu granatların 12 spektrumu asimetrik bir spektrumu ise simetriktir. Melanit türü andraditlerde 3 grup Raman spektrası izlenmiştir. Bunlar sırasıyla 371 cm^{-1}, 522 cm^{-1} ve 879 cm^{-1} Raman kayma spektrumlarıdır. Melanitlerin Raman spektrası (a) dış titreşimi 400 cm^{-1}'in altında ve (b) iç titreşimi ise 400 cm^{-1}'in üstünde olanlar şeklinde başlıca iki bölgede elde edilmiştir. Dış titreşimin 400 cm^{-1}'e kadar olan ilk kısmı SiO_4 tetrahedrası ve iki değerlikli katyonlarla ilişkilidir. Bu granatların iç titreşimi Si-O bağlarına ait olup spektrumları 400-1050 cm^{-1} dalga sayısı aralığındadır. Si-O bükülme modları 400 ile 600 cm^{-1} arasındaki, Si-O gerilme modları ise 700 ile 1050 cm^{-1} arasındaki spektral bölgede görülmektedir. YİK'ndeki melanitlerin bileşimsel spektrumları ve titreşimsel modları, kristalleşmeleri sırasında kristalizasyon ve diferansiyon süreçlerinin silikaca doygun olmayan saf ana magmadan ziyade bileşenlerin farklı kaynaklarının etkileşiminden etkilendiğini göstermektedir.

Anahtar kelimeler: Yozgat İntrüzif Kompleksi, Melanit, Konfokal Raman Spektroskopisi

EFFECTS OF HYDROTHERMAL ALTERATION OF ULTRAMAFIC ROCKS ON BIODIVERSITY: BEYNAM FOREST, ANKARA, TURKIYE

HİDROTERMAL ALTERASYONA UĞRAMIŞ ULTRAMAFİKLERİN BİYOÇEŞİTLİLİĞE ETKİSİ: BEYNAM ORMANI, ANKARA, TÜRKİYE

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ÖZET

Beynam Ormanı, Ankara'nın 50 km güneyinde Bala ilçesinde tarım alanlarıyla çevrili bir ormandır. Karaçam türü ağırlıklı olan bir kalıntı ormanı olup 1966'da korunmaya alınmıştır. Beynam ormanı 400 civarında bitki türünü barındırır.

Beynam Ormanı'nın orta kısmının yaklaşık 3600m2 lik bölümünde bitki örtüsü içermeyen bir alan tespit edilmiş olup, bu alan genel olarak sarımsı kahve renkli gevşek dokulu topraklardan ve serpantinitleşmiş ultramafik kayalardan oluşmaktadır. Bitki örtüsü olmayan alandan 4 adet kaya ve 10 adet toprak örneği alınmış ve analiz edilmiştir. Alınan örneklerin mineraloji, petrografi ve jeokimyasal özelliklerini belirlemek amacı ile Optik Mikroskobu ve X-Işını Floresan (XRF) yöntemleri incelemeleri yapılmıştır. Petrografik ve kimyasal çalışma sonuçlarına göre hidrotermal alterasyona uğramış ultramafik kayaların toprağa ve bitkilere olan etkisini ortaya koymak amacı ile analiz sonuçları karşılaştırılmıştır.

Ultramafik kayalar genel olarak Fe, Mg, Cd, Ni, Co gibi toksik elementlerce zengin olan kaya grubunu temsil etmektedir. Ofiyolitik kayalar kıta kabuğuna bindirmeleri sırasında derin ters faylanmalarla sınırlanmaları ile hidrotermal alterasyona uğrayabilmektedirler. Hidrotermal alterasyon sonucu özellikle bu ofiyolitik kayalar üzerinde gösterdikleri etkiden dolayı çevre birimlere önemli oranda kimyasal etki yapabilmektedirler. Bu çalışma ofiyolitik kayaların hidrotermal alterasyona uğramaları sonucu yakın çevresindeki topraklara etkisi ve üzerinde yetişebilecek bitkilerin gelişme açısından durumu incelenmek üzere yapılmıştır. Bu amaçla toprak ve ofiyolitik kayalardan örnekler alınarak kimyasal analizleri yapılmıştır. Elde edilen kimyasal analiz sonuçlarına göre hidrotermal alterasyona uğramış ofiyolitik kayalardan türeyen topraklarda Co, Ni, Fe ve As değerlerinin yüksek olduğu görülmüş ve bu durumun bitki gelişimini engellediği ve bu sebeple burada bitkinin oluşmadığı ortaya konulmuştur. Ayrıca ultramafik kayaların hidrotermal alterasyona uğraması sırasında ortama yaydığı hidrotermal akışkanların çözeltilerle birlikte toprağı etkilediği ve bitki oluşumuna önemli ölçüde zarar verdiği ortaya konulmuştur.

Anahtar Kelimeler: Hidrotermal alterasyon, Biyoçeşitlilik, Ultramafik

ABSTRACT

Beynam forest is surrounded by agricultural lands in the town of Bala, 50 km south of Ankara. It is a remnant forest dominated by larch species and it was taken under protection in 1966. Beynam forest contains around 400 species of flora.

An area without vegetation has been identified on an area of approximately 3600 m2 in the central part of the Beynam forest. This area is generally composed of yellowish brown in color loose textured soils and serpentinized ultramafic rocks. 4 rock samples and 10 soil samples were taken from the area without vegetation and analyzed. Optical Microscopy and X-Ray Fluorescence (XRF) methods were used to determine the mineralogy, petrography and geochemical properties of the collected samples. The petrographic and chemical studies were done to compare the effect of hydrothermally altered ultramafic rocks on soil and plants.

Ultramafic rocks generally represent a rock group rich in toxic elements such as Fe, Mg, Cd, Ni, Co. Ophiolitic rocks can undergo hydrothermal alteration as they are constrained by deep reverse faulting during their thrust on the continental crust. As a result of hydrothermal alteration, hydrothermal fluids may have a significant chemical effect on the surrounding units, especially due to the effect of these fluids have on these ophiolitic rocks. This study is carried out to examine the effects of the hydrothermal alteration of the ophiolitic rocks on the surrounding soils and the development of the plants that can grow on the Beynam forest. For this purpose, soil and ophiolitic rock samples were collected and the corresponding chemical analysis was performed. According to the results of the chemical analysis obtained, it was observed that the Co, Ni, Fe and As values were high in the soils obtained from the hydrothermally altered ophiolitic rocks, and it was revealed that this situation inhibited the plant growth and therefore no/weak plants could have grown there. In addition, it has been concluded that the hydrothermal fluids released to the environment during the hydrothermal alteration of ultramafic rocks, together with their solutions, affected the soil and resulted in significant damage to plant development.

Keywords: Hydrothermal alteration, Biodiversity, Ultramafic

KARAKAYA GABROSU İÇERISINDEKI İRİ VE İNCE KRISTALEN PIROKSENLERIN KARŞILAŞTIRILMASI, ORTA ANADOLU

COMPARISON OF COARSE AND FINE CRYSTALLINE PYROXENES WITHIN THE KARAKAYA GABBRO, CENTRAL ANATOLIA

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ABSTRACT

The closure of the Neotethys induced collision and extension related felsic and basic magmatism within the Central Anatolia during the late Cretaceous and Early Paleogene. The temporal and spatial of this basic magmatism is very important in the interpretation of magmato–tectonic evolution of the region. Although there are many petrological studies on the petrogenetic of the felsic intrusive rocks however, there is a lack of petrogenetic explanation on the genesis of the mafic units in the region. The products of the basic magmatism are subalkaline and alkaline in character. The nature of Neotethyan ophiolites and these basic products, which related with collision, is the most important undeclared gap. Karakaya gabbro is one of the location for discussing whether belongs to ophiolite or not. Karakaya gabbro have both coarse and fine pyroxene crystals, which generated the layers within the rock. In this study, we have carried out detailed mineralogical and petrographical studies with using different spectroscopic techniques in order to explain the origin of the coarse and fine pyroxene crystals within the Karakaya gabbro. Karakaya gabbros are holocrystalline hipidiomorph texture and mainly composed of plagioclase, pyroxene, amphibole, epidote with rare amount of opaque minerals. The plagioclase compositions are range from bytownite to anorthite. The pyroxenes are augite and clinoenstetite in compositions. Thermobarometry calculations from pyroxenes of Karakaya gabbros are ranging from 1445°C and 25.8 kbar with 99 km emplacement depth. All the detail mineralogical, petrographical and mineral chemistry determinations reveal that the coarse crystals formed at the deeper part of the crust than the fine crystals.

Keywords: Karakaya gabbro, Coarse crystalline gabbro, Thermobarometry

ÖZET

Neotethys'in kapanmasına bağlı olarak, Geç Kretase ve Erken Paleojen dönemlerinde Orta Anadolu'da çarpışma ve yay magmatizmasına bağlı olarak bölgenin temel felsik ve mafik bileşimli magmatik kayaların oluşumlarına neden olmuştur. Bu temel magmatik kayaların zamansal ve mekânsal ilişkileri, bölgenin magmato-tektonik evriminin yorumlanmasında önem arz etmektedir. Bölge ile ilgili felsik bileşimli kayaların oluşumları hakkında birçok petrolojik çalışma olmasına rağmen, ancak mafik bileşimli birimlerin petrogenetik oluşumları hakkında oldukça kıstlı çalışma bulunmaktadır. Mafik bileşimli magmatik kayalar subalkalin ve alkalen karakterlidir. Neotetise bağlı ofiyolit dizini içinde yer alan mafik bileşimli kayalar bu tür mafik kayalardan ayırt edilmesi güç olmasından sürekli tartışma konusuna sahne olmuştur. Çalışma konusunu oluşturan Karakaya gabrosu, ofiyolite ait olup olmadığı tartışılan alanlardan birini oluşturmaktadır. Karakaya civarındaki mafik bileşimli kayalar gabro bileşimindedir. Bu gabrolar aynı anda hem kaba hem de ince kristalin piroksen içermelerinden dikkat çekicidirler.

Bu çalışmada Karakaya gabrosundaki kaba ve ince piroksen kristallerinin kökenini açıklamak için farklı spektroskopik teknikler kullanılarak detaylı mineralojik ve petrografik çalışmalar gerçekleştirdik. Karakaya gabroları holoskristalin hipidiomorfik dokudur ve başlıca plajiyoklaz, piroksen, amfibol, nadiren opak mineral ve epidottan oluşur. Plajiyoklaz bileşimleri, bitovnitten anortite kadar değişir. Piroksenler ojit ve klinoenstatit bileşimindedirler. Karakaya gabrolarının piroksen mineral kimyaları kullanılarak oluşum sıcaklık ve basınç değerleri hesaplanmıştır. Piroksenler genel olarak 99 km derinlikte yaklaşık olarak 1445 ° C sıcaklık ve 25.8 kbar basınç koşullarında oluşmuş olabileceği ortaya konulmuştur. Tüm detay mineralojik, petrografik ve mineral kimyası verileri, benzer kaynaklı iri kristalin piroksenler daha derinde kristalleşerek ana magma ile birlikte yükselerek daha yukarıda ince kristalin piroksenlerle birlikte Karakaya gabrosunu oluşturmuşlardır.

Anahtar Kelimeler: Karakaya gabrosu, İrikristalin gabro, Termobarometre

A NOVEL TWO-ELEMENT ARRAY WITH DGS FOR 5G APPLICATIONS

5G UYGULAMALARI İÇİN YENİ BİR DGS KULLANILAN İKİ ELEMANLI ANTEN DİZİSİ

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ÖZET

Son yıllarda iletişim teknolojilerinin hızla gelişmesiyle kablosuz haberleşme sistemlerine olan ihtiyaç giderek artmaktadır. 5G teknolojisi milimetre dalga bölgesinin sunduğu düşük gecikme, yüksek kapsama alanı, düşük enerji maliyeti ve yüksek verimlilik gibi özellikleriyle birçok mobil iletişim sisteminde yaygın olarak kullanılmaktadır. Mikroşerit antenler, düşük maliyetlere ve kolay üretim özelliklerine sahip olmaktadır. En önemli dezavantajları, arttırılması gereken dar bant genişlikleridir. Bu çalışmada, 5G uygulamalarında kullanmak üzere geniş bantlı yeni bir milimetre dalga mikroşerit yama anteni ve bozulmuş zemin yapısı (DGS) kullanılan iki elemanlı anten dizisi sunulmaktadır. Önerilen antenin toprak yüzeyinde kullanılan küçük-dikdörtgen ve dairesel yuvalar, geri dönüş kaybını ve bant genişliğini iyileştirmeyi amaçlamaktadır. Önerilen antenin iki elemanlı dizisi, giderek incelen hat beslemesi kullanılarak tasarlanmıştır. Toprak yüzeyindeki büyük dikdörtgen yuva, merkez rezonans frekansını değiştirmeyi ve bant genişliği değerini iyileştirmeyi amaçlamaktadır. Önerilen iki elemanlı dizi anten, DGS yapısının kullanılmasıyla, 25.4-33.78 GHz frekansları arasında 8.38 GHz bant genişliği değeri, maksimum -42.59 dB dönüş kaybı ve 10.12 dBi yönlülük kazancı sunmaktadır. Tasarımı yapılan anten dizisindeki iki eleman, 2.2 dielektrik katsayı değerine sahip, 17×10×0.787 mm^3 boyutlarında bir Rogers/5880 dielektrik malzeme kullanılarak CST mikrodalga stüdyo programında simüle edilmektedir. Rezonans frekansı, bant genişliği, yönlülük kazancı, radyasyon verimliliği ve yüzey akımı gibi sayısal analiz sonuçlarına yer verilerek tasarımı yapılan antenin performansı literatürdeki diğer çalışmalarla karşılaştırılmıştır. Basit tasarım ve kolay üretim gibi avantajlarının yanı sıra geniş bant genişliği ve yüksek kazanç sağlayan tasarımımız, gelecekte 5G teknolojisini kullanacak cihazlarda kullanılmak üzere iyi bir aday olmaktadır.

Anahtar Kelimeler: 5G Teknolojisi, Milimetre Dalga, Bozulmuş Zemin Yapısı

ABSTRACT

The need for wireless communication systems is growing due to the fast advancement in communication technology. 5G technology is widely used in many mobile communication systems with features such as low latency, high coverage, low energy cost, and high efficiency offered by the millimeter wave region. Microstrip antennas have low costs and easy manufacturing features. Their main drawback is the narrow bandwidths that need to be increased. This study presents a novel wideband millimeter wave microstrip patch antenna and its two-element array with defected ground structure (DGS) for the 5G applications. The small-rectangular and circular slots used on the ground surface of the proposed antenna aim to improve the return loss and bandwidth. The two-element array of the proposed antenna is designed using a tapered line feed. The large rectangular slot on the ground surface aims to change the center resonant frequency and improve the bandwidth value. The proposed two-element array antenna offers an 8.38 GHz bandwidth value, maximum -42.59 dB return loss, and 10.12 dBi directivity gain between 25.4-33.78 GHz frequencies by using the DGS structure. The two elements in the designed antenna array are simulated in the CST microwave studio program using a 17×10×0.787 mm^3 Rogers/5880 dielectric material with a dielectric coefficient of 2.2. The performance of the designed antenna was compared with other studies in the literature using numerical analysis results such as resonance frequency, bandwidth, directivity gain, radiation efficiency, and surface current. In addition to its advantages, such as simple design and easy production, our design that provides wide bandwidth and high gain makes it a good candidate for devices that will use 5G technology in the future.

Keywords: 5G Technology, Millimeter wave, Defected Ground Structure

IMPORTANCE OF PUBLIC FINANCE IN EXTRAORDINARY PERIODS: CASE OF TURKEY

OLAĞANÜSTÜ DÖNEMLERDE KAMU MALİYESİNİ ÖNEMİ: TÜRKİYE ÖRNEĞİ

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ÖZET

Devletin varlığının en güçlü hissedildiği alan maliye alanıdır. Çağdaş demokratik sistemlerde harcama yapma ve vergi koyma yetkisi devletin elindedir. Keynezyen yaklaşıma göre, ülkelerin çeşitli nedenlerle karşı karşıya kaldıkları ekonomik dengesizliklerin etkilerini devletin ekonomiye müdahalesi ile mali araçları kullanarak azaltmak veya ortadan kaldırmak mümkündür. Bu çalışmanın amacı, Türkiye'de son otuz yıl içerisinde meydana gelen ekonomik kriz ve salgın gibi olağanüstü dönemlerde kamu maliyesinin önemini değerlendirmektir. Kamu maliyesi, kamusal sektörde ortaya çıkan faaliyetlerin iktisadi ve mali yönlerini inceleyen bir bilim olduğundan, çalışmada olağanüstü dönemlerde kamu harcamalarının arttırılması, vergilerin ödenmesi konusunda ödeme kolaylıklarının sağlanması ve borçlanmanın kullanılması gibi konular analiz edilmiştir.

Kamu maliyesi, dolaysıyla kamu ekonomisinin büyüklüğü kamu kesimini temsil eden birimlerin yapmış oldukları harcamaların gayrisafi milli hasılaya oranı veya bu birimlerin elde ettikleri kamu gelirleriyle hesaplanmaktadır. Çalışmada, Türkiye'de 1993 ve sonrasında meydana gelen ekonomik krizler ve son üç yılda yaşanan pandemi döneminde kamu harcamaları, vergi gelirleri ve borçlanmanın önceki yıllara nazaran meydana gelen değişiklikleri ile GSYİH içindeki payları grafik üzerinde değerlendirmeler yapılmıştır. Olağanüstü dönemlerde devletin ekonomiye müdahalesi gereği kamu harcamaları önceki dönemlere göre iki kat artmış ve bu harcamaların GSMH içindeki payı örneğin, 2008 yılında % 87, salgın yılı olan 2020 yılında ise GSYH'daki payı % 78 olmuştur. Kriz ve salgın dönemlerinde ise kamu gelirlerinde özellikle vergi gelirlerinin gayri safi yurtiçi hâsıla içindeki payı % 50'ye ulaşmasına rağmen, bu gelirlerin artış hızı % 8'e kadar düşmüştür. Bunun temel nedeni kriz dönemlerinde vergi borçlarının ödenmesinde kolaylıklarının sağlanması ve Covid-19 döneminde vergi borçlarının ödenmesi konusunda üç ile altı ay erteleme olmuştur. Çalışma sonucunda olağanüstü dönemlerde devletin kamu harcamaları ve vergiler gibi mali araçlarla ekonomiye müdahale etmesi neticesinde meydana gelen dengesizliklerin etkilerini azaltma konusunda başarı elde edilmiştir. Dolayısıyla kamu maliyesinin önemini bir kez daha ortaya çıkmaktadır.

Anahtar Kelimeler: Kamu Maliyesi, Vergi, Kamu Harcamaları

ABSTRACT

The area where the presence of the state is felt most strongly is the financial area. In modern democratic systems, the authority to impose taxes and spend is in the hands of the state. According to the Keynesian approach, it is possible to reduce or eliminate the effects of economic imbalances faced by countries for various reasons, by using financial instruments by the state's intervention in the economy. The aim of this study is to evaluate the importance of public finance in extraordinary periods such as the economic crisis and epidemic that have occurred in the last thirty years in Turkey. Since public finance is a science that examines the economic and financial aspects of activities in the public sector, issues such as increasing public expenditures in extraordinary times, providing payment facilities for paying taxes and using borrowing have been analyzed.

Public finance, hence the size of the public economy, is calculated by the ratio of the expenditures made by the units representing the public sector to the gross national product or by the public revenues of these units. In the study, the changes in public expenditures, tax revenues and borrowing compared to previous years and their shares in GDP during the economic crises that occurred in Turkey in 1993 and after and the pandemic period in the last three years were evaluated on the graph. In extraordinary times, due to the state's intervention in the economy, public expenditures have doubled compared to previous periods, and the share of these expenditures in GNP, for example, was 87% in 2008 and 78% in GDP in 2020 that the year of the epidemic. During the crisis and epidemic periods, although the share of public revenues, especially tax revenues, in gross domestic product reached 50%, the rate of increase in these revenues decreased to 8%. The main reason for this was the facilitation of the payment of tax debts during the crisis periods and the postponement of three to six months in the payment of tax debts during the Covid-19 period. As a result of the study, success has been achieved in reducing the effects of imbalances that occur as a result of the state's intervention in the economy with financial instruments such as public expenditures and taxes in extraordinary times. Therefore, the importance of public finance is revealed once again.

Keywords: Public Finance, Tax, Public Expenditure

THE USE OF NEURO-LINGUISTIC PROGRAMMING TECHNOLOGIES IN EDUCATIONAL PODCASTS AND ADVERTISING TITLES OF EDUCATIONAL PLATFORMS

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Abstract

The work concerns the analysis of neuro-linguistic programming strategies in contextual advertising of the media type. The paper emphasizes the peculiarity of advertising discourse – the impact and manipulation of the consciousness of the target audience. The study examines 50 podcasts and advertising headlines displayed on educational websites, portals and training platforms in order to analyze and classify possible triggers that activate the purchase of the offered product or service.

Keywords: neuro-linguistic programming, manipulation of consciousness, advertising discourse, contextual advertising.

Objectives

NLP originates in 1970, at the University of California, Santa Cruz (USA). Its founders are considered to be linguist John Grinder and mathematician Richard Bundler. Immediately after the appearance of NLP, it gained popularity as an accessible set of well-formed skills and techniques of verbal and nonverbal interaction.

The founders of NLP laid the following principles in it:

Having a choice will always be better than not having one.

● People tend to choose the best of those options that are available to them at the time of choice.

● Everything necessary to achieve the goal is already inside a person, it is only necessary to open access to these hidden resources at the right moment.

● Even a negative result of an action should be perceived as an opportunity to gain a new experience. Each of the problems is just a set of tasks that need to be solved.

● A map (a model of the world) is not a territory (reality).

People tend to evaluate what is happening through their picture of the world, often rejecting the facts of reality.

● Everyone is able to learn a lot and reproduce the achievements of others. If one person has done something, then later it can be modeled and learned by another.

● Determining the leading position of an element in the system is directly related to its adaptive abilities.

● Almost any phenomenon, be it behavior or internal state, can be overestimated in a positive way due to context reframing – it is enough to find the appropriate circumstances for it

All these statements are based on physiological and linguistic provisions. For example, when NLP talks about mental maps and territories, we are talking about the inevitable differences between people, and it is the differences that lead to different views of the same event.

In our research we tried to outline the most typical NLP technologies used in educational podcasts and advertising titles of educational platforms.

Materials and methods

For the purpose of our research we studied 50 educational podcasts and advertising titles of educational platforms.

The principle of the absence of defeats in NLP is becoming widely applicable when describing commodity properties in advertising and annotations. The buyer is offered the so-called reframing of the content - a different formulation based on the correct selection of antonyms and associations related to the predicate to be changed.

Examples

- the device is not particularly powerful, and therefore economical
- the model is old, but time-tested
- the model is available in one color, but it has many functions;
- the model has several basic functions, but is presented in a large selection of color solutions.

Creating sentences using antonyms and associations, NLP uses the studied features of the perception of human speech. They are also used to construct sentences with multiple presuppositions.

Consider an example of a commercial:

When he shows up at my doorstep again, I will send him to all four sides.

● The speaker has a home

● The speaker is expecting a visit from an acquaintance

● The speaker has an unpleasant experience of communicating with a friend

Such a construction of sentences allows you to tell something that obviously will not sound. Conversely, the ability to distinguish between such presuppositions puts the listener in an advantageous position, allowing him to better understand the interlocutor.

Methods of language manipulation of mass consciousness in various areas of human life were engaged in foreign scientists X.Breaker, J. Simon, A.Groh.; this phenomenon is also considered in the works of domestic researchers: S.N.Litunov, O.N. Bykova, E. M. Vereshchagin, etc.

Results

The purpose of our research is to analyze and classify possible triggers that activate the purchase of the offered product or service in these educational podcasts and advertising titles of educational platforms. The obtained data provided a quantitative characteristic of the techniques used, allowing to determine the most \ least frequency models.

In our work, we were based on the classification of models of selling titles offered by the service Postium.ru - one of the most important specialists in the field of business, advertising and digital marketing in the Russian market.

A total of 7 models were identified:

- question model and/or benefits;
- the "Promise" model;
- the information model;
- the "What is it and what result will I get" model;
- the "Call to Action" model;
- the "Personal experience" model;
- the "Intrigue" model.

Conclusion

The cases presented were the most frequent models of the considered podcasts and advertising titles of educational platforms used for the youth target audience (14-26 years old) as media content of educational platforms and portals. The results obtained can be used in the field of linguistic studies of speech effects within the framework of advertising discourse, as well as in the professional activities of marketers in order to increase consumer interest in certain products.

FEATURES OF THE SPEECH STRATEGIES OF THE RUSSIAN PRESIDENT V.PUTIN

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Abstract

The work touches upon the peculiarities of political discourse, its manipulative nature. The authors emphasize the conditions necessary for making a targeted decision/response from a mass audience. The paper describes the peculiarities of the linguistic personality of Russian President V. Putin, the arsenal of his linguistic means.

Keywords: manipulation of mass consciousness, linguistic means, speech strategies, expressiveness, political rhetoric

Objectives

For a long time, linguists engaged in political discourse have proved that in order to ensure the greatest impact on the mass audience, it is not what a politician offers that is more important, but what the electorate perceives, reacting to an artificially created image of a politician, and not his\her objective personal qualities (suggestive approach).

The mass audience (its unit is a "mass person","objective idiot" – an object of manipulation, only accepting knowledge, information according to A.M. Pyatigorsky) does not act independently, but only reacts to circumstances, because the reactions of a "mass person" can almost always be predicted, and it is much easier to do this, precisely by influencing the emotional sphere of the listener. Using psychological methods in propaganda, propagandists do not change the functions of the psyche (the course of mental processes), but only form a person's views on the social and political reality surrounding him\her.

It is the impact on the emotional sphere of the mass audience that can prompt a "targeted" response, cause a predictable reaction, and manipulate the consciousness of listeners. Expressive means of language, verbal and nonverbal, are the main feature of modern political discourse. The purpose of our research is to describe the linguistic personality of Russian President Vladimir Putin, the arsenal of his linguistic means.

Materials and methods

In our study, 10 public speeches in front of a mass audience of the modern Russian president Vladimir Putin were considered. Vladimir Putin managed to make politics "not boring", as it is in civilized countries. His speeches are undoubtedly the object of close study by linguists, speech writers, specialists in neuro-linguistics, psychology of influence, etc. In our study, we examined the texts of speeches by V. Putin, who holds the post of president of the Russian Federation for the fourth term, and therefore is an "established politician", in the role of a "monarch" (according to A. K. Mikhalskaya), leading negotiations with a "sense of the problem" (D. Nirenberg), because his rhetoric in this post represents a portrait of a linguistic personality, different from the one that was inherent in him during his political formation, at the very beginning of his career.

Results

When considering the speeches of Russian President Vladimir Putin, some features inherent exclusively in the arsenal of his linguistic personality were revealed:

1) very weak or complete absence of gestures;

2) abundance of metaphors, idioms, phraseological units, certain stylistic techniques (the most frequent: parallelism, alliteration, repetitions);

3) lively, emotional manner of statements, in particular, in an unprepared speech when answering questions from the audience; a large number of deviations from the language norm, puns, irony;

4) informal communication style;

5) phonetically, speech is jerky and dynamic, posing, deliberate-intentional intonation of the phrase into fragments, syllabic utterance of individual words;

6) simplicity of presentation, which makes language images and speech more accessible and acceptable to the average Russian.

Conclusion

It is indisputable that deviations from the linguistic norm, the unique portrait of the linguistic personality of Russian President Vladimir Putin continues to influence the modern Russian language, modifying it and bringing its own special flavor. Russian president V.Putin being an iconic political figure, is making changes to the modern Russian language at all its levels and layers. It is interesting to note that all these changes in the language can be observed already at the present stage of the development of the Russian language

THE CHANGE OF DETECTION AND EDUCATION OF GIFTED/TALENTED CHILDREN IN THE VISUAL ART FROM THE RENAISSANCE TO THE PRESENT

RÖNESANS'TAN GÜNÜMÜZE GÖRSEL SANATLARDA ÜSTÜN/ÖZEL YETENEKLİ ÇOCUKLARIN KEŞFEDİLMESİ VE EĞİTİLMESİNİN DEĞİŞİMİ

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ÖZET

Sanat tarihine bakıldığında çok büyük sanatçıların çocukluklarında iyi bir sanat eğitiminden geçtiği görülmektedir. Tabi ki layıkıyla eğitilmiş her yetenek en üst seviyeye ulaşacaktır ve tarihte anılan birçok sanatçı bu yoldan geçmiştir. Fakat sanat eğitiminin biçim ve içeriği bugünküne oranla daha farklı bir yapıya sahiptir ve bu yapı günümüze gelene kadar çok ciddi bir değişime uğramıştır. O zamanlar çocuğunun yetenekli olduğu düşünen çoğu aile, onu eğitim alacağı iyi bir sanatçının yanına çırak olarak vermektedir. Bu eğitimi alabilme koşullarını sanat loncaları belirlemektedir. Usta- çırak ilişkisi ile sanat eğitimini yıllarca sürdüren çocuk sonunda ustasının yanından ayrılıp bağımsız bir sanatçı olarak çalışmaktadır. Bu ciddi eğitim yaklaşık 12-14 yaşlarında başmakta ve 8 yıla kadar sürebilmektedir. Zamanla sanat akademileri kurulmuş ve kuramsal bilgi değerli hale gelmiştir. Burada müfredatlar hazırlanmış ve sanatçı yetiştirmek için gereken standartları akademiler belirlemeye başlamıştır. Genişleyerek değişerek günümüze gelen bu sistem bugün dünyanın birçok şehrinde üstün/özel yetenekli çocuklara eğitim veren sanat okullarına dönüşmüştür. Bu okullar farklı sınav ve değerlendirme biçimleriyle özel/üstün yetenekli öğrencileri belirleyerek kabul etmektedir. Rönesans ve öncesinde eğitim sistemi bireysel yeteneklere odaklı bir usta-çırak ilişkisi ile yürütülürken bugün okullarda öğrencilere topluca uygulanan müfredatlar oluşturulmaktadır. Bu makalenin amacı özel yetenekli çocukların sanat eğitimi hakkı kazanma kriterlerinin ve aldığı eğitimin geçmişten günümüze uğradığı değişimi incelemektir. Tarihsel araştırma yöntemi kullanılarak yapılan bu araştırmanın sonucunda üstün/özel yetenekli çocukların hem saptanması hem de eğitim biçimlerinde meydana gelen farklılıklar ortaya konulmuştur.

Anahtar Kelimeler: Görsel Sanatlar, Özel/Üstün Yetenekli Çocuklar, Eğitim.

ABSTRACT

When looking at the art history, it is seen that very great artists had a good art education in their childhood. Of course, any properly trained talent will reach the highest level, and many artists mentioned in history have passed this way. However, the form and content of art education has a different structure compared to today and this structure has undergone a very serious change until today. At that time, most families who thought their child was talented give him an apprenticeship with a good artist to train. Art guilds determine the conditions for receiving this training. Continuing his art education for years with a master-apprentice. relationship, the boy finally leaves his master and works as an independent artist. This serious training begins around the age of 12-14 and can last up to 8 years. Over time, art academies were established and theoretical knowledge became valuable. Curriculums were prepared here and academies began to set the standards required to train artists. This system, which has expanded and changed to the present day, has turned into art schools in many cities of the world, providing education to gifted and talented children. These schools identify and accept gifted/talented students with different exam and assessment formats. While the education system in the Renaissance and before was carried out with a master-apprentice relationship focused on individual talents, today, curricula that are applied collectively to students in schools are being created. The aim of this article is to examine the change in the criteria for gifted children to gain the right to art education and the education they receive from the past to the present. As a result of this research, which was carried out using the historical research method, both the identification of gifted and talented children and the differences in education styles were revealed.

Keywords: Visual Arts, Gifted/Talented Children, Education.

REVIEW OF TSUNAMI RESEARCH ON THE BULGARIAN BLACK SEA COAST

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ABSTRACT

Tsunami hazard and risk assessment along the coast of Europe is one of the priority areas of research in the last three decades. Tsunami research includes the study of documentary evidence, historical data collection, field experiments, laboratory research, theoretical numerical and analytical modelling, and in-depth analysis of recent tsunami events. Research methodologies for tsunami modelling and holistic risk assessment approaches are constantly improving. In this regard, the international research network within the European COST Action AGITHAR, https://www.agithar.uni-hamburg.de working on improving, standardizing, and promoting tsunami research. The AGITHAR scientific network suggested a priority matrix regarding the tractability and sensitivity of the gaps identified in the Probabilistic Tsunami Hazard Assessment (PTHA) and Risk Assessment (PTRA) studies. A contribution to the activities of this COST Action is an implemented project by the NIGGG – BAS financed by the Bulgarian National Science Fund for the Black Sea region. The tsunami studies have two main objectives: 1) to assess the current state-of-the-art of tsunami research at the national level; and 2) to contribute to the reduction of possible adverse effects on potentially vulnerable coastal settlements, coastal and marine infrastructures and natural ecosystems.

Although tsunamis are scarce in the Black Sea, coastal communities should not underestimate such events. In the last century, earthquake tsunamis in the Black Sea have been recorded through records of continuous sea level observations with tide gauges built at specific locations along the coast. This work provides an overview of the achieved preliminary results from the inventory of tsunami sources and gaps in modelling studies of tsunami-generated waves carried out during recent years. Multidisciplinary studies are focused on mapping and dating past events on the Black Sea coast, determining the causes, frequency of recurrence, and current prospects for tsunamis occurrence (risk), which are not yet fully clarified along the Bulgarian coast. Tsunami hazard is poorly understood and not considered in the National methodology for flood hazards and risk in the coastal zone. Studies of active faults with tsunamigenic potential, seismic events recorded by coastal sea level observations, and some extreme meteotsunami events are briefly reviewed. High-resolution data are needed for more credible tsunami numerical modelling for the western Black Sea region. An analysis of available digital models for relief and bathymetry was made for specific locations along the dangerous coastal zone. The results of geodetic and seismic studies carried out so far are presented. UAS imaging of a local area in the northern Bulgarian coast potentially at risk of flooding during extreme natural hazards is planned. The data acquired will be used in tsunami modelling and numerical simulation studies.

Keywords: Tsunami Hazard and Risk, Tsunamigenic Sources, geodetic and seismic data, Bulgarian Black Sea coast

THE ANALYSIS OF THE STUDIES CONDUCTED IN TURKEY ON EVIDENCE-BASED EDUCATION

TÜRKİYE'DE KANIT TEMELLİ ÖĞRETİM ÜZERİNE YAPILAN ÇALIŞMALARININ ANALİZİ

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ÖZET

Geçmiş, gözlemlenebilen ya da deneyimlenebilen bir alan değildir. O ancak, bugüne kadar ulaşan kalıntılar ya da kaynaklar aracılığıyla incelenmektedir. Bu nedenle kanıt temelli öğrenme sosyal bilimcilerin çalışmalarını oluştururken kanıt olarak kullandıkları, kaynakları öğrenme ortamına taşıyarak, kendilerine yönlendirilen sorularla öğrencilerin bu kanıtları analiz edip değerlendirdiği etkinlikler bütünü olarak tanımlanabilir. Araştırmanın amacı Türkiye'de yakın zamanda kanıt temelli öğretim üzerine yapılan çalışmaları metodolojik unsurlar açısından incelemek ve bu çalışmaların kanıt temelli öğretim ile ilgili sonuçlarını değerlendirmektir. Bu araştırma, Türkiye'de kanıt temelli öğretim ile ilgili yapılan tez ve makalelerin incelenmesi ve kanıt temelli öğretim konusunda nasıl bir eğilim olduğunun ortaya çıkarılması amacıyla gerçekleştirilmiştir. Bu amaçla; kanıt temelli öğretim konusunda hedeflenen amaçlar, bu amaçlara ulaşmak kullanılan yöntemler, tercih edilen örneklem grupları, kullanılan veri toplama araçları ve elde edilen sonuçlar değerlendirilecektir. Nitel araştırma yöntemiyle yürütülen bu araştırmada, kanıt temelli öğretim konusunda yapılan çalışmaları incelemek amacıyla, sistematik derleme deseni tercih edilmiştir. Elde edilen verilerin çözümlenmesinde içerik analizi kullanılacaktır. Araştırma 2018-2022 yılları arasında Türkiye'de kanıt temelli öğretim konusunda yapılan çalışmaları kapsamaktadır. Örneklem/çalışma grubu olarak okullar, üniversiteler ve öğretmenler dışındaki araştırmalar çalışma kapsamı dışında tutulacaktır. Araştırma kapsamında, kanıt temelli öğretim ele alındığından bu konu ile ilgili olmayan veriler araştırmaya dâhil edilmemiştir. Türkiye'de yapılmış çalışmalar Google Akademik, YÖK Ulusal Tez Merkezi, ULAKBİM, Dergipark, Web of Science, EBSCOhost-ERIC, ELSEVIER Scopus, ProQuest, SAGE, SpringerLink ve Taylor & Francis veri tabanlarına "kanıt temelli öğretim" ve "kanıt kullanma" benzeri anahtar kelimeler yazılarak 2018-2022 yılları arasındaki makale ve tezler taranacaktır.

Anahtar Kelimeler: Kanıt temelli öğretim, Kanıt kullanma, Kanıt.

ABSTRACT

The past is not a field that can be observed or experienced. It is studied only through the remains or sources that have survived to this day. For this reason, evidence-based learning can be defined as a set of activities that social scientists use as evidence while creating their studies, by transferring the resources to the learning environment, and by the students analyzing and evaluating this evidence with the questions directed to them. The aim of the research is to examine the recent studies on evidence-based teaching in Turkey in terms of methodological elements and to evaluate the results of these studies on evidence-based teaching. This research was carried out in order to examine the theses and articles about evidence-based teaching in Turkey and to reveal what kind of trend there is in evidence-based teaching. For this purpose; The aims aimed at evidence-based teaching, the methods used to achieve these aims, the preferred sample groups, the data collection tools used and the results obtained will be evaluated. In this study, which was carried out with the qualitative research method, a systematic compilation design was preferred in order to examine the studies on evidence-based teaching. Content analysis will be used to analyze the obtained data. The research covers the studies on evidence-based teaching in Turkey between the years 2018-2022. Researches other than schools, universities and teachers will be excluded from the scope of the study as a sample/study group. Since evidence-based teaching was discussed within the scope of the research, data that were not related to this subject were not included in the research. Studies conducted in Turkey have been added to Google Academic, YÖK National Thesis Center, ULAKBİM, Dergipark, Web of Science, EBSCOhost-ERIC, ELSEVIER Scopus, ProQuest, SAGE, SpringerLink and Taylor & Francis databases like "evidence-based teaching" and "evidence use". Articles and theses between 2018-2022 will be scanned by typing keywords.

Keywords: Evidence-based teaching, Using evidence, Evidence.

ADAPTATION STUDY OF THE LEISURE ATTITUDE SCALE TO THE FIELD OF SPORTS SCIENCES

BOŞ ZAMAN TUTUM ÖLÇEĞİNİN SPOR BİLİMLERİ ALANINA UYARLAMA ÇALIŞMASI

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ÖZET

Boş zamana karşı olan öznel değerlendirmeleri ölçmeye yarayan, boş zaman tutum ölçeğinin spor bilimleri alanında kullanılabilmesi amacı ile yapılan bu çalışmada; Ragheb ve Beard tarafından 1982 yılında oluşturulan ölçek (Boş Zaman Tutum Ölçeği) kullanılmıştır. Türk kültürüne uyarlama ve güvenirlik çalışmaları ise Akgül ve Gürbüz tarafından yapılmıştır. 36 madde ve "duyuşşal", "bilişsel", "davranışsal" olmak üzere 3 alt boyuttan oluşan ölçek 5'li likert tipi olarak puanlanmaktadır. Araştırmanın evrenini Trakya Üniversitesi KSBF' inde okuyan 1330 öğrenci oluşturmaktadır. Ölçeğe ait maddelerin spor bilimleri evrenine uygunluğunu belirleyebilmek için doğrulayıcı faktör analizi uygulanmıştır. Doğrulayıcı faktör analizi, önceden oluşturulan bir model aracılığıyla gözlenen değişkenlerden yola çıkarak gizli değişken (faktör) oluşturmaya yönelik bir işlemdir. Genellikle ölçek geliştirme ve geçerlilik analizlerinde kullanılmakta veya önceden belirlenmiş bir yapının doğrulanmasını amaçlamaktadır. Modelde maddelerin faktör yükleri çok iyi çıksa bile uyum indeksleri normal değerleri yakalayamayabilir. Bu uyum indeksleri ki-kare (x^2), ki-kare/serbestlik derecesi (x^2/sd), mutlak uyum indeksleri (GFI, AGFI), yaklaşık hataların ortalama karekökü (RMSEA), artık temelli uyum indeksi (RMR) gibi isimler alır. Ölçeğe ait uyum indekslerine bakıldığında; x^2 değeri iyi uyum (0,788), x^2/sd iyi uyum (2,421), AGFI değeri kabul edilebilir uyum (0,913), RMSEA değeri kabul edilebilir uyum (0,077) ve RMR değeri kabul edilebilir uyum (0,069) olarak belirlenmiştir. Ölçme aracının üç alt boyutu altında yer alan toplam 36 madde oluşan ölçme aracının güvenirliğinin hesaplanmasında iç tutarlılık göstergesi olan Cronbach Alfa güvenirlik katsayıları 0,87 ile 0,91 arasında hesaplanmıştır. Elde edilen veriler doğrultusunda kullanılan ölçeğin, yüksek güvenirlikli olduğu ve spor bilimleri evrenine kültürel olarak uyum sağladığı tespit edilmiştir.

Anahtar Kelimeler: Ölçek Uyarlama, Spor Bilimleri, Boş Zaman

ABSTRACT

In this study, which was conducted with the aim of using the leisure attitude scale, which is used to measure subjective evaluations against leisure time, in the field of sports sciences; The scale (Leisure Attitude Scale) created by Ragheb and Beard in 1982 was used. Adaptation to Turkish culture and reliability studies were carried out by Akgül and Gürbüz. The scale, which consists of 36 items and 3 sub-dimensions as "affective", "cognitive" and "behavioral", is scored as a 5-point Likert type. The population of the research consists of 1330 students studying at Trakya University KSBF. Confirmatory factor analysis was applied to determine the suitability of the items of the scale to the sports science universe. Confirmatory factor analysis is a process for creating a latent variable (factor) based on the variables observed through a pre-created model. It is generally used in scale development and validity analyzes or aims to verify a predetermined structure. Even if the factor loadings of the items in the model are very good, the fit indices may not reach the normal values. These fit indices take names such as chi-square (x^2), chi-square/degrees of freedom (x^2/sd), absolute fit indices (GFI, AGFI), root mean square error of approximation (RMSEA), residual-based fit index (RMR). Considering the fit indices of the scale; The x^2 value was determined as good fit (0.788), the x^2/sd good fit (2,421), the AGFI value as acceptable fit (0.913), the RMSEA value as acceptable fit (0.077), and the RMR value as acceptable fit (0.069). Cronbach's Alpha reliability coefficients, which are an indicator of internal consistency, were calculated between 0.87 and 0.91 in the calculation of the reliability of the measurement tool, which consists of a total of 36 items under the three sub-dimensions of the measurement tool. It has been determined that the scale used in the direction of the obtained data has high reliability and culturally adapts to the universe of sports sciences.

Keywords: Scale Adaptation, Sports Science, Leisure Time

ATTITUDES OF SPORTS SCIENCES STUDENTS ABOUT LEISURE TIME ACTIVITIES

SPOR BİLİMLERİ ÖĞRENCİLERİNİN BOŞ ZAMAN FAALİYETLERİ HAKKINDAKİ TUTUMLARI

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ÖZET

Bu çalışmanın amacı, spor bilimleri fakültesi öğrencilerinin, boş zaman faaliyetleri hakkındaki tutumlarını çeşitli değişkenlere göre incelemektir. Bu amaçla Ragheb ve Beard tarafından 1982 yılında oluşturulan, Türkçe çevirisi Akgül ve Gürbüz tarafından gerçekleştirilen "Boş Zaman Tutum Ölçeği" kullanılmıştır. Araştırmanın evrenini Trakya Üniversitesi KSBF' inde okuyan 1330 öğrenci oluşturmaktadır. Yazıcıoğlu ve Erdoğan tarafından %95 güven aralığında örneklem sayısı en az 288 olarak hesaplanmaktadır. Araştırmamızda rastgele örnekleme yöntemi ile toplamda 931 öğrenciye ulaşılmıştır. Örneklem grubunun cinsiyet, bölüm ve gelir değişkenlerine göre, boş zaman tutum ölçeğinden almış oldukları puanlar SPSS 25.0 paket programı kullanılarak analiz edilmiştir. Çalışmada elde edilen veriler analiz edilerek betimsel istatistikleri çıkarılmıştır. Verilerin normallik dağılımı anlamlandırabilmek için basıklık (kurtosis) ve çarpıklık (skewness) ölçüleri incelenmiştir. Araştırmanın bağımsız değişkenlerinden "cinsiyet" değişkeninin incelenmesinde bağımsız gruplar T-Testi, "bölüm" ve "gelir" değişkenleri için bağımsız gruplar tek yönlü Varyans analizi (One-Way ANOVA) kullanılmıştır. İstatistiksel olarak anlamlı farklılık ($p<0,05$) tespit edilen testlerin etki büyüklükleri hesaplanmıştır. Katılımcıların cinsiyet ve bölüm değişkeninin tümünde, gelir değişkeninin duyuşsal ve davranışsal alt boyutlarında anlamlı farklılaşma tespit edilmiştir ($p<0,05$).

Anahtar Kelimeler: Spor Bilimleri, Boş Zaman, Tutum

ABSTRACT

The aim of this study is to examine the attitudes of sports science faculty students towards leisure activities according to various variables. For this purpose, the Leisure Attitude Scale, which was created by Ragheb and Beard in 1982 and translated into Turkish by Akgül and Gürbüz, was used. The population of the research consists of 1330 students studying at Trakya University KSBF. The sample size is calculated as at least 288 by Yazıcıoğlu and Erdoğan at the 95% confidence interval. In our research, a total of 931 students were reached by random sampling method. According to the gender, department and income variables of the sample group, the scores they got from the leisure attitude scale were analyzed using the SPSS 25.0 package program. The data obtained in the study were analyzed and descriptive statistics were obtained. In order to make sense of the normality distribution of the data, kurtosis and skewness measures were examined. T-Test for independent groups, one-way analysis of variance (One-Way ANOVA) for independent groups for "department" and "income" variables was used to examine the "gender" variable, one of the independent variables of the study. The effect sizes of the tests with statistically significant difference ($p<0.05$) were calculated. A significant difference was found in all of the participants' gender and department variables, and in the affective and behavioral sub-dimensions of the income variable ($p<0.05$).

Keywords: Sports Science, Leisure Time, Attitude

SERVİKAL SPONDİLOTİK MİYELOPATİ NEDENİYLE AÇIK-KAPI TEKNİĞİYLE SERVİKAL LAMİNOPLASTİ YAPILAN 24 OLGUNUN KLİNİK SONUÇLARI

CLINICAL OUTCOMES FOLLOWİNG CERVICAL OPEN-DOOR LAMINOPLASTY FOR 24 PATIENTS WITH CERVICAL SPONDYLOTIC MYELOPATHY

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ABSTRACT

OBJECTIVE: Cervical laminoplasty is an effective procedure for cervical spinal stenosis. We describe the technique of open door cervical laminoplasty and present our clinical results.
METHODS: All patients had myeloradiculopathy. 24 patients undergoing open door laminoplasty were included in the study. Pre- and postoperative kyphotic evaluations were measured using sagittal tangent method. Neurologic functions and recovery in myelopathy in patients were evaluated using the Nurick score. Peri- and postoperative complications were recorded.

RESULTS: Clinical evaluations showed that all patients had reduced postoperative complaints compared to their preoperative complaints. Average surgery time was 155 min. Average blood loss was 280 cc. According to the Nurick classification, no improvement was observed in five patients, sixteen patients showed improvement of one grade, and three patients showed an improvement of two degree. C5 nerve root paralysis was observed in two patients. Complete recovery was observed in both patients within 2 months.

CONCLUSIONS: Cervical open door laminoplasty is a safe and effective procedure for cervical spondylotic myelopathy.

KEYWORDS: Cervical spine, Myelopathy, Cervical stenosis, Laminoplasty, Posterior surgery

ÖZET

AMAÇ: Servikal spinal stenoz olgularında servikal laminoplasti etkin bir tedavi yöntemidir. Açık kapı laminoplasti tekniğini kullanarak tedavi ettiğimiz olguların klinik sonuçlarını sunduk.

YÖNTEM: Tüm olgularda servikal radikülomiyelopati bulguları mevcuttu. Bu çalışmada servikal laminoplasti uyguladığımız 24 olgunun cerrahi öncesi ve sonrası sagittal plan değerlendirmeleri yapılmıştır. Nurick kalsifikasyonuna göre hastaların iyileşme dereceleri ortaya konmuştur.

SONUÇLAR: 5 olguda belirgin fark izlenmemiştir. 16 olguda sınıflamaya göre bir seviye iyileşme gözlenmiştir. 3 olguda 2 seviye iyileşme gözlenmiştir. İki olguda C5 kök geçici paralizisi gözlenmiş olup her iki olguda da cerrahiden iki ay sonra tam iyileşme saptanmıştır. Başka bir cerrahi komplikasyon izlenmemiştir.

ÇIKARIM: Servikal laminoplasti, endikasyonu olan olgularda etkin bir dekompresyon yöntemidir.

ANAHTAR SÖZCÜKLER: Servikal omurga, miyelopati, servikal stenoz, laminoplasti, posterior cerrahi

INVESTIGATION OF THE USAGE OF FIBER CONCRETE WITH BLAST FURNACE SLAG (BFS) ADDITIVES AS ROAD PAVEMENT ON VERY WEAK BEARING STRENGTH SOIL

YÜKSEK FIRIN CÜRUFU KATKILI LİFLİ BETONLARIN TAŞIMA GÜCÜ ÇOK ZAYIF ZEMİNLERDE YOL KAPLAMASI OLARAK KULLANILABİLİRLİĞİNİN ARAŞTIRILMASI

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ÖZET

Günümüzde ulaşım sektörü; nüfus artışı, teknolojik ve ekonomik gelişmelere bağlı olarak hızla büyümektedir. Türkiye'de ulaşım sistemleri arasında en çok kullanılan ulaşım türü karayolu ulaşımıdır. Ancak, karayollarında her geçen gün araç sayısının artmasıyla birlikte trafik yoğunluğu da artmakta, bu durum yol üstyapısının deforme olmasına neden olmaktadır. Bu sebeple yol yapım çalışmalarında daha dayanıklı, uzun ömürlü ve maliyeti daha etkin kılacak yeni yöntem ve teknikler sürekli geliştirilmektedir. Özellikle, son yıllarda beton teknolojisinde yaşanan hızlı gelişmelere bağlı olarak, beton yol kaplamalarının fiziksel ve mekanik dayanımını arttırmak için çeşitli katkı maddelerinin kullanımına hız verilmiştir. Bu çalışmada ise yol kaplamasında kullanmak amacıyla, ağırlıkça %0 (kontrol numune) ve %0,75 oranlarında çelik lif ile güçlendirilmiş, çimento ikamesi olarak ağırlıkça %0, %15, %20, %25 ve %30 oranlarında YFC'nin ikame edildiği beton numuneleri üretilmiştir. Bu numuneler 28 günlük kür süresi sonunda dört noktalı eğilme dayanımı deneyine tabi tutulmuş ve kontrol numunesi referans alınarak değerlendirilmiştir. Değerlendirme neticesinde, AASHTO 1993 beton kaplama tasarım yöntemi ile taşıma gücü çok zayıf zeminler (plastik kil) için farklı trafik yükleri altında (1×10^6, 5×10^6, 10×10^6, 50×10^6, 100×10^6, 200×10^6 ve 400×10^6) beton plak (kaplama) kalınlık hesaplamaları yapılmıştır. Deney neticesinde, çelik lif ve YFC katkılı beton numunelerinin eğilme dayanımlarının kontrol numunesine göre %9,77-%13,54 aralığında artış gösterdiği tespit edilmiştir. Bu sonuçlar esas alınarak yapılan beton kaplama kalınlık hesaplamalarında, taşıma gücü çok zayıf zeminler üzerine inşa edilecek beton yol kaplamalarında, farklı trafik yükleri için beton kaplama kalınlıklarının %4,35-6,63 aralığında azaldığı tespit edilmiştir.

Anahtar Kelimeler: Beton Yol Kaplaması, Yüksek Fırın Cürufu (YFC), Çelik Lif, Eğilme Dayanımı, AASHTO 1993 Tasarım Yöntemi.

ABSTRACT

Today, the transportation sector; population growth is growing rapidly depending on the development of technology and economic developments. Highway transport is the most widely used mode of transport in Turkey. However, with the increase in the number of vehicles on the highways, the traffic density also increases, which causes the road pavement to deform. For this reason, new methods and techniques are constantly being developed in road construction works that will make them more durable, long-lasting and more cost effective. In particular, depending on the rapid developments in concrete technology in recent years, the use of various additives has been accelerated to increase the physical and mechanical strength of concrete pavements. In this study; concrete specimens reinforced with steel fiber at 0% (control specimen) and 0.75% by weight and in which 0%, 15%, 20%, 25% and 30% by weight BFS were substituted as cement substitute were produced. These specimens were subjected to a four-point flexural strength test at the end of the 28-day curing period and evaluated with reference to the control specimen. As a result of the evaluation; with the AASHTO 1993 concrete pavement design method, concrete pavement thickness calculations were made under different traffic loads (1×10^6, 5×10^6, 10×10^6, 50×10^6, 100×10^6, 200×10^6 and 400×10^6) for very weak bearing strength soil. As a result of the experiment, it was determined that the flexural strengths of the steel fiber and BFS reinforced concrete specimens increased between 9.77% and 13.54% compared to the control specimen. In the concrete pavement thickness calculations based on these results, it was determined that the concrete pavement thicknesses for different traffic loads decreased in the range of 4.35-6.63% in the concrete road pavements to be built on very weak bearing strength soil.

Keywords: Concrete Pavement, Blast Furnace Slag (BFS), Steel Fiber, Flexural Strength, AASHTO 1993 Design Method.

VIOLENCE PHENOMENON, CAUSES AND MANIFESTATION FORMS. ASPECTS FROM THE DRAMATIC STRUGGLE OF WOMEN FOR STATUS IN SOCIETY

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ABSTRACT

The purpose of the present paper is to capture and raise awareness of the devastating effects of violence in the lives of some women, giving a special place to marital violence. Taking into account that violence is very widespread in all cultures and countries, some acts of violence even favoring wars such as the situation in the Black Sea basin, the approach to violence is necessary with its involvement in all areas of social life in the conditions where the economic, political and culture can influence it. The research objective identifies the implications of education in the phenomenon of domestic violence as part of the manifestation of violence in general. To begin with, violence in general was defined, then the theories underlying violence were highlighted: biological, psychological and social. Sociologists pay more attention to sociological theories because, even if biological or psychological factors are involved, they are largely influenced by social factors. Research in the field of marital violence also started from the hypothesis that there is a link between violence and the level of education that allows this phenomenon to be quite extensive. As a research methodology, a qualitative-quantitative approach was carried out on a sample of 200 individuals. As a data collection method, the structured interview was chosen to identify the link between the level of education and the degree of domestic violence. The sample is homogeneous with victims from rural and urban areas. The level of education of the victims, which ranged from elementary to higher, indicated as the most vulnerable category women with secondary education, followed by those with higher education. The high percentage of victims with higher education reveals, as mentioned, the fact that these women do not turn to specialized social assistance, but request medical assistance.
A decrease in violence could be achieved by changing the mentality of the population in a positive sense, through education, completing the legal framework and by tightening the sanctions for aggressors.

Keywords: Domestic violence, education, biological factors, social factors, economic factors

INNOVATIVE ENERGY TECHNOLOGIES: TOWARDS SUSTAINABLE ENERGY

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ABSTRACT

Renewable energy sources are gaining increasing attention around the world. The main reasons for this are to increase the security of energy supply and to mitigate the dangerous climate change associated with the emission of greenhouse gases into the atmosphere. Fossil fuel resources are limited and unevenly distributed. Some countries have large quantities of them, while others are forced to import fuel and thus become dependent on fuel-exporting countries. The energy sector occupies one of the most important roles in terms of economic, social and environmental protection in order to achieve sustainable development. However, the energy sector is one of the most polluting sectors of the economy, causing such unbalanced effects of energy development as such as CO2 and air emissions, waste accumulation, water pollution, deforestation and soil degradation. Therefore, sustainable energy is one of the EU's priority policy areas in implementing sustainable development goals. Sustainable energy is the production and consumption of energy that ensures the long-term goals of human development in all social, economic and environmental aspects. This could be equated to an effort to reconcile a country's economic growth and social progress without wasting non-renewable energy resources and without endangering the ecological balance. Sustainable energy uses innovative energy technologies from renewable energy sources such as hydropower, solar, wind, waves, tides, geothermal energy, bioenergy. These innovative energy technologies also improve energy efficiency. Renewable energy sources such as biomass, solar, wind, geothermal and hydropower are indigenous sources of energy, reducing the need for fuel imports and increasing energy security. When using renewable energy sources, significantly lower amounts of greenhouse gases are emitted into the atmosphere. Innovative energy technologies can play an important role in the development of sustainable energy, taking into account the economic, social and environmental indicators of sustainable development. The objective of this paper is to systematically review the literature on the importance of innovative energy technologies in the development of sustainable energy. Methods of the research – systematic scientific literature analysis. In conclusion it could be added, that innovative energy technologies can accelerate the transition to sustainable energy. Sustainable energy is an integral part of sustainable development, and it is important to take into account economic, social and environmental aspects when implementing sustainable energy.

Keywords: innovative energy technologies, sustainable energy technologies, sustainable energy, clean energy, sustainable development.

MACRONUTRIENT LEVELS IN PREGNANT WOMEN WITH DIFFERENT TYPES OF ARTERIAL HYPERTENSION

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Keywords: pregnancy, chronic arterial hypertension, macronutrients

Relevance.
Cardiovascular diseases occupy the main place in the structure of extragenital pathology in pregnant women, accounting for about 80%, and are still one of the leading causes of maternal and perinatal mortality, with a clear tendency to increase. Chronic arterial hypertension (CAH) occupies a special place among them. CAH during pregnancy, which is recognized as one of the most important causes of morbidity and mortality of the mother, fetus/newborn, negatively influencing the long-term prognosis for women and further development of their children.

Objective: to compare serum potassium, sodium, magnesium, and total calcium levels in pregnant women with chronic arterial hypertension and gestational arterial hypertension.
Material and Methods: 50 pregnant women with chronic arterial hypertension in the first trimester of pregnancy and 30 pregnant women with gestational hypertension were included in the study. Quantitative serum elemental analysis was performed for 4 elements: Ca, K, Na, Mg by inductively coupled plasma atomic emission spectrometry (spectrometer ICP MS 7700e, Intertech. Corp., USA).

Results. The age composition of the pregnant women observed ranged from 20 to 37 years.
The relationship between the levels of certain macronutrients and the course of gestation and labor in the examined pregnant women was analyzed. Based on controls for electrolytes during pregnancy, only 28% of pregnant women with chronic arterial hypertension had normal serum sodium and 43% had normal serum potassium concentrations, whereas calcium and magnesium concentrations were low in all trimesters. Mean serum magnesium and total calcium levels in women with gestational hypertension were 0.67±0.25 and 2.16±0.52 mmol/L in the first and second trimesters of gestation, respectively, and were slightly reduced in the third trimester.

Conclusion. Analysis of macronutrients in pregnant women with CAH revealed a significant reduction in vital electrolytes. Magnesium and calcium deficiencies can significantly worsen pregnancy outcome in women with hypertension.

COBALT CHLORIDE-INDUCED HISTOPATHOLOGICAL CHANGES IN MOUSE BRAIN

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ABSTRACT

Objectives. Cobalt (Co) overexposure is associated with adverse health impact, including neurotoxic effects. The present study aimed to examine the effect of chronic cobalt chloride exposure on brain morphology in mature mice.

Methods. Pregnant mice were exposed to 75 mg (low dose) or 125 mg (high dose)/kg b.w. cobalt chloride ($CoCl_2 \times 6H_2O$) with drinking water for 3 days before delivery and treatment continued until postnatal day 45 of the pups. Age-matched mice obtaining regular tap water were used as controls. Brains of control and Co-treated mice were excised, weighed and processed for histological studies.

Results. Exposure to low-dose cobalt chloride provoked substantial histopathological changes in the mouse cerebral and cerebellar cortices. Numerous shrunken neurons with pyknotic nuclei were observed. Enlarged perineuronal, periglial and perivascular spaces were also demonstrated. Purkinje cell (PC) layer appeared disorganized as areas with loss of PC or shrunken PC with irregular shape were observed. These changes were less pronounced in high-dose treated mice and correspond to our previous data for brain Co content, suggesting defense mechanism activation against metal accumulation.

Conclusions. The results are indicative of cobalt's neurotoxic potential and could be considered in health risk assessment.

Keywords: Cobalt chloride, mouse brain, histopathological changes

EFFECT OF EXPERIMENTALLY INDUCED DIABETES ON OXIDATIVE STRESS MARKERS IN RELATION TO TESTICULAR INFLAMMATORY RESPONSE

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ABSTRACT

Oxidative stress and inflammation, accompanying diabetes mellitus (DM), are risk factors for spermatogenesis and male fertility. Our study aimed to investigate the effects of neonatally (NDM) or prepubertally induced (PDM) diabetes on oxidative stress markers in tandem with inflammatory response of adult rat testis (day 50). DM status was validated by significant elevation of serum glucose (Glu) levels, more pronounced in prepubertal DM than neonatal DM. Elevated Glu levels induced inflammation manifested by increased expression of tumor necrosis factor-α (TNF-α) and 3-Nitrotyrosine (3-NT) in germ and somatic cells of the testes, especially in PDM group. Levels of 3-NT were significantly higher in testis homogenates of diabetic animals. Increased lipid peroxidation associated with oxidative stress was demonstrated by elevated malondialdehyde (MDA) levels and increased 4-Hydroxy-2-nonenal (4-HNE) expression and concentration in diabetic testes from both groups. Diabetic status in adulthood probably leads to faster depletion of antioxidant capacity of cells, evidenced by elevated hydrogen peroxide levels and decreased catalase activity in NDM and PDM groups.

Our data indicate that hyperglycemia is associated with inflammatory and oxidative stress suggeting that PDM, more than NDM are involved in these pathophysiological processes that in turn are risk factors for spermatogenesis and male fertility.

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Keywords: Diabetes mellitus, oxidative stress markers, inflammation, male fertility

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