ABSTRACT BOOK

BALKAN 7. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

ÜSKÜP
3 - 5 Şubat 2023

BALKAN
7. ULUSLARARASI
UYGULAMALI
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KONGRESİ

BALKAN 7TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

February 3-5, 2023 - Skopje

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FEBRUARY 3-5, 2023
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PERCENTAGE OF PARTICIPATION
45% From Turkey And 55% Papers From Other Counteries

LANGUAGES
Turkish, English, Russian, Persian, Arabic

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04. 02. 2023	10: 00 – 12: 00 - Time zone in Turkey (GMT+3)
Meeting ID: 844 5423 9457	Passcode: 350123
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Assoc. Prof. Dr. Fuat KORKMAZER	PATERNALİST LİDERLİK ÜZERİNE YAZILMIŞ LİSANSÜSTÜ TEZLERİN BİBLİYOMETRİK YÖNTEMLE İNCELENMESİ
Dr.,GİZEM KAYA	EĞİTİM VE SAĞLIK HARCAMALARININ CİNSİYET EŞİTSİZLİĞİ ÜZERİNDEKİ ETKİSİ: AZ GELİŞMİŞ VE GELİŞMEKTE OLAN ÜLKELER ÖRNEĞİ
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Doktora Öğrencisi, PINAR ALYAR Dr. Öğr. Üyesi TUĞÇE OZANSOY ÇADIRCI	MARKA AŞKI YAŞAYAN TÜKETİCİLERİN FİNANSAL KISITLAR, FİNANSAL KAYGI, BORÇTAN KAÇINMA EĞİLİMİ VE ALGILADIKLARI FİNANSAL RİSKE BAĞLI OLARAK BÖLÜMLENDİRİLMESİ

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Dr. Öğr. Üyesi Yusuf DİNÇ	BAĞIMSIZ DENETİMDE ZORUNLU ROTASYON UYGULAMASININ BAĞIMSIZ DENETİM KALİTESİ ÜZERİNE ETKİSİ: BİST İMALAT SEKTÖRÜNDE BİR ARAŞTIRMA
Dr. Öğr. Üyesi Yusuf DİNÇ	KEY AUDIT MATTERS WITH BDS 701 IN INDEPENDENT AUDIT REPORTS: AN APPLICATION IN BIST MANUFACTURING SECTOR
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Dr. MERAL ÇABAŞ	A FOURIER APPROACH TO THE RELATIONSHIP BETWEEN DEFENSE EXPENDITURES AND ECONOMIC GROWTH IN TURKEY
Doç. Dr. Kemal YAMAN	BİR YEREL YÖNETİM BİRİMİ OLARAK METROPOLİTEN ALANLAR: LOS ANGELES ÖRNEĞİ
Doç. Dr. Kemal YAMAN	KÜRESEL İKLİM DEĞİŞİKLİĞİNİN ULUSAL DÜZEYDEKİ ETKİLERİ
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Zohaib Hassan Sain	STUDENTS ASSESSMENT OF ONLINE EDUCATION DURING THE COVID-19 EPIDEMIC
Doktora Öğrencisi, CANER ÇABUK Prof. Dr. CENGİZ ÖZYÜREK	HAFIZA TEKNİKLERİ STRATEJİLERİNİN 6. SINIF FEN BİLGİSİ DERSİNDE KULLANILMASININ ÖĞRENCİLERİN BAŞARILARINA VE KALICILIĞA ETKİSİ
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Assist. Prof. Dr. Songül MOLLAOĞLU	INVESTIGATION OF THE RELATIONSHIP BETWEEN THE CONTEMPORARY ART ATTITUDES OF THE STUDENTS IN THE DEPARTMENT OF ART EDUCATION AND THEIR PERSONAL AND EDUCATIONAL CHARACTERISTICS
Prof. Dr. Oğuzhan SEVİM Arş. Gör. Fetullah UYUMAZ	EV ÖDEVLERİNE İLİŞKİN ÖĞRETMEN GÖRÜŞLERİNİN İNCELENMESİ
Arş. Gör. Fetullah UYUMAZ Prof. Dr. Oğuzhan SEVİM	EV ÖDEVLERİNE İLİŞKİN ANNE-BABA GÖRÜŞLERİNİN İNCELENMESİ
Prof. Dr. ADEM BAYAR GÜLÇİMEN ÇALIŞKAN	TEACHER'S OPINIONS ON THE PROBLEMS IN NORMAL (FULL DAY) TEACHING
Prof. Dr. ADEM BAYAR GÜLÇİMEN ÇALIŞKAN	PROBLEMS FACED BY STUDENTS ATTENDING THE ERASMUS PROGRAM
Assoc. Prof. Dr. Mesut Bulut Assoc. Prof. Dr. Abdulkadir Kırbaş	INVESTIGATION OF POSTGRADUATE THESES TITLED "SPELLING RULES AND PUNCTUATION MARKS" IN TURKEY
Assoc. Prof. Dr. Abdulkadir Kırbaş Assoc. Prof. Dr. Mesut Bulut	ANALYSIS OF THE TURKISH TEXTBOOK'S ACTIVITIES IN TERMS OF THEIR COMPATIBILITY WITH THE 7E LEARNING MODEL
Y.L Öğrencisi: Ümmügülsüm YİĞİTER	ÖZBEKİSTAN CUMHURİYETİ DEVLETİ'NİN EĞİTİM SİSTEMİ
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AYTƏN HEYBƏTOVA	VƏTƏN SEVGİSİNİN POEZİYASI
Öğretim Görevlisi Dr. ABDULLAH DOĞTEKİN	BİRİNCİ DÜNYA SAVAŞI SIRASINDA İTİLAF DEVLETLERİ VE TÜRK OLMAYAN UNSURLAR TARAFINDAN GERÇEKLEŞTİRİLEN CASUSLUK FAALİYETLERİ: BATI ANADOLU ÖRNEĞİ
Dr. Arş. Gör., ÜMRAN KARADENİZ	BOOKS READ AND BOOK OWNERSHIP IN BITOLA IN THE FIRST HALF OF THE 18TH CENTURY ACCORDING TO THE INHERITANCE RECORDS
Doç. Dr. Handan AYDIN KASIMOĞLU	OĞUZ TANSEL'İN CEVAHİR YUMURTASI ADLI MASALININ KARNAVALEKS KURAMI ÇERÇEVESİNDE YORUMLANMASI
Doç.Dr. CANAN OLPAK KOÇ	SOKAKTAKİ ADAM ROMANININ YAPISALCI ÇÖZÜMLEMESİ
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MERVE KOLDAMCA YILMAZ	A VOCABULARY-BASED ANALYSIS OF ANDONIS SAMARAKIS' LITERATURE
Doktor Öğretim Üyesi, Gamze Gizem AVCIOĞLU	PERVÎN-İ İ'TİSÂMÎ'NİN "YETİM ÇOCUK" ADLI ANLATI ŞİİRİNDEKİ ÇOCUK KARAKTERİ VE DUYGUSUNUN TAHLİLİ

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Arş. Gör. Dr. Yelda BEKTAŞ	HIGH-SKILLED MIGRATION FROM TURKIYE TO GERMANY: A DIGITAL ETHNOGRAPHIC STUDY IN THE CONTEXT OF THE NETWORK THEORY
Lavryk RUSLAN Volodimirovich Galimova VALENTINA Mihalovna	MODERN APPROACHES TO THE STUDY OF CHEMICAL DISCIPLINES USING TECHNOLOGIES
Öğr. Gör. Dr. Hasan Tahsin YÖYEN	SOSYAL HİZMET VE HAKKANİYET OLARAK ADALET
Tuğba YURT ASLAN Meltem KÖKSAL Ebru SATICI Ramazan AYDIN Aras GÜNDÜZ Damla GÜNDOĞDU Yağmur GÜNAL	SAĞLIKTA ŞİDDETİN DOKTORLARIN ÇALIŞMA PERFORMANSI ÜZERİNDEKİ ETKİLERİ VE BU KONUDA ALINABİLECEK EK ÖNLEMLER
Dr. Najm Al-Deen M. Yaseen Reakany	POLITICAL CULTURE AND ITS IMPACT ON TRANSITIONAL JUSTICE PATHS IN IRAQ AFTER 2005
Dr. Öğ. Üyesi TOLGA SEKİ	PSİKOLOJİK DAYANIKLILIK İLE KİŞİLİK ÖZELLİKLERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ: BİR META ANALİZ ÇALIŞMASI
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Arş. Gör. FATMA ÖZTAT	KADINA YÖNELİK ŞİDDETİN GAZETE HABERLERİNDE YENİDEN ÜRETİMİ: PINAR GÜLTEKİN CİNAYETİ ÖRNEĞİ

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DR. ABDÜLKADİR ERKUT	MEAL OKUMANIN DİNDEKİ YERİNE DAİR TOPLUMUMUZDA YER ALAN İKİ YAKLAŞIMIN TAHLİLİ -DİN İŞLERİ YÜKSEK KURULUNA SORULAN SORULARDAN HAREKETLE-
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Prof. Dr. Ramazan BİÇER	RELIGIOUS-SCIENCE CONFLICT CLAIM: THE CASE OF OTTOMAN SCIENCES
Doç. Dr., RECEP ÖNAL	İTİKADÎ MEZHEPLER ARASINDA TEOLOJİK ETKİLEŞİM BAĞLAMINDA MÂTÜRÎDÎ VE MU'TEZİLE'NİN ORTAK VE BENZER GÖRÜŞLERİ
Doç. Dr., RECEP ÖNAL	İTİKADÎ MEZHEPLER ARASINDA TEOLOJİK ETKİLEŞİM BAĞLAMINDA MÂTÜRÎDÎ VE MU'TEZİLE'NİN GÖRÜŞ FARKLILIKLARI
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TUĞBA FİRDEVS METİN SERHAT KAVUK Prof. Dr. ASIM ÇOBAN	TÜRKİYE CUMHURİYETİ'NİN 100. YILINDA GEÇMİŞTEN GÜNÜMÜZE TÜRK-BALKAN İLİŞKİLERİNE YÖNELİK ÖĞRETMEN GÖRÜŞLERİ
Assist. Prof. Dr. İBRAHİM FEVZİ GÜVEN	FUZZY LOGIC AND INTERNATIONAL RELATIONS
Assist. Prof. Dr. İBRAHİM FEVZİ GÜVEN	THE RELATIONSHIP BETWEEN THE DIVERSIONARY THEORY OF CONFLICT AND POLITICAL REGIME TYPE: IN WHICH REGIME DIVERSIONARY POLICIES ARE MORE POSSIBLE TO APPEAR?
Res. Assist. Dr., ÖNDER CANVEREN	THE PERSISTENCE OF ILLEBERAL TREND IN THE WESTERN BALKANS DESPITE THE EURPEANIZATION AGENDA: INTERNAL AND EXTERNAL FACTORS
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Bhaskar Basu	ANALYZING THE PERCEPTION OF SOCIAL NETWORKING SITES AS A LEARNING TOOL AMONG UNIVERSITY STUDENTS: CASE STUDY OF A BUSINESS SCHOOL IN INDIA
Vriddhi Prasad	INVESTIGATING THE CONTEMPORARY ARCHITECTURE EDUCATION CHALLENGES IN INDIA
Ebtehag Tolba	PROPOSED PROGRAM FOR DEVELOPING SOME CONCEPTS FOR NURSERY SCHOOL CHILDREN IN EGYPT USING ARTISTIC ACTIVITIES
Elham Shirvani–Ghadikolaei, Seyed Mahdi Sajjadi	THE CHALLENGES OF HYPER-TEXTUAL LEARNING APPROACH FOR RELIGIOUS EDUCATION
Rajesh Kumar, Roopali Dogra, Puneet Aggarwal	COMPUTER-AIDED TEACHING OF TRANSFORMERS FOR UNDERGRADUATES
Denise Levy, Helen J. Khoury	THE NUCLEAR ENERGY MUSEUM IN BRAZIL: CREATIVE SOLUTIONS TO TRANSFORM SCIENCE EDUCATION INTO MEANINGFUL LEARNING
Denise Levy	A CORPORATE SOCIAL RESPONSIBILITY PROJECT TO IMPROVE THE DEMOCRATIZATION OF SCIENTIFIC EDUCATION IN BRAZIL
Elle Hilke Dominski	INTERSECTIONAL BULLYING, LGBT YOUTH AND THE CONSTRUCTION OF POWER
Hassan Attahiru Gwandu	WEST AFRICAN ISLAMIC CIVILIZATION: SOKOTO CALIPHATE AND SCIENCE EDUCATION

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Melani Arnaldi, Suzy Yusna Dewi	EFFECT OF DEPRESSION, SELF-REGULATION CONTROL AND CHARACTERISTICS OF ADHD AS THE CAUSE OF SCHOOL BRAWL IN JAKARTA, INDONESIA
Ruth Lijtmaer, Roy Moodley, Shafik Sunderani	THE THERAPIST'S SELF DISCLOSURE IN CROSS- CULTURAL TREATMENT
Midori Ban, Ichiro Uchiyama	THE RELATIONSHIP BETWEEN PRETEND PLAY AND FALSE-BELIEF IN 18-MONTH-OLD CHILDREN
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Barbara Gawda, Ewa Szepietowska, Agnieszka Gawda	THE EMOTIONAL LANGUAGE AND TEMPERAMENTAL TRAITS
Amudha Kadirvelu, Sivalal Sadasivan	USE OF A LEARNER'S LOG FOR EFFECTIVE SELF-DIRECTED LEARNING IN PBL
Katarzyna Czubak	NEGATIVE EMOTIONS AND WAYS OF OVERCOMING THEM IN PRISON
Asmita Shukla Soma Parija	IMPACT OF PERSONALITY AND LONELINESS ON LIFE: ROLE OF ONLINE FLOW EXPERIENCES
Sheila Marie G. Hocson	CAREER COUNSELING PROGRAM FOR THE PSYCHOLOGICAL WELL-BEING OF FRESHMEN UNIVERSITY STUDENTS

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Sujit K. Basak	A COMPARATIVE ANALYSIS OF ZOTERO AND MENDELEY REFERENCE MANAGEMENT SOFTWARE
Chinchira Bunchutrakun	THE STUDY OF IDIOM TRANSLATION IN FICTION FROM ENGLISH INTO THAI
Muntanavadee Maytapattana	THE EFFECTS OF THE PARENT TRAINING PROGRAM FOR OBESITY REDUCTION ON HEALTH BEHAVIORS OF SCHOOL-AGE CHILDREN
Rana M. Zeina, Laila AL-Ayadhi, Shahid Bashir	ASSOCIATION OF SENSORY PROCESSING AND COGNITIVE DEFICITS IN CHILDREN WITH AUTISM SPECTRUM DISORDERS – PIONEER STUDY IN SAUDI ARABIA
Mai Al-Subaie	WHAT ARE THE FACTORS UNDERLYING THE DIFFERENCES BETWEEN YOUNG SAUDI WOMEN IN TRADITIONAL FAMILIES THAT CHOOSE TO CONFORM TO THE SOCIETY NORMS, AND YOUNG SAUDI WOMEN WHO DO NOT CONFORM?
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Mutshinye Manguvhewa, Maria Florence, Mansoo Yu	A BIO-ECOLOGICAL PERSPECTIVE ON RISK AWARENESS AND FACTORS ASSOCIATED WITH SUBSTANCE USE DURING PREGNANCY IN COMMUNITIES OF THE WESTERN CAPE PROVINCE, SOUTH AFRICA
Adriana Ávila Zúñiga Nordfjeld	THE ASPECT OF THE HUMAN BIAS IN DECISION MAKING WITHIN QUALITY MANAGEMENT SYSTEMS & LEAN THEORY
Sarit Rashkovits Yael Livne	THE EFFECT OF EDUCATION LEVEL ON PSYCHOLOGICAL EMPOWERMENT AND BURNOUT-THE MEDIATING ROLE OF WORKPLACE LEARNING BEHAVIORS

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Merab Khokhobaia	TOURISM POLICY CHALLENGES IN POST-SOVIET GEORGIA
Pisit Potjanajaruwit	MARKETING MIX FOR TOURISM IN THE CHONBURI PROVINCE
Nugzar Todua, Charita Jashi	SOME ASPECTS OF SOCIAL MEDIA MARKETING (GEORGIAN CASE)
Anmari H. Viljamaa, Elina M. Varamäki	DO PERSISTENT AND TRANSITORY HYBRID ENTREPRENEURS DIFFER?
Giorgi Gaprindashvili	PUBLIC PROCUREMENT DEVELOPMENT STAGES IN GEORGIA
Sushovan Sarkar, Debabrata Mazumder	SOLID WASTE MANAGEMENT IN STEEL INDUSTRY - CHALLENGES AND OPPORTUNITIES
Eva Štěpánková	CARRYING OUT THE STEPS OF DECISION MAKING PROCESS IN CONCRETE ORGANIZATION
Vilma Deltuvaitė	IMPACT OF FINANCIAL SYSTEM'S DEVELOPMENT ON ECONOMIC DEVELOPMENT: AN EMPIRICAL INVESTIGATION
Eva Štěpánková	DECISION MAKING ABOUT THE ENVIRONMENTAL MANAGEMENT IMPLEMENTATION – INCENTIVES AND EXPECTATIONS

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HALL: 12 SESSION: 1	MODERATOR: **Okolo Chimaobi Valentine**
Okolo Chimaobi Valentine	INTEREST RATE FLUCTUATION EFFECT ON COMMERCIAL BANK'S FIXED FUND DEPOSIT IN NIGERIA
Taghreed Abu-Salim	A FRAMEWORK TO ASSESS THE MATURITY OF CUSTOMER INVOLVEMENT IN THE SERVICE DESIGN OF PRODUCT-SERVICE SYSTEMS
Subarna Ferdous, Mitsuru Ikeda	CONCEPTUALIZATION OF VALUE CO-CREATION FOR SHRIMP PRODUCTS IN BANGLADESH
Susmita Ghosh, Bhaskar Bhowmick	MIND YOUR PRODUCT-MARKET STRATEGY ON SELECTING MARKETING INPUTS: AN UNCERTAINTY APPROACH IN INDIAN CONTEXT
Alaa Tag Eldin Mohamed	A FRAMEWORK FOR UNIVERSITY SOCIAL RESPONSIBILITY AND SUSTAINABILITY: THE CASE OF SOUTH VALLEY UNIVERSITY, EGYPT
Abeer Amayri, Akif A. Bulgak	SUPPLIER SELECTION IN A SCENARIO BASED STOCHASTIC MODEL WITH UNCERTAIN DEFECTIVENESS AND DELIVERY LATENESS RATES
Komlan Sedzro	NON-PARAMETRIC, UNCONDITIONAL QUANTILE ESTIMATION OF EFFICIENCY IN MICROFINANCE INSTITUTIONS
Talal Alsulaiman, Khaldoun Khashanah	BOUNDED RATIONAL HETEROGENEOUS AGENTS IN ARTIFICIAL STOCK MARKETS: LITERATURE REVIEW AND RESEARCH DIRECTION
Khalid M. Albarkoly, Kenneth S. Park	IMPLEMENTING A STRATEGY OF RELIABILITY CENTERED MAINTENANCE (RCM) IN THE LIBYAN CEMENT INDUSTRY

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HALL: 13 SESSION: 1	MODERATOR: **Analiza Acuña-Villacorte**
Ali Hajiesmaeili, Mehdi Rahimi, Ehsan Jaberi, Amir Abbas Hosseini	STUDYING THE INFLUENCE OF LOGISTICS ON ORGANIZATIONAL PERFORMANCE THROUGH A SUPPLY CHAIN STRATEGY: CASE STUDY IN GOLDIRAN ELECTRONICS CO
Anita D. Adamu, Winston M. W. Shakantu	STRATEGIC MAINTENANCE MANAGEMENT OF BUILT FACILITIES IN AN ORGANISATION
Alhamdi Alfi Fajri	FAIR VALUE IMPLEMENTATION OF FINANCIAL ASSET: EVIDENCE IN INDONESIA'S BANKING SECTOR
Jan Cernohorsky	CORRELATION OF THE RATE OF IMPERFECT COMPETITION AND PROFIT IN BANKING MARKETS
Analiza Acuña-Villacorte	MANAGERS' CAPACITY BUILDING FOR INSTITUTIONAL SUSTAINABILITY PERFORMANCE
Maja Sajdak	ADAPTATION ACTIONS IN COMPANIES AS THEORETICAL AND PRACTICAL ASPECTS: A CASE STUDY OF A FOOD INGREDIENTS AND ADDITIVES PRODUCER
Rajeshkumar U. Sambhe	OPERATIONAL GUIDELINES FOR SIX-SIGMA IMPLEMENTATION: SURVEY OF INDIAN MEDIUM SCALE AUTOMOTIVE INDUSTRIES
Mouataz Zreika, Maria Estela Varua	APPLYING HYBRID GRAPH DRAWING AND CLUSTERING METHODS ON STOCK INVESTMENT ANALYSIS
Siti Raihana Hamzah	DEBTS AND DEBT-BASED SUKUK RELATED TO RISK SHIFTING BEHAVIOR

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HALL: 14 SESSION: 1	MODERATOR: **Venugopal Kummamuru**
Khondokar Farid Ahmmed, Robin Bown	EXPLORING THE ROLE OF PRIVATE COMMERCIAL BANKS İN INCREASING SMALL AND MEDIUM SIZE ENTERPRISES' FINANCIAL ACCESSIBILITY İN DEVELOPING COUNTRIES: A STUDY İN BANGLADESH
Venugopal Kummamuru	CORPORATE GOVERNANCE IN NETWORK MARKETING ORGANIZATIONS: THE ROLE OF ETHICS AND CSR
Ketevan Kokrashvili, Rusudan Kutateladze, Nino Pailodze	PROBLEMS OF THE MANAGEMENT OF LEGAL ENTITIES OF PRIVATE LAW IN GEORGIA
Mohammed Gamil Montasser, Angelo Battaglia	OMAN'S POSITION IN U.S. TOURISTS' MIND: THE USE OF IMPORTANCE-PERFORMANCE ANALYSIS ON DESTINATION ATTRIBUTES
Adithya Nadig	NEED FOR STANDARDIZATION OF MANUAL INSPECTION IN SMALL AND MEDIUM-SCALE MANUFACTURING INDUSTRIES
Mateusz Rak	CORPORATE PHILANTHROPY AS A SOURCE OF COMPETITIVE ADVANTAGE
Sofia Ayouche, Rachid Ellaia, Rajae Aboulaich	A HYBRID PARTICLE SWARM OPTIMIZATION-NELDER- MEAD ALGORITHM (PSO-NM) FOR NELSON-SIEGEL- SVENSSON CALIBRATION
Osamah A. Alsayegh	RAMIFICATION OF OIL PRICES ON RENEWABLE ENERGY DEPLOYMENT
Bhim Singh	IDENTIFICATION OF LEAN IMPLEMENTATION HURDLES IN INDIAN INDUSTRIES

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HALL: 1 SESSION: 2	MODERATOR: **Dr. Öğretim Üyesi Banu DAVUN**
Dr. Öğretim Üyesi Banu DAVUN Doç. Dr., FAHRETTİN GEÇEN	A CRITICAL EXAMINATION OF THE ANATOMY AND FACIAL EXPRESSIONS OF THE FIGURES IN THE WORKS OF THE SOCIAL REALIST PAINTER NEŞET GÜNAL
Doç. Dr., FAHRETTİN GEÇEN Dr. Öğretim Üyesi Banu DAVUN	MINIATURE EFFECTS AND THE PROBLEM OF FORMAL DEFORMATION IN THE WAY TURGUT ZAIM DEALS WITH THE FIGURES IN HIS WORKS
Res. Assist. N. Fulya Asyalı Büyükerman,	SAVAŞ SONRASI SANATTA ATEŞ KULLANIMIN BİÇİME ETKİSİ ALBERTO BURRI, YVES KLEIN, ARMAN, CLAUDIO PARMIGGIANI
Dr. Öğr. Üyesi Savaş KESKİN	KİMLİĞİN TRANS-MEDYA ANLATIMI: BENLER-ARASI BİR HİKÂYE ANLATISI OLARAK DİJİTAL BEN
Dr. Öğr. Üyesi Haydar TAŞÇILAR	RESMİN ÖLÜMÜNDEN SONRA MODERN RESİM PROJESİNE İTİRAZ OLARAK RESİM ve MARK TANSEY ÖRNEĞİ
Doç. Hatice Kübra KUZUCANLI Dr. Öğr. Üyesi Haydar TAŞÇILAR	SUBJECT OF REPRESENTATION IN ART AND OBJECTIONS
Mehmet Alpdoğan Erciş	TO UNDERSTAND THE WORKS OF THE CONTEMPORARY TURKISH PAINTER ONAY AKBAŞ
Mehmet Alpdoğan Erciş	ESPASIN ETKİSİ

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HALL: 2 SESSION: 2	MODERATOR: **Assoc. Prof. Dr. Faik GÖKALP**
Res. Asst. Dr., AYLİN BAYINDIR GÜMÜŞ Prof. Dr., ALEV KESER	SENSORY ANALYSIS RESULTS OF OMNIVORES CONSUMING PACKED VEGAN FOODS
K.R.Padma K.R.Don	A HOPE FOR NEW MEDICINE FROM AVAILABLE PRODUCTS USING REPURPOSED DRUGS IN A NANO-BASED APPROACH FOR COMBATING COVID-19
Assoc. Prof. Dr. Faik GÖKALP	A STUDY ON THE SEARCH FOR NATURAL COMPOUNDS EFFECTIVE AGAINST THE SARS-COV-2 OMICRON VARIANT
Assoc. Prof. Dr. Faik GÖKALP	A STUDY ON THE EFFECT OF SCORPION VENOM ON CANCER CELLS
YL. Öğr. Kerem DİNÇER Dr. Ögr. Üyesi, Serap MUNGAN AY	MUAYTHAİ MİLLİ SPORCULARININ UMUTSUZLUKLARININ KARİYER GELECEĞİNE ETKİSİ
Uzm. Dr. GÖNENÇ ÇALIŞKANTÜRK Yük. Bio. MUSTAFA SAĞLAM Prof. Dr. TEKİN KARSLIGİL	GAZİANTEP ÜNİVERSİTESİ TIP FAKÜLTESİ MOLEKÜLER MİKROBİYOLOJİ LABORATUVARI 2018-2022 YILLARINDA ÇALIŞILAN HDV RNA SONUÇLARI
Uzm. Dr. GÖNENÇ ÇALIŞKANTÜRK Yüksek Bio. MURAT ALAY	PATNOS DEVLET HASTANESİNDE YAPILAN ROSE BENGAL TESTLERİNİN BİR YILLIK RETROSPEKTİF DEĞERLENDİRMESİ
Uzm. Dr. GÖNENÇ ÇALIŞKANTÜRK Doç. Dr. DENİZ GAZEL Prof. Dr. TEKİN KARSLIGİL	TÜBERKÜLOZ TANISINDA PCR VE ARB YÖNTEMLERİNİN KARŞILAŞTIRILMASI

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HALL: 3 SESSION: 2	MODERATOR: **Doç. Dr. Latife Ceyda İRKİN**
Doç. Dr. Latife Ceyda İRKİN	CHLORELLA AS A SUPPLEMENT TO PROMOTE HUMAN HEALTH
Doç. Dr. Latife Ceyda İRKİN, Öğr. Gör. Dr. Şamil ÖZTÜRK	THE PREVENTIVE ROLE OF SPIRULINA SP. IN FEMALE INFERTILITY
M.Sc. Bio. SEVDE HASANOĞLU SAYIN Prof. Dr. SACİDE PEHLİVAN	THE PROGNOSTIC SIGNIFICANCE OF NON-CODING RNAs
M.Sc. Bio. YASEMİN OYACI Prof.Dr. SACİDE PEHLİVAN	THE IMPORTANCE OF INTRONS IN THE STRUCTURE OF EUKARYOTIC GENES and THEIR RELATIONSHIP WITH DISEASES
Ummugulsum Guzelsoy Melike Ersoz Banu Mansuroglu	INVESTIGATION OF THE BIOLOGICAL EFFECTS OF GINKGOLIDE A LOADED NANOPARTICLES IN C6 GLIOMA CELLS
Lecturer AYŞENUR ÇAĞ Prof. Dr., GÜLBİN ÖZÇELİKAY	THE EFFECTS OF COMMUNITY PHARMACIES WORK ENVIRONMENT ON PATIENT SAFETY IN TURKEY
Balakhanova Kumru Vasif kızı	GENERAL CHARACTERISTICS OF AEROMYCOBIOTA IN DIFFERENT STATIONS OF BAKU METROPOLITAN
Assist. Prof. Dr., Ozan Emre EYUPOĞLU Prof. Dr., Murat KÜÇÜK	RESOLUTION OF OVERLAPPING PHENOLIC ACID PEAK CONFUSION IN HPLC-DAD ANALYSIS BY PEROXYNITRITE REACTION
АБДУЛЛАЕВА ШАХЛА	DISEASES AND PESTS OF GRAPES IN THE CONDITIONS OF AZERBAIJAN

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HALL: 4 SESSION: 2	MODERATOR: **Doç. Dr. Ümit AYATA**
Doç. Dr. Osman ÇAMLIBEL Doç. Dr. Ümit AYATA	EKABA (TETRABERLİNİA BİFOLİOLATA HAUM.) AHŞABINDA BAZI YÜZEY ÖZELLİKLERİ ÜZERİNE DOĞAL YAŞLANDIRMANIN ETKİLERİ
Doç. Dr. Osman ÇAMLIBEL Doç. Dr. Ümit AYATA	BAZI ODUN TÜRLERI KARIŞIMINDAN OLUŞAN YONGALAR VE FARKLI MOL ORANLARINA SAHIP ÜRE FORMALDEHIT TUTKALLAR KULLANILARAK ÜRETILMIŞ OLAN YONGA LEVHALARDA BAZI MEKANIK, FIZIKSEL VE EMISYON ÖZELLIKLERININ KARŞILAŞTIRILMASI
Professor, MEHMET ŞÜKRÜ GÜNEY Ph. D. Student, EMRE DUMLU Research Assistant, MERVE OKAN YİĞİT KALYONCU	EXPERIMENTAL STUDY OF THE EVOLUTION OF THE BREACH AND THE DİSCHARGE THROUGH THE BREACH RESULTING FROM PIPING DUE TO THE SEEPAGE AT THE UPPER PART OF EARTH-FILL DAM WITH CLAY CORE
Arş. Gör. Kazım Ercan Dr. Öğr. Üyesi Mehmet Akif Dündar Prof. Dr. Hamza Kemal Akyıldız	ULTRA YÜKSEK MOLEKÜL AĞIRLIKLI POLİETİLEN MALZEMENİN EĞİLME DAVRANIŞININ BELİRLENMESİ: DENEYSEL VE NÜMERİK ÇALIŞMA
Asistant Prof. Dr. Mustafa Eken	UÇUCU KÜL VE KABAK LİFİ KATKILI BRİKET ÜRETİMİNİN ARAŞTIRILMASI
ALİ ALHRAİSHAWİ Dr. ŞÜKRÜ ASLAN Dr. MUSTAFA ÖZTÜRK	ATIK BİYOLOJİK ÇAMURLARIN MİKRODALGA İLE DEZENTEGRASYONU
ŞÜKRÜ ASLAN SENA KUŞTARCI HABİBE KUTLU	BIYOLOJIK DENITRIFIKASYONA ARSENIK ETKISI

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HALL: 5 SESSION: 2	MODERATOR: **DR. SAMET KILIÇ**
Dr. GÖZDE TEKTAŞ Dr. CÜNEYT ÇELİKTAŞ	NÖTRON DEDEKSİYONU İÇİN KULLANILAN BİR PARILDAYICIDAN ALFA PARÇACIK TESPİTİNDE YARARLANILMASI
Dr. MUSTAFA BAL Dr. AYŞEGÜL KÖSE	SYNTHESIS, CHARACTERIZATION, SPECTROSCOPIC AND COLORIMETRIC SENSOR PROPERTIES OF SCHIFF BASE COMPOUND CONTAINING NAPHTHALENE AND CARBOXYL GROUPS
Emin Burak Gezer Doç. Dr. Erkin Gezgin Doç. Dr. Utku Kürşat Ercan	DESIGN AND DEVELOPMENT OF A ROBOTIC CHEST COMPRESSION SYSTEM
DR.SAMET KILIÇ	SEISMIC EVALUATION OF EXISTING STEEL ELEVATED SILOS ACCORDING TO EUROCODE
DR.SAMET KILIÇ	SEISMIC DESIGN PRINCIPLES COMPARISON OF EUROCODE 8 AND TBDY-18
UĞUR HASIRCI ÇAĞDAŞ TUNCEROĞLU	A NOVEL NONLINEAR CONTROL DESIGN FOR SHOOT-THE-MOON GAME TABLE
UĞUR HASIRCI ÇAĞDAŞ TUNCEROĞLU	NONLINEAR BACKSTEPPING CONTROLLER DESIGN FOR A MEMRISTOR- BASED OSCILLATOR
UĞUR HASIRCI ÇAĞDAŞ TUNCEROĞLU	A SIMPLE HARDWARE AND SOFTWARE COMBINATION FOR PRODUCING SWITCHING SIGNALS OF A THREE-PHASE INVERTER

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HALL: 6 SESSION: 2	MODERATOR: **Dr. Öğr. Üyesi Sema KAPTANOĞLU**
Anıl TANIŞ Arş. Gör. Ayberk AYDOĞMUŞ Dr. Öğr. Üyesi Arif Çağlar KONUKÇU	KAYNATMA VE PRESLEME SÜRESİNİN YOĞUNLAŞTIRILMIŞ KAVAK (I-214 Populus ×euramericana) ODUNUNUN FİZİKSEL ÖZELLİKLERİ ÜZERİNE ETKİSİ
Demet Darcan Şafak METİN Ali Rıza DİNÇER	METİLEN KLORÜR İLE EKSTRAKTE EDİLEN BİR ATIKSUYUN OZON İLE ARITIMI
Arş. Gör. Dr. HÜLYA AVCI ÖZBEK Doç. Dr. DENİZ DEMİR ATLI	SCHIFF BAZ İÇEREN MOLİBDEN(IV) KOMPLEKSLERİNİN SENTEZİ, KARAKTERİZASYONU VE ANTİBAKTERİYAL ÖZELLİKLERİNİN BELİRLENMESİ
Lavryk RUSLAN Volodimirovich Galimova VALENTINA Mihalovna	STRUCTURE OF CRYSTAL OF DOUBLE SODIUM - MANGANESE (II) PYROPHOSPHATE
Lavryk RUSLAN Volodimirovich Galimova VALENTINA Mihalovna	THE MODERN PSYCHO-PEDAGOGICAL METHODS OF TRAINING IN HIGH SCHOOL
Dr. Öğr. Üyesi Ali Rıza KUL Fatma CALAYIR Veysel BENEK Dr. Öğr. Üyesi Sema KAPTANOĞLU	ISOTHERM AND THERMODYNAMIC STUDY OF THE ADSORPTION OF SAFRANIN DYESTUFF ON VAN PUMICE

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HALL: 7 SESSION: 2	MODERATOR: **Doç. Dr. GÜLLÜ KIRAT**
Doç. Dr., ÖMER SÖZEN Prof. Dr., TOLGA KARAKÖY	SİVAS EKOLOJİK KOŞULLARINDA BAZI NOHUT ÇEŞİTLERİNİN TARIMSAL ÖZELLİKLERİNİN ORTAYA KONULMASI
Prof. Dr., TOLGA KARAKÖY Doç. Dr., ÖMER SÖZEN	SİVAS EKOLOJİK KOŞULLARINDA BAZI MERCİMEK ÇEŞİTLERİNİN TARIMSAL ÖZELLİKLERİNİN BELİRLENMESİ
Dr. Öğr. Üyesi Mine KÖKTÜRK Dr. Ekrem SULUKAN Gökhan KOÇAK	SULFAMETHAZİNE AFFECT BEHAVİORAL ACTİVİTY (LOCOMOTOR ACTİVİTY): ZEBRAFİSH LARVAL MODEL
Doç. Dr. SERPİL SAVCI Doç. Dr. GÜLLÜ KIRAT	THE RELATIONSHIP OF ENVIRONMENTAL POLLUTION AND GEOLOGY
Doç. Dr. GÜLLÜ KIRAT Doç. Dr. SERPİL SAVCI	THERMAL WATER AND BALANEOLOGY
Öğr. Gör. ÖMER ERTEN Prof. Dr. FİKRET ESEN	ERZİNCAN İLİNDEKİ KAFKAS (Apis mellifera caucasia) ve ANADOLU (Apis mellifera anatoliaca) IRKI ANA ARILARININ KALİTELERİ ÜZERİNE FARKLI YETİŞTİRME YÖNTEMLERİ (Larva Transferi, Anasız Bırakma) ve MEVSİMİN ETKİLERİ
Fazilet Mısra ÖZDEMİR Dr. Öğr. Üyesi, Aydan GÜLSU	CARİCA PAPAYA L. MEYVESİ TOPLAM FENOLİK İÇERİĞİ VE ANTİOKSİDAN AKTİVİTESİNE EKZOKARP TABAKANIN ETKİSİNİN BELİRLENMESİ

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HALL: 8 SESSION: 2	MODERATOR: **Naruemon Prapasuwannakul**
Sandija Zeverte-Rivza, Irina Pilvere, Baiba Rivza	RISK ASSESSMENT RESULTS IN BIOGAS PRODUCTION FROM AGRICULTURE BIOMASS
Jiraporn Rojtinnakorn	ICAM-2, A PROTEIN OF ANTITUMOR IMMUNE RESPONSE IN MEKONG GIANT CATFISH (PANGASIANODON GIGAS)
Navneet Singh Deora, Aastha Deswal, H. N. Mishra	FT-NIR METHOD TO DETERMINE MOISTURE IN GLUTEN FREE RICE BASED PASTA DURING DRYING
Naruemon Prapasuwannakul	UTILIZATION OF SOYMILK RESIDUE FOR WHEAT FLOUR SUBSTITUTION IN GYOZA SKIN
Saad M. Howladar, Mike Dennett	IMPROVEMENT OF SALT TOLERANCE IN SAUDI ARABIAN WHEAT BY SEED PRIMING OR FOLIAR SPRAY WITH SALICYLIC ACID
Abdulfatah Faraj Aboufayed	MEASURING THE AMOUNT OF ERODED SOIL AND SURFACE RUNOFF WATER IN THE FIELD
Rizkita R. Esyanti, Iriawati, Olga Mardisadora	VETİVER OİL PRODUCTİON FROM ROOT CULTURE OF VETİVERİA ZİZANİOİDES
Atitaya Singchai, Nooduan Muangsan, Thitiporn Machikowa	EVALUATİON OF SSR MARKERS ASSOCİATED WİTH HİGH OLEİC ACİD İN SUNFLOWER
Guru Prasad Satsangi, Sanjay Yadav	RESPONSE OF BGA-UREA FERTİGATİON AS N2 SOURCE ON GROWTH PARAMETERS AND YİELD OF PADDY (ORYZA SATİVA L.) İN AGRA (INDİA)

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HALL: 9 SESSION: 2	MODERATOR: **Sunmyeng Kim**
Hassan Jassim Motlak	DESIGN OF CMOS CFOA BASED ON PSEUDO OPERATIONAL TRANSCONDUCTANCE AMPLIFIER
Zongyan Li, Matt Best	OPTIMIZATION OF THE INPUT LAYER STRUCTURE FOR FEED-FORWARD NARX NEURAL NETWORKS
Vijay Kumar, Jagdev Singh, Yaduvir Singh, Sanjay Sood	OPTIMAL ECONOMIC LOAD DISPATCH USING GENETIC ALGORITHMS
Abdelsalam A. Ahmed	EXPERIMENTAL IMPLEMENTATION OF MODEL PREDICTIVE CONTROL FOR PERMANENT MAGNET SYNCHRONOUS MOTOR
Thomas Bryan, Veton Kepuska, Ivica Kostanic	A SIMPLE ADAPTIVE ATOMIC DECOMPOSITION VOICE ACTIVITY DETECTOR IMPLEMENTED BY MATCHING PURSUIT
Abdolreza Roozbeh, Reza Sedaghati, Ali Asghar Baziar, Mohammad Reza Tabatabaei	DYNAMIC PERFORMANCE EVALUATION OF DISTRIBUTED GENERATION UNITS IN THE MICRO GRID
Ali Ameur Haj Salah, Tarek Garna, Hassani Messaoud	THE VALIDITY RANGE OF LSDP ROBUST CONTROLLER BY EXPLOITING THE GAP METRIC THEORY
Sunmyeng Kim	DATA RATE BASED GROUPING SCHEME FOR COOPERATIVE COMMUNICATIONS IN WIRELESS LANS
Randeep Kaur, Jyoti Ohri	PSO BASED WEIGHT SELECTION AND FIXED STRUCTURE ROBUST LOOP SHAPING CONTROL FOR PNEUMATIC SERVO SYSTEM WITH 2DOF CONTROLLER

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HALL: 10 SESSION: 2	MODERATOR: **Prachi Singh**
Ririn Lestari Sri Rahayu, Mustofa Ahda	THE CORRELATION OF TOTAL PHENOL CONTENT WITH FREE RADICALS SCAVENGING ACTIVITY AND EFFECT OF ETHANOL CONCENTRATION IN EXTRACTION PROCESS OF MANGOSTEEN RIND (GARCINIA MANGOSTANA)
Vipan Kumar Sohpal, Rajesh K Sharma	NOX EMISSION AND COMPUTATIONAL ANALYSIS OF JATROPHA CURCUS FUEL AND CRUDE OIL
Motahar Reza, Rajni Chahal, Neha Sharma	RADIATION EFFECT ON MHD CASSON FLUID FLOW OVER A POWER-LAW STRETCHING SHEET WITH CHEMICAL REACTION
Boy Arief Fachri	USING PHASE EQUILIBRIUM THEORY TO CALCULATE SOLUBILITY OF Γ-ORYZANOL IN SUPERCRITICAL CO2
Prachi Singh	BIOSYNTHESIS OF TITANIUM DIOXIDE NANOPARTICLES AND THEIR ANTIBACTERIAL PROPERTY
Stoyan Nedeltchev, Markus Schubert	ENTROPY ANALYSIS IN A BUBBLE COLUMN BASED ON ULTRAFAST X-RAY TOMOGRAPHY DATA
Beena Sethi	RECYCLING OF POLYMERS IN THE PRESENCE OF NANOCATALYSTS: A GREEN APPROACH TOWARDS SUSTAINABLE ENVIRONMENT
Mohsen Farahat, Tsuyoshi Hirajima	SURFACE CHARACTERISTICS OF BACILLUS MEGATERIUM AND ITS ADSORPTION BEHAVIOR ONTO DOLOMITE
Zharama M. Llarena	SPECTROSCOPIC DETERMINATION OF FUNCTIONALIZED ACTIVE PRINCIPLES FROM COLEUS AROMATICUS BENTH LEAF EXTRACT USING IONIC LIQUIDS

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HALL: 11 SESSION: 2	MODERATOR: **Aïssa Manallah**
Nader H. Ghareeb, Mohamed S. Gaith, Sayed M. Soleimani	MODELING, ANALYSIS AND CONTROL OF A SMART COMPOSITE STRUCTURE
Bitan Kumar Sarkar, Akashdeep Agarwal, Rajib Dey, Gopes Chandra Das	PRODUCTION OF PIG IRON BY SMELTING OF BLENDED PRE-REDUCED TITANIFEROUS MAGNETITE ORE AND HEMATITE ORE USING LEAN GRADE COAL
Murtaza Adil, Sen Yang, Zhou Chao, Song Xiaoping	ENHANCED MAGNETOELASTIC RESPONSE NEAR MORPHOTROPIC PHASE BOUNDARY IN FERROMAGNETIC MATERIALS: EXPERIMENTAL AND THEORETICAL ANALYSIS
Alluru Gopala Krishna, Thella Babu Rao	PERFORMANCE ASSESSMENT OF CARBON NANO TUBE BASED CUTTING FLUID IN MACHINING PROCESS
Aïssa Manallah, Mohamed Bouafia	DETERMINATION OF OPTICAL CONSTANTS OF SEMICONDUCTOR THIN FILMS BY ELLIPSOMETRY
Supriya Gupta, Paresh Chokshi	POLYMER MEDIATED INTERACTION BETWEEN GRAFTED NANOSHEETS
Mahesh Chudasama, Harit Raval	A COMPARATIVE STUDY OF FORCE PREDICTION MODELS DURING STATIC BENDING STAGE FOR 3-ROLLER CONE FRUSTUM BENDING
M. Farnush	IMPROVEMENT OF WEAR RESISTANCE OF 356 ALUMINUM ALLOY BY HIGH ENERGY ELECTRON BEAM IRRADIATION
Arnab Majumdar, Sanjoy Sadhukhan	IMPROVEMENT IN PROPERTIES OF NI-CR-MO-V STEEL THROUGH PROCESS CONTROL

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HALL: 12 SESSION: 2	MODERATOR: **Manish Kumar Gautam**
Ahmed Abdi Hassan, Mustapha Muhammad Aliyu	EFFECT OF COMBINED CARBIMAZOLE AND CURCUMA LONGA POWDER IN HUMAN THYROID-STIMULATING HORMONE AND THYROPEROXIDASE ANTIBODY IN HYPERTHYROIDISM
Arpa Petchsomrit, Namfa Sermkaew, Ruedeekorn Wiwattanapatapee	EFFECT OF ALGINATE AND SURFACTANT ON PHYSICAL PROPERTIES OF OIL ENTRAPPED ALGINATE BEAD FORMULATION OF CURCUMIN
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PAKETLİ VEGAN BESİNLERİ TÜKETEN OMNİVORLARIN DUYUSAL ANALİZ SONUÇLARI

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ÖZET

Giriş: Günümüzde dünya genelinde vegan beslenme türünü benimseyen birey sayısı giderek artmaktadır. Bu bireylere yönelik, piyasada birçok paketli vegan besin yer almakta ve bunların büyük kısmını hayvansal besin analoğu olan köfte, pide, peynir gibi besinler oluşturmaktadır. Vegan beslenmenin giderek yaygınlaştığı günümüzde omnivor bireylerin vegan besinlerin duyusal özellikleri hakkındaki görüşleri merak konusudur. Bu araştırmada, piyasada yer alan bazı vegan paketli besinlerin organoleptik özelliklerinin omnivorlar tarafından değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Çalışmaya 20-27 yaş (22,1±1,79 yıl) aralığında, normal vücut ağırlığına sahip (beden kütle indeksi 21,4±1,90 kg/m^2, bel çevresi 70,9±4,47 cm ve bel-kalça oranı 0,75±0,04), sigara kullanmayan, konuya ilgi duyan, psikolojik olarak duyusal değerlendirmeye uygun, 14 gönüllü ve sağlıklı kadın birey dahil edilmiştir. Uygulamalar nötr renkte, gürültüden uzak, havalandırması iyi, homojen ışıklandırma ve sıcaklığa sahip bir odada yapılmıştır. Vegan şinitzel, nohut köfte, pide, çikolata, atıştırmalık bar ve peynir olmak üzere tüm besinlerin farklı günlerde ve aynı miktarda/porsiyonda tüketimleri sağlanmıştır. Besinler aynı sıcaklık, şekil, kıvam, renk ve görünümde rastgele olarak sunulmuştur. Duyusal analizler; renk, görünüş, tat (lezzet), koku, yapı ve doku ve genel yeme kalitesi olmak üzere altı kriter üzerinden 1-5 puan aralığında (1-kötü, 3-kabul edilebilir, 5-oldukça iyi) yapılmıştır.

Bulgular: Duyusal analiz sonuçlarına göre ortalama puanı en yüksek olan besin, tüm duyusal analiz parametreleri açısından vegan çikolata (genel yeme kalitesi 4,9±0,36 puan; diğer parametreler 5,0 puan) olarak tespit edilmiştir. Ortalama puanı en düşük olan besin, vegan peynir (renk 3,7±1,20 puan, görünüş 3,8±1,12 puan, tat/lezzet 1,8±1,25 puan, koku 2,4±1,34 puan, yapı ve doku 2,0±1,30 ve genel yeme kalitesi 1,79±1,12 puan) olarak belirlenmiştir.

Sonuç: Piyasada bulunan paketli besin çeşitliliği, hayvansal besin analogları başta olmak üzere son yıllarda artış göstermektedir. Çalışma sonuçlarına göre düşük puan alan besinlerin geliştirilmesinin gerekliliği ortaya çıkmıştır. Ancak bu besinlerin büyük kısmının işlenmiş olduğu ve duyusal yönden geliştirilirken bu yönden de irdelenmesi gerektiği unutulmamalıdır.

Anahtar kelimeler: vegan çikolata, vegan peynir, duyusal analiz, omnivor

SENSORY ANALYSIS RESULTS OF OMNIVORES CONSUMING PACKED VEGAN FOODS

ABSTRACT

Background: Nowadays, the number of individuals preferring vegan diets is increasing all over the world. There are many packaged vegan foods on the market, most of which are animal food analogs such as meatballs, minced pita, and cheese. These days, vegan nutrition is becoming more widespread, views of omnivores on the sensory properties of vegan foods are a matter of curiosity. This study aimed to evaluate the organoleptic properties of some vegan packaged foods on the market by omnivores.

Methods: The study was conducted with non-smokers, interested in the subject, psychologically suitable for sensory evaluation, 14 volunteers healthy females between 20-27 years of age (22.1±1.79 years), having normal body weight (body mass index 21.4±1.90 kg/m^2, waist circumference 70.9±4.47 cm and waist-hip ratio of 0.75±0.04). The trials were conducted in a neutral color, noise-free, well-ventilated room with homogeneous lighting and temperature. All foods, these were vegan schnitzel, chickpea meatballs, pita, chocolate, snack bars, and cheese, were consumed on different days and in the same amount/portion. The foods were randomly presented in the same temperature, shape, texture, color, and appearance. Sensory analyses were done in the range of 1-5 points (1-bad, 3 acceptable, 5-quite good) over six criteria: color, appearance, taste (flavor), odor, structure and texture, and general eating quality.

Results: According to the sensory analysis results, the food with the highest mean score was determined as vegan chocolate (general eating quality 4.9±0.36 points; other parameters 5.0 points) in terms of all sensory analysis parameters. The food with the lowest mean score was vegan cheese (color 3.7±1.20 points, appearance 3.8±1.12 points, taste 1.8±1.25 points, odor 2.4±1.34 score, structure and texture 2.0±1.30, and general eating quality 1.79±1.12 points).

Conclusion: In recent years, the variety of packaged foods, especially animal food analogs, on the market has increased. According to the results of the study, the necessity of developing low-scoring foods has emerged. However, it should not be forgotten that most of these foods are processed and should be examined in this aspect while developing them in terms of sensory.

Keywords: vegan chocolate, vegan cheese, sensory analysis, omnivor

A HOPE FOR NEW MEDICINE FROM AVAILABLE PRODUCTS USING REPURPOSED DRUGS IN A NANO-BASED APPROACH FOR COMBATING COVID-19

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Abstract

Today whole universe is fighting with deadly COVID-19 which has become the challenge as it is spreading at a faster rate. The existence of such deadly infectious diseases is day by day increasing the mortality rate globally. However, currently no drugs are available in treatment of this pandemic disease, conventional medicine might provide better results. Currently in beginning of 2019 drugs such as hydroxychloroquine which is an anti-parasitic drug was used to treat the severe acute respiratory distress syndrome. Since in many it resulted in adverse effects, repurposing of drugs with interactions of nanoparticles and later delivery might mitigate the virus load at maximum and diminish the adverse effects on organs/tissues. Therefore, our article primary focus is on nano-based DNA & mRNA vaccines applications in treatment which can act as potent antiviral agents. The nano-based approach might provide fruitfulness in combating COVID-19. However, tools of nanotechnology in inactivation of SARS-CoV-2 need to be explored. The nanomaterials based drugs directly delivered to the pulmonary region must not allow the binding of SARS-CoV-2 onto angiotensin-converting enzyme 2 (ACE2) receptors and inactivate the release of viral S protein. Distinct comprehension on nano-immunity could help us to construct materials for immune alteration, either instigating or suppressing the immune response. Therefore, nanoapplications not only utilized for prevention but possess therapeutic potential, and also have significant roles in diagnostics. In summation, application of nanotechnology is significant in battling against COVID-19 and will be given priority for future pandemics. Hence, our review provides new hope to readers, researchers on nanomedicine for fighting against corona virus.

Keywords: Nanoparticles, Conventional medicines, mRNA vaccines, Hydroxychloroquine Nano-based approach.

A Study On The Search For Natural Compounds Effective Against The SARS-Cov-2 Omicron Variant

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Omicron severe acute respiratory syndrome coronavirus 2 variant (SARS-CoV-2) was the first. A heavily mutated SARS-CoV-2 variant, this virus exhibits stronger binding to ACE2. In this study, the chemical calculation method of natural active substances that are effective against Omicron will be tried to be determined by docking. The interaction of natural compounds selected as natural active ingredient with Omicron variant receptor as ligand and their inhibition effect were clarified by determining their binding energy values and possible bonds and interaction points. This study is important in terms of giving direction to experimental and clinical studies.

Keywords: Omicron, SARS-CoV-2,docking

A Study On The Effect Of Scorpion Venom On Cancer Cells

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Cancer is a disease that attracts attention with the increase in mortality rates in cancer patients all over the world, especially in underdeveloped countries, and many studies have been made for its treatment. Many of the drug candidates proposed for treatment are in the trial phase and are waiting to be discovered. In this context, it is of great importance in the prevention of apoptosis, metastasis and spread of cancer cells, especially with biomolecules. In this study, the interaction of the scorpion venom as a biomolecule with the determined cancer receptors will be determined by chemical calculation method. The results obtained here will guide experimental and clinical studies.

Keywords: scorpion venom,cancer, docking

MUAYTHAİ MİLLİ SPORCULARININ UMUTSUZLUKLARININ KARİYER GELECEĞİNE ETKİSİ

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1. ÖZET

Muaythai milli sporcularının umutsuzluklarının kariyer gelecekleri üzerindeki etkisini ölçmek için yapılan bu çalışmada 2015-2022 yılları arasında Türkiye'nin çeşitli illerinden muaythai milli takımına girmiş 217 sporcu ile anket çalışması yapılmıştır. Katılımcıların demografik yapısını belirlemek için kişisel bilgi formu kullanılmıştır. Araştırmaya katılan sporculara, kariyer ile ilgili kaygı düzeylerini belirlemek için Kalafat' ın "Kariyer Geleceği Ölçeği" (2012) ve geleceğe yönelik umut düzeylerini ölçmek için de Seber' in geçerlilik güvenirlilik çalışmasını yaptığı "Beck Umutsuzluk Ölçeği" (1993) uygulanmıştır. Araştırma ile ilgili literatür taranarak kavramsal çerçeve oluşturulmuştur. Gönüllülere kariyer geleceği ölçeğindeki sorular sorularak kariyerleri ile ilgili kaygıları ölçümlenmiştir. Beck umutsuzluk ölçeği soruları ile de geleceğe yönelik umut düzeyleri ölçümlenmiştir. Testler katılımcılara Google online form vasıtasıyla uygulanmıştır. Veriler toplandıktan sonra değişkenlerin normal dağılıma uyup uymadığı çarpıklık ve basıklık katsayıları ile test edilmiş olup, normal dağılıma uyan değişkenler ortalama ve standart sapma; uymayan değişkenler medyan, minimum ve maksimum değerleri ile verilmiştir. Verilerin normal dağılıma sahip kitleden gelmesi durumunda bağımsız örneklem t-testi, tek yönlü varyans analizi, pearson korelasyon analizleri; gelmemesi durumunda ise mann whitney u, kruskal vallis ve spearman korelasyon analizleri kullanılmıştır. Ölçekler arasındaki etkilerin incelenmesinde ise regresyon analizlerinden yararlanılmıştır. İstatistiksel analizler IBM SPSS Statistics 22.0 programında yapılmıştır. Anlamlılık düzeyi 0,05 alınmıştır. Ölçümlemeler sonunda sporcuların umutsuzluklarının kariyer gelecekleri üzerindeki etkileri incelenmiştir. Sporcuların gelecekten umutsuz oldukları ve bunun kariyer gelecekleri üzerinde olumsuz bir etkisinin olduğu gözlemlenmiştir. Bu umutsuzlukların ortadan kaldırılması ve azaltılması için öneriler geliştirilmiştir.

Anahtar kelimeler : Spor, Muaythai, Gelecek Kaygısı, Kariyer

TÜBERKÜLOZ TANISINDA PCR VE ARB YÖNTEMLERİNİN KARŞILAŞTIRILMASI

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ÖZET

Tüberküloz, *Mycobacterium tuberculosis* kompleks (MTBC) suşları tarafından oluşturulan bir hastalıktır ve günümüzde halen ciddi mortalite ve morbiditeye yol açmaya devam etmektedir. Birçok ülkede direkt mikroskopi ile ARB (Asido-Rezistan Basil) aranması, tanıda ilk yöntem olarak kullanılmaya devam etmektedir. Ancak, direkt mikroskopiyi değerlendiren kişinin tecrübesine bağlı olması ve tüberküloz dışı mikobakteri ayırımı yapılamadığından, tanısal olarak tek başına yetersizdir ve kültür halen tüberküloz tanısında altın standarttır. Ancak kültürde etkenin tanımlanabilmesi için ortalama 2- 8 haftaya gereksinim duyulur, sonuçların alınması için geçen süre hastalığın kontrolünü sağlamak açısından oldukça uzundur. Bu nedenle hızlı moleküler tanı yöntemleri, altın standart olarak kabul edilen kültür yöntemleri kadar büyük önem arz etmektedir.

Bu çalışmanın amacı, Gaziantep Üniversitesi, Tıp Fakültesi, Şahinbey Araştırma ve Uygulama Hastanesi, Mikobakteri Laboratuvarına, 2022 yılı içerisinde gönderilmiş olan 1769 numunede, tüberküloz PCR (Polymerase Chain Reaction) test sonuçlarının retrospektif olarak incelenmesi ve ARB ile uyumluluk oranlarının irdelenmesidir. Laboratuvarımıza gönderilen klinik örnekler ARB aranması için, Ehrlich-Ziehl-Neelsen (EZN) yöntemi ile boyanarak mikroskobik olarak değerlendirilmiştir. PCR yöntemi olarak BD MAX Sisteminde gerçekleştirilen BD MAX™ Multi Drug Resistant Tuberculosis (MDR-TB) (Çoklu İlaç Dirençli Tüberküloz) testi kullanılmıştır. Bu yöntem, haftalar sürebilen geleneksel kültür yöntemlerine kıyasla 4 saatten kısa bir sürede sonuç sağlayabilmektedir. Değerlendirmeye alınan 1769 numuneden 56 tanesinde *M.tuberculosis* kompleks DNA'sı saptanmıştır. Bu 56 testten 18 tanesi ise ARB pozitif olarak tespit edilmiştir. Bu veriler ışığında, ARB ve PCR yöntemleri kıyaslandığında; ARB direkt mikroskobik bakı ile değerlendirme yönteminin pozitif öngörü değeri 0.46; Negatif öngörü değeri ise 0.98 olarak tespit edilmiştir. Yine bu veriler doğrultusunda ARB direkt bakı değerlendirme yönteminin duyarlılığı 0.32; özgüllüğü ise 0.99 olarak saptanmıştır. Bu da bize göstermektedir ki; ARB yüksek özgüllüğe sahiptir ve pozitif sonuçların hızlı moleküler yöntemler ile doğrulanarak, MTBC' nin hızlı ve doğru biçimde tespiti, bu hastalıktan ölüm oranını azaltmaya ve tüberkülozun yayılmasını durdurmaya yardımcı olmak açısından oldukça büyük önem arz etmektedir.

Anahtar Kelimeler: *Mycobacterium tuberculosis* kompleks, Polymerase Chain Reaction, Asid-Rezistan Basil.

PATNOS DEVLET HASTANESİNDE YAPILAN ROSE BENGAL TESTLERİNİN BİR YILLIK RETROSPEKTİF DEĞERLENDİRMESİ

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ÖZET

Bruselloz, dünyada bir çok ülkede görülen ve bazı bölgelerde endemik olan bir enfeksiyon hastalığıdır. Hastalığın kesin tanısı etkenin klinik örneklerden izolasyonu ile sağlansa da sıklıkla kültürde üretmek zor olduğu için, etyolojik tanıda ve seroprevalans değerlendirmesinde serum aglütinasyon testleri ve Rose- Bengal gibi serolojik testler kullanılmaktadır. Rose Bengal Testi (RBT) ve standart serum tüp aglütinasyon (STAT) testleri uygulanması kolay ve ucuz olmaları nedeniyle tüm dünyada yaygın olarak kullanılmaktadır. Ayrıca, RBT'nin, brusellozun endemik olduğu bölgelerde, hastalıkla tekrar karşılaşma durumunda veya yeni geçirilmiş enfeksiyon öyküsü olanlarda tanıda tek başına kullanılmaması tavsiye edilmektedir.

Bu çalışmadaki amacımız, Patnos Devlet Hastanesinde 2021-2022 yılları arasında yapılmış olan 6586 RBT'ni retrospektif olarak değerlendirmek, özellikle çoğu laboratuvarda rutin olarak sıklıkla kullanılan RBT'nin, pozitif ve negatif öngörü değerlerini, duyarlılık ve özgüllüğünü irdeleyerek bir durum değerlendirmesi yapmaktır.

Bir yıl içinde laboratuvarda çalışılan toplam 6586 serum örneğinde Rose Bengal testi çalışılmıştır. Tarama amaçlı kullanılan RBT lam aglütinasyon prensibiyle çalışıldı. Aglütinasyon sonucu dört dakika beklendikten sonra kalitatif olarak pozitif ya da negatif olarak değerlendirildi. RBT ile pozitif olarak saptanan olgular laboratuvar olanakları dahilinde Wright ya da Coombs testi ile doğrulamaya alındı. Serum örneğinde STAT ile antikor titresinin ≥1/160 titre olması pozitif olarak kabul edildi. Bunlardan 156 tanesi RBT pozitif raporlanmıştır. RBT negatif tespit edilen 8 test ise doğrulama testi ile pozitif olarak saptanmıştır. Totalde 156 pozitif RBT den 98'i gerçek pozitif olarak değerlendirilmiştir. Bu veriler ışığında; RBT pozitif öngörü değeri 0.63; negatif öngörü değeri 0.99; duyarlılığı 0.92; özgüllüğü ise 0.99 olarak hesaplanmıştır.

Bu veriler bize tarama testi olarak kullanılan RBT' nin yüksek duyarlılık ve özgüllüğe sahip olduğunu bir kez daha göstermiştir.

Anahtar Kelimeler: Brucella, Rose Bengal, Standart Serum Tüp Aglütinasyon Testleri

GAZİANTEP ÜNİVERSİTESİ TIP FAKÜLTESİ MOLEKÜLER MİKROBİYOLOJİ LABORATUVARI 2018-2022 YILLARINDA ÇALIŞILAN HDV RNA SONUÇLARI

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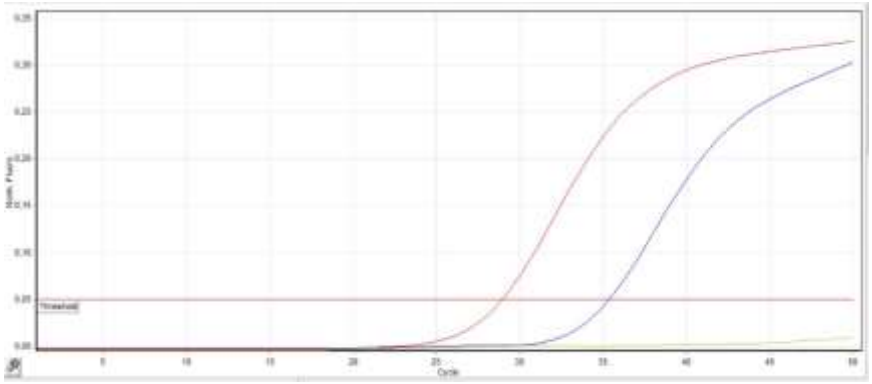
ÖZET

Hepetit Delta Virüsü (HDV), 36 nm çapında, tek sarmallı, dairesel bir RNA virüsüdür. HDV, Delta virüs cinsinde sınıflandırılmıştır. HDV tam bir replikasyon oluşturabilmek için Hepatit B yüzey antijenine (HBsAg) ihtiyaç duymaktadır. HDV ve Hepatit B Virüsü (HBV) koenfeksiyonları oldukça agresif seyirli bir viral hepatite neden olur. 1-2 yıl içerisinde hastaların %15'inde, 5-10 yıl içerisinde ise %70-80'inde siroz gelişmesine neden olabilmektedir.

Çalışmamızda, Gaziantep Üniversitesi Şahinbey Araştırma ve Uygulama Hastanesi Moleküler Mikrobiyoloji Laboratuvarında, 2018 - 2022 yılları arasında çalışılan HDV RNA test sonuçlarının retrospektif olarak irdelenmesi amaçlanmıştır. HDV RNA, serum örneklerinden çalışılmakta olup, laboratuvara gelen örnekler +4°C'de muhafaza edildi. Çalışmaya 155'i erkek (% 40.9), 224'ü kadın (% 59.1) hastadan gönderilen 379 numune dahil edildi. Hastaların tamamının HBsAg pozitif olduğu tespit edildi. RNA izolasyonu EZ1 Advanced XL (Qıagen, Hilden, Germany) cihazında otomatize olarak yapıldı. İzolasyon için EZ1&2 Virus Mini Kit V2.0 (48) (Qıagen, Hilden, Germany) kiti kullanıldı. İzolasyon sonrasında elde edilen elüatlar HDV QNP 1.0 Real Time PCR (Fluorion, Iontek, Turkey) kiti kullanılarak Rotor Gene Q Real Time PCR (Qıagen, Hilden, Germany) cihazı ile amplifikasyonu yapıldı (Resim 1). Her çalışmada negatif ve pozitif kontrol kullanılarak kalitatif analiz yapıldı. 2018 yılında 8 (% 19), 2019 yılında 24 (%22.4), 2020 yılında 14 (% 13.1), 2021 yılında 9 (%12.9), 2022 yılında 7 (%13.2) hastada HDV RNA pozitif olarak bulunmuştur. İstatistiksel olarak hastaların yıllara göre dağılımı Tablo 1'de verilmiştir.

Resim 1. Real Time PCR amplifikasyon eğrisi



Tablo 1. HDV RNA sonuçlarının yıllara göre dağılımı.

		ERKEK		**KADIN**		**Toplam**
		Pozitif	**Negatif**	**Pozitif**	**Negatif**	
2018	n (%)	6 (14.3)	10 (23.8)	2 (4.8)	24 (57.1)	**42 (100)**
	Yaş Ort	39.8	40.1	33	20.5	**33.4**
2019	n (%)	20 (18.7)	23 (21.5)	4 (3.7)	60 (56.1)	**107 (100)**
	Yaş Ort.	40.8	43.2	52	43.1	**44.8**
2020	n (%)	9 (8.4)	37 (34.6)	5 (4.7)	56 (52.3)	**107 (100)**
	Yaş Ort	49,9	41.8	46.8	38.5	**44.3**
2021	n (%)	6 (8.6)	25 (35.7)	5 (7.1)	34 (48.6)	**70 (100)**
	Yaş Ort	46,2	39,6	41.8	43.2	**42.7**
2022	n (%)	3 (5.7)	16 (30.2)	4 (7.5)	30 (56.6)	**53 (100)**
	Yaş Ort	55.5	45.1	56	53	**52.4**
Toplam	n (%)	**44 (%11.6)**	**111(29.3)**	**20 (5.3)**	**204 (53.8)**	**379 (100)**
	Yaş Ort.	**46.4**	**41.9**	**45.9**	**39.7**	**43.5**

HDV koenfeksiyonu artmış morbidite ve mortalite ile ilişkilidir ve HBV'li hastalar HDV enfeksiyonu yönünden test edilmelidir. HDV-HBV koenfeksiyonu, fibrozise doğru hızlı ilerleme ve artan hepatoselüler karsinom (HCC) riski nedeniyle tek başına HBV

enfeksiyonundan daha ciddi karaciğer hastalığına neden olabilmektedir. Bu nedenle hızlı ve doğru teşhis hayati derecede önem arz etmektedir. Moleküler tanı yöntemlerinin hızlı ve kesin sonuç vermesi, tedavi protokollerinin belirlenmesinde önemli ölçüde etkindir.

Anahtar Kelimeler : HDV RNA, HBsAg, HBV, Real Time PCR

THE PREVENTIVE ROLE OF *SPIRULINA SP.* IN FEMALE INFERTILITY

KADIN İNFERTİLİTESİNDE *SPIRULINA SP.*'NİN ÖNLEYİCİ ROLÜ

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ÖZET

Küresel nüfus, ekolojik dengeyi ciddi şekilde bozmuş ve insanlığı doğurganlığı düzenleyici yeni teknikler geliştirmeye zorlamıştır. Kadın kısırlığı, kadın üreme sisteminin farklı zararlı çevresel faktörlere karşı çok hassas olduğu bir sağlık sorunudur. Over, dişi üreme sisteminde birçok işlevi sağlayan oosit ve farklı steroid hormonları üreten bir üreme organıdır. Yumurtalık disfonksiyonu genellikle anovulatuar infertiliteye yol açar.

Algler, tıpta çok amaçlı kullanıma sahip potansiyel besin kaynağıdır. Ayrıca algler, çeşitli biyolojik aktivitelere sahip zengin bir doğal biyoaktif bileşik kaynağı da sağlar. Ek olarak, insan sağlığı için önemli maddeler olan karotenoidler, mikro besinler ve amino asitler gibi birçok benzersiz özellikteki bileşiği ihtiva eder. Fenol, flavonoit ve tanen gibi fenolik yapıdaki bileşenler antioksidan aktiviteden ve serbest radikal kovucu etkiden sorumludur. Alg ekstreleri ile yapılan çalışmalarda ekstrede bulunan polifenollerin antioksidan etki gösterdiği belirtilmiştir. Bu nedenle, araştırma alanında alglerin insan sağlığı üzerindeki olumlu etkisine olan ilgi artmaktadır.

Spirulina platensis (Sp), oscillatoriaceae familyası cyanophyceae sınıfına ait ipliksi, spiral şekilli, çok hücreli ve fotosentetik bir mavi yeşil algdir. Bu canlılar dünya çapında yetiştirilmektedir ve birincil insan besin takviyesi olarak kullanılmaktadır. Vitaminler, mineraller, proteinler, alfa-linolenik asit, beta-karoten ve keşfedilmemiş biyoaktif bileşikleri içeren çok çeşitli profilaktik ve iyileştirici besinler içerir. Besinsel avantajlarının yanı sıra Sp, antibakteriyel, antifungal, antiviral, antikanser, antienflamatuar ve antioksidan aktiviteler gibi ekstra faydalı karakterlere sahiptir.

Sp'ler hemen hemen tüm biyokimyasal reaksiyonlarda saptanabilir bir role sahiptir ve dokuları yüksek konsantrasyonlarda güvenli diyet uygulamalarına atfedilebilen oksidatif strese karşı koruyan hayati antioksidanlardır. Bu çalışmada, kadın infertilitesinin düzenlenmesine yardımcı olacak çok sayıda bitki ve alg türevi ürün üzerinde yapılan çalışmalar derlenmiştir.

Anahtar kelimler: *Spirulina sp.*, infertilite, over, doğurganlık

CHLORELLA AS A SUPPLEMENT TO PROMOTE HUMAN HEALTH

SAĞLIĞIN DESTEKLEYİCİ GIDASI *CHLORELLA*

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ÖZET

Chlorella, ticari olarak üretilen ve besin takviyesi olarak tüketilen dünya çapında yaygın yeşil tek hücreli bir alg türüdür. Doğal olarak yapısında proteinler, vitaminler, mineraller ve diyet lifi bulunur. Bilinen faydaları arasında bağışıklık güçlendirici, kilo vermeyi teşvik eden, kanser ve diğer hastalıklarla mücadele bulunur. Antioksidanlar da dahil olmak üzere proteinler, omega-3 yağ asitleri, vitaminler ve mineraller dahil olmak üzere bir dizi besin içerir. *Chlorella,* doğal haliyle sindirilmesini zorlaştıran sert bir hücre duvarına sahiptir. İşlenmesiyle besin maddelerini sindirilebilir hale getirir. Bazı insanlar, büyüyen küresel nüfusu beslemek için *Chlorella*'yı bir protein kaynağı ve diğer besinler olarak kullanmayı önermektedir. Yapılan çalışmalarda, vücudun bu alg proteinini etkili bir şekilde emdiğini göstermiştir. Bu, bitki protein kaynakları için nadirdir. *Chlorella*'yı veganlar için uygun bir protein seçeneği haline getirir. Ayrıca bazı araştırmalar tarım ekipmanları için alternatif ve yenilenebilir bir yakıt kaynağı olarak önermektedir. Bazı tıbbi durumlar ve tedaviler zayıflamış bir bağışıklık sistemine yol açabilir. *Chlorella* demir, folat ve B12 vitamini de içerir. Bazı araştırmacılar, hamilelik sırasında yüksek tansiyonu azaltabileceğini öne sürmektedirler. Bu canlıların %70'e kadar kuru ağırlık proteini içerebilir. Sıvı, toz veya tablet şeklinde tüketilebilecek formları mevcuttur. Östrojen vücutta doğal olarak bulunan bir hormondur. Bununla birlikte, östrojen aktivitesini taklit eden bazı maddeler vücuda zarar verebilir. Ksenoöstrojenler olarak bilinen bu maddeler vücuda kirli toprak, su, hava, plastikler ve diğer kaynaklardan girebilir. Ksenestrojenler, bir kişinin çeşitli kanser türleri geliştirme şansını artırabilir. 2009 yılında yapılan bir çalışmada, *Chlorella fusca*, bisfenol A (BPA) olarak bilinen bir ksenoöstrojenin %90'ını bir laboratuvar kültüründen çıkardı. *Chlorella*'nın içeriğindeki maddeler ile vejetaryenler ve veganların yaygın olarak yaşadığı bazı besin eksikliklerini giderebilecek oldukça besleyici bir besin takviyesi olduğu bildirilmektedir. Bazı eski bilimsel kanıtlar, sağlığı korumak için kullanımını desteklemektedir, ancak bu iddiaları doğrulamak için daha fazla araştırma yapılması gerekmektedir.

Anahtar kelimeler: *Chlorella sp*., sağlık, gıda takviyesi, besin, alg.

KODLANMAYAN RNA'LARIN PROGNOSTİK ÖNEMİ

THE PROGNOSTIC SIGNIFICANCE OF NON-CODING RNAs

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ÖZET

İnsan genomunun, genom dizisinin sadece ~ %2' sini oluşturan 20.000 protein kodlayan gen içerdiği tahmin edilmektedir. Proteinleri kodlamayan ve yalnızca RNA'ya kopyalanan diğer ~3000 gen, kodlanmayan RNA (ncRNA) olarak adlandırılır. Uzun yıllar insan genomunun proteinleri kodlamayan bu kısmı "çöp" DNA olarak kabul edilmiştir. Genel olarak, ncRNA'lar boyutlarına göre iki ana kategoriye ayrılır: kısa ncRNA'lar (<200 nükleotit) ve uzun ncRNA'lar (lncRNA) (>200 nükleotid). Kısa ncRNA'lar, mikroRNA'lar (miRNA'lar), transfer RNA'lar (tRNA'lar), piwi etkileşimli RNA'lar (piRNA'lar), transkripsiyonu başlatan RNA'lar (tiRNA'lar) ve endojen küçük karışan RNA'lar (endo-siRNA'lar)'dır. ncRNA'lar, biyolojik reaksiyonların katalizlenmesinden hücresel savunmaya, gelişimsel süreçlerden hücresel cevaba kadar pek çok göreve sahiptir. ncRNA'ların diğer işlevleri arasında transkripsiyonel ve post-transkripsiyonel gen susturma ve kromozomların yeniden modellenmesi de yer almaktadır. lncRNA, 200 nükleotitten daha uzun, spesifik açık okuma çerçevesinden yoksun olan ve proteinleri kodlamanın engellenmesine neden olan endojen transkriptlerdir. lncRNA, transkripsiyon sonrası, translasyon sonrası ve epigenetik mekanizmalar yoluyla çeşitli fizyolojik ve patolojik süreçleri düzenleyebilir. Artan kanıtlar, lncRNA'ların genellikle gen ekspresyonu, transkripsiyon, hücresel gelişim, farklılaşma, çoğalma ve hücre kaderinde kritik biyolojik işlevler oynadığını göstermektedir. Başta kanser olmak üzere birçok hastalıkta, ncRNA'ların aşırı eksprese edildiği ve biyobelirteçler olarak önerildiği rapor edilmiştir. Ayrıca çalışmalar, yüksek özgüllük ve doğruluğa sahip ncRNA'ların özellikle farklı kanserlerde biyobelirteçler haline gelebileceğini göstermiş ve çeşitli insan hastalıklarında muazzam roller oynadığını ortaya koymuştur. Daha da önemlisi, ncRNA'ların anormal ekspresyonunun tümörijenezde rol aldığı bulunmuş ve bunların çoğunun kanser prognozu ile ilişkili olduğu gösterilmiştir. lncRNA'ların, hepatoselüler karsinom, küçük hücreli olmayan akciğer kanseri, osteosarkom, yumurtalık karsinomu ve renal hücreli karsinomu gibi kanserler için umut verici prognostik göstergeler olduğu bildirilmiştir. Bu nedenle lncRNA, potansiyel tümörijenik ve antitümörijenik RNA olarak da görülebilir. Çeşitli kanser türlerinde spesifik ekspresyonları ve fonksiyonel çeşitlilikleri nedeniyle, lncRNA'nın umut verici kanser teşhis uygulamaları, prognozu ve terapötik etkileri vardır. Bu derlemede, başta lncRNA'lar olmak üzere tüm

ncRNA'ların çeşitli hastalıklarla olan ilişkileri ve prognozdaki önemi son literatürler ışığında derlenmiştir.

Anahtar Kelimeler: kodlanmayan RNA'lar, prognoz, biyobelirteç, insan, hastalık

ÖKARYOTİK GEN YAPISINDAKİ İNTRONLARIN ÖNEMİ ve HASTALIKLARLA İLİŞKİSİ

THE IMPORTANCE OF INTRONS IN THE STRUCTURE OF EUKARYOTIC GENES and THEIR RELATIONSHIP WITH DISEASES

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ÖZET

İnsan genlerinin %3'ü protein kodlayan dizileri içerirken ökaryotik gen yapısının en önemli özelliklerinden biri tipik olarak ekson ve intron bölgeleri içermesidir. Tüm intronlar transkripsiyon yoluyla RNA'lara ve replikasyon süreçleriyle de DNA'lara kopyalanır, ancak protein kodlama dizilerine katılmaz. İntronların evrimsel kökenine bakıldığında, çoğunun prokaryot-ökaryot ayrışmasından sonra DNA'ya eklendiği düşünülmektedir ve intronlarla ilgili 2 teori (Erken ve Geç) hala tartışılmaktadır. İntronların, ökaryotlarda keşfedildiklerinden bu yana önemleri ayrıntılı moleküler teknikler sayesinde giderek daha iyi anlaşılabilmektedir. İntronların; protein çeşitliliği sağlayan alternatif uç birleştirme mekanizmasında, gen ifadesinin pozitif regülasyonunda, mRNA'ları seçici olarak ortadan kaldıran gözetim mekanizmasında, mRNA taşınması ile kromatin montajının yapılmasında önemli rolleri gösterilmiştir. Gen içindeki intronların farklı sıralı konumları ise farklı işlevsel role sahiptir. Transkripsiyon faktörü bağlama motifleri ve aktif histon işaretleri ilk intronlarda oldukça zengindir. İntronların uzunluğu, doğal seçilimin verimliliğinde önemlidir ve birkaç çeşit kodlamayan işlevsel RNA genini kodladığı da gösterilmiştir. Aynı zamanda, intronlar ait oldukları genlerin ekspresyonunu etkileyebilen fonksiyonel polimorfizmleri de barındırırlar. Bu intronik varyantlardan bazılarının hastalığa yatkınlık sağlayabildiği veya genotip-fenotip ilişkisini başka şekilde modüle edebildiği bildirilmiştir. Bu varyantların çoğu tek nükleotid (SNP), bazıları ise çoklu nükleotit tekrar dizilerini (VNTR) içermektedir. CD244 genindeki varyantların (rs6682654/rs3766379) romatoid artrit duyarlılığını arttırdığı; FGFR2 genindeki varyantın (rs2981578) meme kanserine yatkınlığı, FOXP3 genindeki varyantın (rs3761548) sedef hastalığına yatkınlığı arttırdığı bildirilmiştir. GSK3B genindeki varyant (rs6438552) ise Parkinson hastalığında artmış risk ile ilişkili bulunmuştur. Miyokard enfarktüsü, obezite, çocukluk çağı akut lenfoblastik lösemi ve osteoporoz gibi çok çeşitli hastalıkların riski ile ilişkilendirilmiş intronik polimorfizmler de literatürde bildirilmiştir. SNP'lerin yanı sıra intronlardaki VNTR polimorfizmleri de sıklıkla çalışılmaktadır. Endotelyal eNOS (intron4a/b VNTR); madde kullanım bozukluklarında, akciğer kanserinde, endometriyal karsinomda,

bipolar hastalık ve şizofrenide çalışılmış ve anlamlılık belirlenmiştir. IL-1RA ve IL-4 genlerindeki VNTR'lar ise çeşitli enflamatuar hastalıklarla ilişkilendirilmektedir. Bu çalışmada, uzun bir süre ökaryotik genomda yük olarak görülen intronların artan önemi ve çeşitli hastalıklarla ilişkilendirilmiş fonksiyonel intronik polimorfizmler gözden geçirilecektir.

Anahtar kelimeler: Ökaryotik gen, intron, polimorfizmler, SNP, VNTR

ABSTRACT

Protein-coding sequences are found in 3% of human genes, and one of the most important characteristics of eukaryotic gene structure is the presence of exon and intron regions. Introns are all transcribed into RNAs and DNAs by transcription and replication processes, but they do not participate in protein coding sequences. In terms of intron evolution, most are thought to have been added to DNA after prokaryote-eukaryote divergence, and two theories about introns (Early and Late) are still debated. Since the discovery of introns in eukaryotes, their importance has been increasingly recognized by detailed molecular techniques. It has been shown that introns play an important role in the alternative splicing mechanism that provides protein diversity, in the positive regulation of gene expression, in the surveillance mechanism that selectively removes mRNAs, in mRNA transport and chromatin assembly. Different ordered positions of introns in the gene have different functional roles. Transcription factor binding motifs and active histone markers are very rich in first introns. The length of introns is important in the efficiency of natural selection and has also been shown to encode several types of functional non-coding RNA genes. Also, introns contain functional polymorphisms that can affect the expression of the genes to which they belong. It has been reported that some of these intronic variants may predispose to disease or otherwise modulate the genotype-phenotype relationship. Most of these variants contain single nucleotide (SNP) and some contain multiple nucleotide repeat sequences (VNTR). Variants in the CD244 gene (rs6682654/rs3766379) increased susceptibility to rheumatoid arthritis; It has been reported that the variant in the FGFR2 gene (rs2981578) increases susceptibility to breast cancer, and the variant in the FOXP3 gene (rs3761548) increases the susceptibility to psoriasis. The variant in the GSK3B gene (rs6438552) was associated with an increased risk in Parkinson's disease. Intronic polymorphisms associated with the risk of a wide variety of diseases such as myocardial infarction, obesity, childhood acute lymphoblastic leukemia and osteoporosis have also been reported in the literature. Besides SNPs, VNTR polymorphisms in introns are also frequently studied. Endothelial eNOS (intron4a/b VNTR); It has been studied in substance use disorders, lung cancer, endometrial carcinoma, bipolar disease and schizophrenia, and its significance has been determined. VNTRs in IL-1RA and IL-4 genes are associated with various inflammatory diseases. In this study, the increasing importance of introns, which have long been regarded as burdens in the eukaryotic genome, and functional intronic polymorphisms associated with various diseases will be reviewed.

Keywords: Eukaryotic gene, intron, polymorphisms, SNP, VNTR

Investigation of The Biological Effects of Ginkgolide A Loaded Nanoparticles in C6 Glioma Cells

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ABSTRACT

Glioblastoma multiforme is an astrocytoma classified as grade IV gliomas. Chemotherapy is included in the treatment methods, the survival time in glioblastoma patients doesn't exceed 15 months as a result of limited effectiveness to drugs and the rapid spread of the disease. Nanoparticular systems are used as drug delivery systems in many treatments to increase the effectiveness of existing drugs and to provide controlled release.

In this study, the biological effects of Ginkgolide A and Ginkgolide A loaded PLGA nanoparticles on C6 Glioma cells were investigated.

Ginkgolide A loaded PLGA nanoparticles were synthesized using single emulsion (w/o) solvent evaporation method and characterization analysis were performed. The cytotoxic activity of Ginkgolide A and Ginkgolide A loaded PLGA nanoparticles in C6 Glioma cells at applied by MTT method. The IC50 values of Ginkgolide A and Ginkgolide A loaded PLGA nanoparticles on C6 Glioma cells at 24 and 48 hours were determined as 175 µM, 116 µM, 136 µM and 64 µM respectively. The apoptotic effect of Ginkgolide A and Ginkgolide A loaded PLGA nanoparticles on C6 Glioma cells was determined by TUNEL method. A significant increase in apoptotic activity was observed in C6 Glioma cells treated with Ginkgolide A loaded PLGA nanoparticles at 24 and 48 hours compared to control cells ($p<0.05$). Antioxidant capacity was determined with the total antioxidant status (TAS) kit. A significant increase in TAS capacity was observed in C6 Glioma cells treated with Ginkgolide A loaded PLGA nanoparticles at 48 hours compared to control cells ($p<0.05$).

As a result that; Gingkolide A loaded PLGA nanoparticles was high antioxidant and the apoptotic activity on C6 Glioma cells. This study will contribute to future research.

Keywords: Ginkgolide A, Glioma, PLGA, Oxidative damage, MTT, Antioxidant, TUNEL

TÜRKİYE'DE TOPLUM ECZANELERİ ÇALIŞMA ORTAMININ HASTA GÜVENLİĞİ ÜZERİNE ETKİLERİ

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ÖZET

Toplum eczacılarının sosyal ortamları yani iş yeri olarak bir eczane, içindeki insanların etkileşimi nedeniyle sık sık değişim gösteren karmaşık bir ortamdır. Bir eczane kanunda belirtildiği üzere asgari 35 metrekarelik bir alan içerisine ilaç raflarına, bir laboratuvara, soğuk zincir dolabına, ilaç yapma bankosuna ve laboratuvar malzemelerinin depolanabileceği bir alana sahip olmalıdır. Çalışma ortamı yapılan işin niteliğini etkilemektedir. Bu çalışmada, toplum eczacılarının çalışma ortamlarının ve içinde bulundukları şartların verdikleri hizmetin kalitesine ve hasta güvenliğine etkisi araştırılmıştır. Toplum eczacıları için çok sayıda literatür araştırılarak ve eczane uygulamaları ile ilgili uzman kişilere danışılarak araştırmacılar tarafından hazırlanan anket soruları kullanılmıştır. Çalışmaya katılan 96 eczacıya farmasötik bakım görevlerini yerine getirmek için yeterli zamanlarının bulunup bulunmadığı sorulmuş ve %32'si kararsız kalmış, %20'lik kısmı ise zamanlarının olmadığı yönünde görüş bildirmiştir. Eczacıların %50'si eczacılık politikaları, mevzuat ve yönetmeliklerin farmasötik bakımı ve eczanedeki idari işleri kolaylaştırmadığını ifade etmişlerdir. Eczacılar çalışma saatlerinin uzunluğu, iş stresi, iş yükü, hastalardan gelen zorbalık, şahsi hayatlarına yeterli vakti ayıramama gibi sebeplerden rahatsızlıklarını bildirmektedirler. Eczacıların %50'si hasta güvenliği konusunda kendisi ve personellerinin titiz davrandıklarını ifade etmişlerdir. Ankette hasta güvenliğini sağlama yeteneklerine olumlu katkı sağlayabilecek durumların yazılması istenmiş ve "personelin eğitim düzeyinin yüksek olması", "işyerinde uyum ve huzur", "hastaların eğitim düzeyinin yüksek olması" gibi çeşitli cevaplar alınmıştır. Hasta güvenliğini sağlama yeteneklerini olumsuz etkileyebilecek durumlar konusunda ise "SGK kesintileri ve kesinti olabilir düşünceleri", "hastaların sabırsızlığı ve eğitim düzeylerinin düşük olması", "eczacılık için gereksiz olan mevzuat ve bürokratik işlemler" şeklinde ifadelerde bulunmuşlardır. Sonuç olarak, çalışma ortamındaki idari görevlerin ve mesleki görevlerin çakışması, hastalardan gelen şikayetler ve baskı, eczane içerisindeki iş disiplini ve görev dağılımı gibi faktörler çalışma ortamındaki şikayetleri, iş sistemi içindeki uyumu ya da uyumsuzluğu oluşturmakta ve bunların hasta güvenliğini etkilediği görülmektedir.

Anahtar kelimeler: toplum eczaneleri, çalışma ortamı, hasta güvenliği, farmasötik bakım.

THE EFFECTS OF COMMUNITY PHARMACIES WORK ENVIRONMENT ON PATIENT SAFETY IN TURKEY

ABSTRACT

The social environment of community pharmacists, namely a pharmacy as a workplace, is a complex environment that changes frequently due to the interaction of the people in it. As specified in the law, a pharmacy should have medicine shelves, a laboratory, a cold chain cabinet, a medicine counter and an area where laboratory materials can be stored, within a minimum area of 35 square meters. The working environment affects the quality of the work performed. In this study, the effect of the working environment of community pharmacists and the conditions they are in on the quality of the service they provide and patient safety was investigated. The questionnaire questions prepared by the researchers by researching a large number of literature for community pharmacists and consulting with experts in pharmacy practice were used. The 96 pharmacists who participated in the study were asked whether they had enough time to fulfill their pharmaceutical care duties and 32% of them were undecided and 20% of them stated that they did not have time. 50% of the pharmacists stated that pharmacy policies, legislation and regulations do not facilitate pharmaceutical care and administrative work in the pharmacy. Pharmacists reported their discomfort due to the length of working hours, work stress, workload, bullying from patients, and not having enough time for their personal lives. 50% of the pharmacists stated that they and their staff are meticulous about patient safety. In the questionnaire, they were asked to write the situations that contribute positively to their ability to ensure patient safety and various answers were received such as "high level of education of the staff", "harmony and peace in the workplace", " high education level of the patients". Regarding the situations that would negatively affect their ability to ensure patient safety, they made statements such as "SSI deductions and thoughts that there may be deductions", "impatience of patients and low level of education", "legislation and bureaucratic procedures that are unnecessary for pharmacy". As a result, factors such as the overlap of administrative and professional tasks in the working environment, complaints and pressure from patients, work discipline and task distribution within the pharmacy create complaints in the working environment, harmony or disharmony within the work system, and these are seen to affect patient safety.

Keywords: community pharmacy, work environment, patient safety, pharmaceutical care.

BAKÜ BÜYÜKŞEHİRİNİN FARKLI İSTASYONLARINDAKİ AEROMYCOBIOTA'NIN GENEL ÖZELLİKLERİ

GENERAL CHARACTERISTICS OF AEROMYCOBIOTA IN DIFFERENT STATIONS OF BAKU METROPOLITAN

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ÖZET:

Sunulan çalışma, büyükşehir Bakü şehrinde dağıtılan aerojenik mikobiyotanın genel analizine adanmıştır. Bakü metrosunun yer altı istasyonlarının peronları, hareket eden vagonlar ve metro istasyonlarının çıkış bahçeleri araştırma konusu olarak alınmıştır. Aynı zamanda, tescilli istasyonların hem denize yakın hem de yükseklikteki konumlarının yanı sıra, derinlikleri ve yapım yılları da dikkate alındı. Bu amaçla 1967 yılında inşa edilen "Sahil", "28 Mayıs", "Şehir İçi", "Nizami", "20 Ocak", 1985 yılında hizmete giren "Memar Ajami", 2002 yılından itibaren "Ahmedli" işletmeye alınmıştır. 2008-2011 yıllarında inşa edilen Aslanov", "Güneşli", "Nasimi", "Azadlig", "Darnagul" metro istasyonları incelendi. Adı geçen istasyonların platformları, dünya yüzeyinden 10-15 m derinlikte bulunmaktadır. Metro istasyonlarının yer altı alanlarına ait platformların atmosferik havasından alınan numuneler ile hareket halindeki arabaların atmosferik havası sırasıyla sonbahar ve kış mevsimlerinde çöktürme yöntemiyle elde edilmiştir. Bu sırada benzin istasyonlarının yer üstü alanlarının platformlarının zeminlerine ve vagonlarda 1,5 m yükseklikte Saburo besin ortamına sahip Petri kapları yerleştirildi. Çalışılan mikroskobik mantarların tür kompozisyonu, hem kültürel ve morfolojik özelliklere göre hem de bilinen belirleyicilere göre belirlendi. Yapılan araştırmalar sonucunda, metropolün iç ve dış hava ortamındaki mikroskobik mantarların niceliksel göstergeleri, yani tek bir ciltteki sayıları, hakkında gerçek bir kanıya varmak için esas alınamaz. Bu nesnelerde mikolojik güvenlik. Çünkü hava ekosistemindeki mikolojik güvenliğin değerlendirilmesinde koloni oluşturan elementlerin birim hacimdeki yoğunluğu ve fırsatçı mantarların sayısı biyolojik kirliliğin ana kriteri olarak alınmaktadır. Metro istasyonlarının iç ve dış hava ortamlarında fırsatçı mantarların sayısı sonbahar ve ilkbaharda ikiye katlanmakta ve spor büyüklükleri 8-10 μm'ye denk gelmektedir. Metro istasyonlarında oluşan aeromikobiyotaların hem sayı hem de tür kompozisyonu insan sağlığı için risk oluşturacak düzeyde (<300 KEV⁄m3) değildir. Dolayısıyla Bakü metrosunun çoğu istasyonunda oluşan aerojen mikobiyotanın hem sayısı hem de tür kompozisyonu, bu tür ulaşımı kullanan kişilerin sağlığı için risk faktörü sayılacak düzeyde değildir.

Anahtar kelimeler: metropol, aeromycobiota, fırsatçı, alerjen, risk faktörü.

ABSTRACT:
The presented work is dedicated to the general analysis of the aerogenic mycobiota distributed in the metropolitan city of Baku. Platforms of underground stations of Baku metro, moving carriages and exit yards of metro stations were taken as the object of research. At the same time, in addition to the location of the registered stations both near the sea and at a height, their depth and year of construction were also taken into account. For this purpose, "Sahil", "May 28", "Inner city" built in 1967, "Nizami", "January 20", "Memar Ajami" commissioned in 1985, "Ahmedli" operated since 2002. ", "H. Aslanov", "Guneshli", "Nasimi", "Azadlig", "Darnagul" metro stations built in 2008-2011 and analyzed. The platforms of the named stations are located at a depth of 10-15 m from the earth's surface. The samples taken from the atmospheric air of the platforms of the underground areas of the metro stations and the moving cars were obtained by the sedimentation method in the autumn and winter seasons, respectively. At this time, Petri dishes with Saburo nutrient medium were placed on the floors of the platforms of the above-ground areas of the gas stations, and at a height of 1.5 m in the carriages. The species composition of the studied microscopic fungi was determined both according to cultural and morphological characteristics and on the basis of known determinants. As a result of the conducted research, the quantitative indicators of microscopic fungi in the indoor and outdoor air environment of the metropolis, in other words, the number of them in a single volume, cannot be considered as a basis for making a real opinion about the mycological safety in these objects. Because the density of colony-forming elements in a unit volume and the number of opportunistic fungi are taken as the main criteria of biological pollution in the assessment of mycologic safety in the air ecosystem. The number of opportunistic fungi in indoor and outdoor air environments of metro stations doubles in autumn and spring, and the size of spores is equal to 8-10 μm. Both the number and species composition of aeromycobiota formed in subway stations are not at the level (<300 KEV⁄m3) that would be considered a risk factor for human health. Thus, both the number and species composition of aerogenous mycobiota formed in most stations of the Baku metro are not at the level to be considered a risk factor for the health of people using this type of transport.
Key words: metropolitan, aeromycobiota, opportunist, allergen, risk factor.

Resolution of Overlapping Phenolic Acid Peak Confusion in HPLC-DAD Analysis by Peroxynitrite Reaction

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ABSTRACT

In this study, phenolic acid standards were overlapped at 25 °C by changing the solvent gradient and time factors. The locations of the phenolic acids were determined after the analysis of the overlapping components with DAD. The standards were carried out in HPLC after being treated with synthesized peroxynitrite one by one, off-line both at pH 7.4 and by stopping the reactivity of peroxynitrite with 1 M HCl and phenolic acids were distinguished by the disappearance or transformation of the phenolic acid peak. For Ferulic acid HPLC analysis at 280 nm, the percent reactivity with peroxynitrite was found to be 26.88%. In the future, the study may also help to avoid natural component multiple peak overlaps in HPLC analysis by derivatization of peroxynitrite.

Key Words:DAD, Fenolic acid, HPLC, Peroxynitrite

Ekaba (*Tetraberlinia bifoliolata* Haum.) ahşabında bazı yüzey özellikleri üzerine doğal yaşlandırmanın etkileri

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Özet

Bu çalışmada, ekaba (*Tetraberlinia bifoliolata* Haum.) ahşabında 2 aylık doğal yaşlandırma sonrasında bazı yüzey özellikleri araştırılmıştır. Yaşlandırılmış ve kontrol örnekleri üzerinde parlaklık değerleri [(20º, 60º ve 85º) ve lif yönleri (paralel ve dik)], beyazlık indeksi değerleri (liflere paralel ve dik yönlerdeki), kırmızı (*a**) renk tonu, kroma (*C**), ışıklılık (*L**), ton (*h*º) açısı ve sarı (*b**) renk tonu değerlerine ait testler belirlenmiştir. Sonuçlara göre, varyans analizi sonuçlarının bütün testler için anlamlı olarak belirlendiği görülmüştür. 1. aylık sonunda Δ*E** değeri 8.96 olarak belirlenirken, 2. aylık sonunda Δ*E** değeri 7.94 olarak bulunmuştur. 60 günün sonunda liflere dik ve paralel yönlerde beyazlık indeksi değerlerinin ve kırmızı (*a**) renk tonu değerlerinin azaldığı görülürken, 20°, 60° ve 85° açıları için liflere paralel (//) ve dik (⊥) yönlerde parlaklık değerleri, sarı (*b**) renk tonu değeri, ışıklılık (*L**) değeri, ton açısı (*h*º) ve kroma (*C**) değerlerinin arttığı tespit edilmiştir. Yapılan doğal yaşlandırma uygulamasının bu ağaç türüne ait yüzeyler üzerinde etkili olduğu görülmüştür.

Anahtar kelimeler: Ekaba, beyazlık indeksi, *Tetraberlinia bifoliolata* Haum., renk, doğal yaşlandırma, parlaklık,

Effects of natural weathering on some surface properties of Ekaba (*Tetraberlinia bifoliolata* Haum.) wood

Abstract

In this study, some surface properties of ekaba (*Tetraberlinia bifoliolata* Haum.) wood were investigated after 2 months of natural weathering. Glossiness values [(20º, 60º, and 85º) and fiber directions (parallel and perpendicular)], whiteness index values (perpendicular and parallel to the fibers), red (*a**) color tone, chroma (*C**), lightness (*L**), hue (*h*º) angle, and yellow (*b**) color tone values were determined. According to the results, it was seen that the analysis of variance results for all tests were obtained as significant. While the Δ*E** value at the end of the 1st month was 8.96, the Δ*E** value was 7.94 at the end of the 2nd month. At the end of 60 days, it was observed that the whiteness index values in the parallel and perpendicular directions to the fibers and red (*a**) color tone values decreased, when glossiness in parallel (//) and perpendicular (⊥) directions to the fibers for 20°, 60° and 85° angles, yellow (*b**) color tone value, lightness (*L**) value, tone (*h*º) angle, and chroma (*C**) values were found to increase. It has been observed that the natural weathering application is effective on the surfaces of this wood type.

Keywords: Ekaba, whiteness index, *Tetraberlinia bifoliolata* Haum., color, natural weathering, glossiness,

Bazı Odun Türleri Karışımından Oluşan Yongalar Ve Farklı Mol Oranlarına Sahip Üre Formaldehit Tutkallar Kullanılarak Üretilmiş Olan Yonga Levhalarda Bazı Mekanik, Fiziksel Ve Emisyon Özelliklerinin Karşılaştırılması

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Özet

Bu çalışmada, çeşitli odun türlerine ait odun yongaları [sarıçam (*Pinus sylvesters* L) sarıçam %60.00, meşe (*Quercus Petra* L) %32.00 ve kavak (*Populus alba* L) %8.00 ve farklı mol oranlarına (1.25 ve 1.35) sahip üre formaldehit tutkalları kullanılarak üretilmiş olan yonga levhalar (pres süresi 180 sn, pres basıncı 32 kp/cm^2, pres sıcaklığı 195ºC ve pres hızı 200 mm/sn) üzerinde bazı mekanik, fiziksel ve emisyon özelliklerinin karşılaştırılmıştır. Üretilen levhalarda ise kalınlık, yoğunluk, eğilme direnci, elastikiyet modülü, dik çekme direnci yüzey sağlamlığı, rutubet, su içerisine daldırma işleminden sonra kalınlığına şişme tayini 24 saat ve su emme 24 saat ve formaldehit emisyon testleri yapılmıştır. Elde edilen sonuçlara göre, 1.25 mol oranına sahip levhalarda sırasıyla 17.75 mm, 623.60 kg/m^3, 14.60 N/mm^2, 2668.58 N/mm^2, 0.47 N/mm^2, 1.25 N/mm^2, %6.50, %15.50, %84.23 ve 12.60 mg/100gr olarak bulunurken, 1.35 mol oranına sahip levhalarda ise 17.77 mm, 622.04 kg/m^3, 15.80 N/mm^2, 2847.58 N/mm^2, 0.49 N/mm^2, 1.28 N/mm^2, %6.60, %15.20, %78.43 ve 14.45 mg/100gr olarak bulunmuştur. Mol oranının farklı olması emisyon, fiziksel ve mekanik özellikleri üzerinde farklı sonuçların elde edilmesine neden olmuştur.

Anahtar kelimeler: Yonga levha, Emisyon, Mol Oranı, Üre Formaldehit, Mekanik Testler, Fiziksel Testler

Comparison of some mechanical, physical and emission properties of chipboards produced using urea formaldehyde glues with different molar ratios and chips consisting of a mixture of some wood species

Abstract

In this study, wood chips of various wood species [Scots pine (*Pinus slyvestris* L) 60.00%, oak (*Quercus p*etraea L) 32.00% and poplar (*Populus alba* L) 8.00%] and urea formaldehyde glues with different molar ratios (1.25 and 1.35) were used. Some mechanical, physical and emission properties were compared on particle boards (pressing time 180 sec, press pressure 32 kp/cm2, press temperature 195°C, and press speed 200 mm/sec). The thickness, density, bending strength, modulus of elasticity, vertical tensile strength, surface strength, humidity, swelling to the thickness after immersion in water, 24 hour water absorption, 24 hour and formaldehyde emission tests were carried out on the produced sheets. According to the results obtained, Plates with 1.25 mole ratio were also found as 17.75 mm, 623.60 kg/m^3, 14.60 N/mm^2, 2668.58 N/mm^2, 0.47 N/mm^2, 1.25 N/mm^2, 6.50%, 15.50%, 84.23%, and 12.60 mg/100gr. respectively. Plates with 1.35 mole ratio were determined as 17.77 mm, 622.04 kg/m^3, 15.80 N/mm^2, 2847.58 N/mm^2, 0.49 N/mm^2, 1.28 N/mm^2, 6.60%,

15.20%, 78.43%, and 14.45 mg/100gr. respectively. Different mole ratios caused different results on emission, physical and mechanical properties.

Keyword: Particleboard, Emission, Mole Ratio, Urea Formaldehyde, Mechanical Tests, Physical Tests

EXPERIMENTAL STUDY OF THE EVOLUTION OF THE BREACH AND THE DİSCHARGE THROUGH THE BREACH RESULTING FROM PIPING DUE TO THE SEEPAGE AT THE UPPER PART OF EARTH-FILL DAM WITH CLAY CORE

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ABSTRACT

One of the most significant reasons for earth-fill dam failures is internal erosion, often known as piping. This research was carried out as part of a project funded by the Scientific and Technological Research Council of Turkey (TÜBİTAK) and it involves an experimental investigation to look into the breach process and provide the data for more realistic numerical evaluations. The experiments were conducted at Hydraulics Laboratory of Civil Engineering Department within İzmir University of Economics. The earthen dam with clay core 0.65 m high, a bottom width of 2 m and a crest width of 0.05 m was built in a flume 1.00 m wide, 0.81 m high and 5.44 m long. Some common soil mechanics tests were also carried out before the dam was built. The dam body was constructed by using a mixture of 15 % clay and 85 % sand. The clay core width was 15 cm at bottom and 1 cm at crest. The weak layer of a cross section of 5x5 cm^2 was created by no-compacted soil mixture, and it was placed at 60 cm level from the bottom, along the centerline of the dam. High-precision cameras were used to record the temporal development of the breach resulting from the piping. The pump flow rate was measured by magnetic flowmeter and the flow rate values through the breach were determined from the continuity equation. Gauss Area formula was used to obtain the time-varied values of the total and wetted breach areas. The velocity values were calculated by dividing the flow

rates through the breach to the corresponding wetted areas. The temporal changes of water depth in the channel were also recorded. The so obtained experimental findings are presented and commented.

Keywords : Earth-fill dam; Clay core; Piping; Breach development; Discharge through breach

ULTRA YÜKSEK MOLEKÜL AĞIRLIKLI POLİETİLEN MALZEMENİN EĞİLME DAVRANIŞININ BELİRLENMESİ: DENEYSEL VE NÜMERİK ÇALIŞMA

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Özet

Bu çalışmada birçok endüstri uygulamalarında da yaygın olarak kullanılan 930 kg/m^3 molekül yoğunluğa ve 5x10^6 gr/mol molekül ağırlığa sahip Ultra Yüksek Molekül Ağırlıklı Polietilen (UHMWPE) yarı kristal malzemenin 3-Nokta eğilme altındaki mekanik davranışı deneysel olarak belirlenmiş ve Ls-Dyna sonlu elemanlar mühendislik programında polimerler için geliştirilen yarı deneysel malzeme modeli (SAMP-1) kullanılarak doğrulanmıştır. 3-Nokta eğilme testleri 0,1 mm/s eğilme hızında yapılmış ve test numunesi 22 mm ye kadar eğmeye zorlanmıştır. Kuvvet-yer değiştirme grafiği deneysel olarak başarılı bir şekilde ölçülmüştür. 3-Nokta eğilme testlerinin nümerik analizleri Ls-Dyna sonlu elemanlar mühendislik programında yapılmıştır. Nümerik analizlerde UHMWPE'nin malzeme davranışını tanımlayabilmek için SAMP-1 malzeme modelinin sunmuş olduğu Drucker-Prager akma yüzey yaklaşımı kullanılmıştır. Bu akma yüzey yaklaşımın seçilmesindeki temel sebep bu modelin polimerlerde gözlemlenen basma ve çekme altındaki farklı malzeme davranışlarını hesaba katabilme yetisidir. Basma ve çekme altındaki değişik malzeme davranışlarının hesaba katılmadığı durumda sayısal analizler sonuçlarını nasıl etkilediğini ortaya çıkarabilmek için aynı simülasyon Von Mises akma yüzey modeli kullanılarak da yürütülmüştür. Elde edilen deneysel veriler bu iki modelden elde edilen tahminler ile karşılaştırılmıştır. Yapılan karşılaştırma Drucker-Prager malzeme modelinin UHMWPE'nin 3-Nokta eğilme altındaki mekanik davranışını başarılı bir şekilde tahmin ettiğini ortaya çıkarmıştır. Bunun aksine Von Mises akma modelinin UHMWPE'nin 3-Nokta eğilme altındaki mekanik davranışını sonlu elemanlar çerçevesinde kabul edilebilir bir hata oranı ile doğru tahmin edemediği gözlemlenmiştir. En yüksek eğme kuvveti açısından Drucker-Prager model hata oranı %8 olarak hesaplanırken bu oran Von Mises modeli için %31 olarak bulunmuştur. Buradan Von Mises kriterinin çok eksenli yüklere maruz kalan polimerlerin mekanik davranışlarının nümerik analizlerinde kullanılmasının uygun olmadığı bunun yerine Drucker-Prager gibi basma ve çekme altındaki farklı davranışları hesaba katan malzeme modellerinin kullanılmasının çok daha uygun olduğu çıkarımı bu çalışma kapsamında yapılmıştır.

Anahtar Kelimeler: UHMWPE (ultra yüksek molekül ağırlıklı polietilen), 3-Nokta Eğilme, Sonlu Elemanlar Yöntemi, SAMP-1

UÇUCU KÜL VE KABAK LİFİ KATKILI BRİKET ÜRETİMİNİN ARAŞTIRILMASI

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ÖZET

Termik santrallerin bir yan ürünü olarak adlandırılan uçucu küller atık olarak santrallerde depolanma sorunu ve çevresel kirliliğine neden olmaktadır. Bu çalışmada uçucu külün çimento ikame malzemesi olarak kullanıldığı ve doğal kabak lifinin eklenmesi ile briket üretiminin gerçekleştirilmesi amaçlanmıştır. Çimento yerine %30 oranında uçucu kül, pomza agregası yerine %5-10-15 oranlarında doğal kabak lifleri eklenerek briket üretimi gerçekleştirilmiştir. Üretilen briket numuneleri üzerinde birim hacim ağırlık, basınç dayanımı deneyleri gerçekleştirilmiştir. Çalışma sonucunda uçucu kül ve doğal lif katkılı briket numunelerin üretilmesi ile literatüre katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Atık değerlendirme, uçucu kül, briket üretimi, lif katkısı

ABSTRACT

Fly ash, which is called a by-product of thermal power plants, causes storage problems and environmental pollution as waste. In this study, it was aimed to produce briquettes by using fly ash as a cement replacement material and adding natural pumpkin fiber. Briquettes were produced by adding 3% fly ash instead of cement, and 5-10-15% natural pumpkin fibers instead of pumice aggregate. Unit weight and compressive strength tests were carried out on the briquette samples produced. As a result of the study, it is thought that it will contribute to the literature by producing fly ash and natural fiber added briquette samples.

Keywords: Waste recycling, fly ash, briquette production, fiber additive

ATIK BİYOLOJİK ÇAMURLARIN MİKRODALGA İLE DEZENTEGRASYONU

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ÖZET

Çevre ve halk sağlığı, kentsel nitelikli atıksu arıtımından kaynaklanan biyolojik çamur nedeniyle ciddi tehlike altındadır. Anaerobik çürütme, biyolojik çamurları arıtmak için yaygın bir yöntem olmasına rağmen, ön arıtma olmadan düşük hacimde CH_4 üretir ve sınırlı biyolojik bozunma ve organik madde salınımına sahiptir. Mikrodalga (MD) ışıması gibi ısıl işlemler, atıksu biyolojik çamur parçalanmasını iyileştirmek için alternatif bir yöntem olarak tanımlanmaktadır.

Bu çalışmada, atık aktif çamurun MD ile parçalanmasında sıcaklığın ve bekletme süresinin etkisi incelenmiştir. Deneysel sonuçlar, çamurun çözünürlüğünün artan maruz kalma süresi ile kademeli olarak arttığını göstermiştir. Uzun maruz kalma süresinde, çKOI derişimlerinin uygulanan 90 °C ve 110 °C sıcaklıkları için sırasıyla 1800 mg/L ve 1900 mg/L olduğu belirlenmiştir. MD ışınına maruz kalma süresinin artmasıyla, hedef sıcaklıkta çKOI ve dezentegrasyon derecesinde iyileşme elde edilmiştir. Sonuçlar, MD ışınlamada 90°C ve 110°C hedef sıcaklıklarına göre 20 dakikalık bekletme süresinde çamur parçalanmasında önemli bir fark olmadığını göstermiştir. Deneysel sonuçlar, çalışılan tüm bekletme süreleri için 90 °C hedef sıcaklıkta, özgül enerji değerinin 110 °C'den daha düşük olduğunu göstermektedir.

Anahtar Kelimeler: Biyoçamur, Dezentegrasyon, Mikrodalga, Spesifik Enerji

DISINTEGRATION OF WASTE BIOLOGICAL SLUDGE WITH MICROWAVE

ABSTRACT

The environment and public health are seriously endangered by biosludge produced in the municipal wastewater treatment plant. Although anaerobic digestion is a widespread method for treating wastewater biosludge, without pretreatment it produces little CH_4 and has limited biodegradability and release of organic matter. Heat treatments such as microwave (MW)

irradiation has been described as an alternative method in order to improve wastewater biosludge degradation.
In this study, the effect of temperature and exposure time on the disintegration of waste activated sludge (WAS) in the MW process was investigated. The results showed that the solubility of sludge increased gradually with increasing exposure time. In the long exposure time, it was determined that the concentrations of sCOD were 1800 mg/L and 1900 mg/L for the applied temperatures of 90 °C and 110 °C, respectively. With the increase of MW irradiation time to the biosludge, better solubility of sCOD and DD was achieved. Results indicated that there is no significant difference in sludge disintegration at the exposure time of 20 minute at the target temperatures of 90°C and 110°C. It was observed that the specific energy value was lower than 110 °C in all exposure times studied at the target temperature of 90 °C.

Keywords: Biological Sludge, Disintegration, Microwave, Spesific Energy.

BİYOLOJİK DENİTRİFİKASYONA ARSENİK ETKİSİ

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ÖZET

Bazı ülkelerde, yeraltısuyu kaynaklarında nitrat ve arsenik derişiminin yüksek olduğu belirlenmiştir. Yapay veya doğal azot ve arsenik bileşik kaynakları, tarımsal gübreler, septik tank atıkları vb.'leridir. Nitrat ve arsenikle kirlenmiş suların arıtımı için deneysel çalışmalar yapılmaktadır. Bu deneysel çalışmada kesikli ünitelerde biyolojik nitrat giderimine arsenik etkisi araştırılmıştır. Deneyler, gelecekteki çalışmalarımız için ön veri elde etmek amacıyla planlanmıştır. Deneysel sonuçlar, çalışılan arsenik derişimlerinde, nitrat giderim hızının engellendiğini göstermektedir. Kesikli ünitelerde, reaksiyonun ilk gününde en yüksek NO_3^- giderme verimi % 60, şahit ünitede belirlenirken, en yüksek arsenik derişimi 5 mg/L için verim % 46,7 olarak gerçekleşmiştir. Ancak reaksiyon süresi sonunda, uygulanan arsenik derişimlerinde NO_3^- giderim verimi yaklaşık %99' a yaklaşmıştır. Reaksiyonun ilk gününde kısmi denitrifikasyon nedeniyle reaktörlerde NO_2^- birikimi gözlenmiş, ancak süreç sonunda NO_2^- derişimi azalmıştır.

Anahtar Kelimeler: Arsenik, Nitrat, Denitrifikasyon

ARSENIC EFFECT ON BIOLOGICAL DENITRIFICATION

ABSTRACT

In some countries, nitrate and arsenic concentrations in groundwater sources have been determined to be high. Artificial or natural sources of nitrogen and arsenic compounds include agricultural fertilizers, septic tank effluent etc. enter to the water body. Experimental studies are carried out for the treatment of nitrate and arsenic contaminated waters. In this experimental study, the effect of arsenic on biological nitrate removal in batch units was investigated. Experiment was planned to in order to obtain preliminary data for our future studies. Results indicated that the studied arsenic concentrations inhibited the nitrate removal rates. While the highest $NO3^-$ removal efficiency in the first day of operation was determined in the 60% blank unit, efficiency was 46.7% at the for the highest arsenic concentration of 5 mg/L. However, at the end of reaction period, NO_3^- removal efficiency was reached close to about 99% in the applied arsenic concentrations. Because of incomplete denitrification on the first day of the reaction, NO_2^- accumulation was observed in the reactors, but NO_2^- concentration decreased at the end of the process.

Keywords: Arsenic, Nitrate, Denitrification

NÖTRON DEDEKSİYONU İÇİN KULLANILAN BİR PARILDAYICIDAN ALFA PARÇACIK TESPİTİNDE YARARLANILMASI

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ÖZET

Bu çalışmada, hızlı nötronların dedeksiyonu ve ilgili ölçümleri için kullanılan Eljen marka EJ-428 model bir parıldayıcının (sintilatör) alfa parçacıklarının tespiti için de kullanılıp kullanılamayacağının bir araştırması yapılmıştır. Yapılan çalışmada gama radyasyonunun dedeksiyonu ve ölçümü için kullanılan bir çok pikselli foton sayacından (Multi pixel photon counter, MPPC) yararlanılmıştır. Bu cihaz yarı iletken bir dedektörden ibaret olup literatürde Si foto çoğaltıcı (SiPM) olarak da anılmaktadır. Bu cihaz, bir gama sayıcısı olduğundan dedektör penceresi önünde gama fotonlarının üretilmesi gereklidir. Bunun için de yukarıda söz edilen parıldayıcı malzeme kullanılmıştır. Bu parıldayıcı normalde nötron dedeksiyonu için kullanılmaktadır. Fakat bu çalışmada normal işlevinin dışında alfa parçacık tespiti için de kullanılabileceği gösterilmeye çalışılmıştır. Alfa parçacık kaynağı olarak nötron yerine alfa radyasyon üreteci ^{226}Ra radyoaktif kaynağı kullanılmıştır. Dedektör penceresi önüne parıldayıcı malzeme konulmuş, daha sonra alfa kaynağı var iken ve yok iken cihaz çalıştırılmış ve her iki durum için enerji spektrumları kaydedilmiştir. Bunu yapmak için de radyasyon tespit ve ölçüm modüllerinden oluşturulan bir devre oluşturulmuştur. Bu devrede bir nükleer zaman ölçüm yöntemi (sabit kesir ayırımı zaman ölçüm yöntemi) uygulanmış ve yukarıda söz edilen her iki durum için devreden elde edilen spektrum sonuçları karşılaştırılmıştır. Bu karşılaştırma sonucunda; parıldayıcı önünde alfa kaynağı var iken elde edilen spektrumdaki toplam sayım sayısının kaynak bulunmadığı zaman kaydedilen enerji spektrumundaki sayım sayısından daha fazla olduğu belirlenmiştir. Sonuç olarak, bir çok pikselli foton sayacı kullanılarak tasarlanan devre ve uygulanan yöntem vasıtasıyla nötron dedeksiyonu için kullanılan bir parıldayıcının alfa parçacık tespiti için de kullanılabileceği sonucuna varılmıştır. Böylece, bu çalışma vasıtasıyla EJ-428 parıldayıcı ve tasarlanan devre kullanılarak hem nötronların hem de alfa parçacıklarının deneysel olarak tespiti ve dedeksiyonu mümkün olabilmiştir.

Anahtar Kelimeler: EJ-428 nötron parıldayıcısı, alfa radyasyonu tespiti, çok pikselli foton sayacı.

SYNTHESIS, CHARACTERIZATION, SPECTROSCOPIC AND COLORIMETRIC SENSOR PROPERTIES OF SCHIFF BASE COMPOUND CONTAINING NAPHTHALENE AND CARBOXYL GROUPS

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Abstract

In this study, a new fluorescent Schiff base type containing naphthalene group was synthesized. Methods such as FTIR, ^{1}H-NMR, ^{13}C-NMR, UV-vis, and Photoluminescence spectroscopy were used to gather information about the molecular structure of the compound and its interaction with light. Emission variation of the synthesized Schiff base compound under three different light sources was investigated in three different solvent environments. In order to determine the colorimetric sensor property, solutions of the same concentrations of Al^{3+}, Mn^{2+}, Zn^{2+}, Co^{2+}, Pb^{2+}, Ni^{2+} Hg^{2+} and Cu^{2+} metal ions were added to the $1x10^{-3}$ M concentration solution of the compound. Color changes were observed at the end of the interaction. As a result of the interaction of the compound with the determined metal ions, it was observed that it did not interact with the Hg^{2+} ion under daylight, short and long wavelength light sources. It has been observed that the compound emits blue emission under the long and short wavelength light source in the presence of determined metal ions, except for the Hg^{2+} ion. In addition to this study, using the emission data of compound **A**, CIE factors were calculated, and it was concluded that it was in the blue region.

Keywords: Schiff base, Emission, Colorimetric sensor, CIE standards.

DESIGN AND DEVELOPMENT OF A ROBOTIC CHEST COMPRESSION SYSTEM

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Abstract

Thanks to rapid advancing technology, robotic systems are started to be integrated into medical fields, easing the workloads of health professionals by ensuring target tasks to be carried out in a more delicate and repeatable way. Automation of cardiopulmonary resuscitation (CPR) is one of the important topic in the field. In order to carry out repetitive chest compressions more homogeneously, various designs have been proposed along with scientific studies in literature including manual mechanical systems [1-8] and automatically actuated devices [9-15]. On the other hand the field is still open for further development to enhance these systems to be more modular, adaptable to multiple scenarios, and controllable by the addition of necessary sensory systems.

In light of this, current study proposes the structural design of a robotic system that will increase the efficiency of chest compression by providing support to professional healthcare personnel in emergency conditions. Proposed structure allows easy and quick placement and utilization of the system on the patients even with different physiological characteristics. Throughout the study motional constraints of the system were determined using anatomical and operational data found in related literature [16]. Following structural design, kinematic and dynamic analyses of the system were completed parametrically using classical kinematic and dynamic analysis methodologies. Dimentional constraints of the structure were designed with respect to the anatomical dimensions of an adult individual. After structural modelling in 3D (Figure 1), systems early prototype was manufactured for verification purposes.

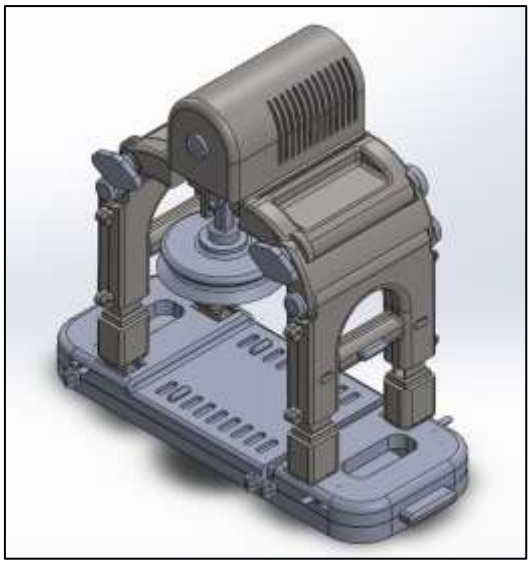

Figure 1: Three-Dimensional CAD Model of Chest Compression System

Keywords: Cardiac Arrest, Chest Compression, Automatic CPR, Medical Robotics, Mechatronics System Design

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SEISMIC EVALUATION OF EXISTING STEEL ELEVATED SILOS ACCORDING TO EUROCODE

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ABSTRACT

Steel elevated silos are non-building structures that contain granular material. They are used in a variety of industrial facilities. They could be made of concrete or metals such as steel. Steel silos are discussed in this paper. The steel elevated silos are made up of a steel wall, ring, hopper, and steel structure. Silos' walls are normally exposed to normal pressure and vertical frictional shear. They are called: filling and discharge. Significant damage occurred in the steel silos during previous earthquakes. Buckling of the tank wall, overturning, corrosion of the steel plates, and damage to the anchorage system are the most common failure modes., Silos' existing structural durability is debatable. Because most of the silos were constructed prior to the most recent seismic design code updates. Their seismic performance should ensure life safety while minimizing material loss. The material load calculation procedure of a steel silo with a cylindrical steel plate hopper is investigated in this study. It is a pre-existing cement silo with a capacity of approximately 1700 m^3. The steel structure performance-based design procedure is neglected, and this paper will only focus on steel metal sheet parts. Eurocode 8 and ASCE 7-16 are widely used structural design codes for silos. Eurocode was used for material and seismic parameters. The filling and discharge loads are calculated in accordance with Eurocode conditions. SAP 2000 finite element software was used to perform the calculations. The elevated steel silo's structural performance was evaluated using Von Mises stresses, story drifts, and buckling modes.

Key Words: Elevated Silo, Eurocode Seismic Design, Filling and Discharge Loads.

SEISMIC DESIGN PRINCIPLES COMPARISON OF EUROCODE 8 AND TBDY-18

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ABSTRACT

In recent decades, many moderate size earthquakes have occurred in Europe: Italy, Albania, Croatia, Greece etc. In those events, there were some casualties. Even though North Anatolian Fault have much possibility to produce stronger motions, there are several seismic-prone zones in Europe like Balkans. Thus, seismic design is crucial for European countries. Reinforced concrete buildings are the most common structures used in residential, public, infrastructure and industrial facilities. Their survival after a strong ground motion is vital. The most common damage types seen after events were story mechanisms, brittle collapses. In order to prevent these failures, ductility principals are very important for earthquake resistant buildings. In this paper, reinforced concrete structures are discussed. Rather than choosing multi-story building, single-story building is examined. The aim is only comparing the seismic design codes of Turkey and Europe. In the study, a concrete structure was designed according to Eurocode 8 and additionally the seismic design principals defined in Eurocode 8 were compared the ones in TBDY-18. In recent studies, the differences between codes in terms of non-linear analysis procedures have been investigated commonly. However, there are some absences in searching linear analysis terms. For this reason, this paper will only focus on linear analysis approaches. The conditions like spectrum, combination definitions, minimum reinforcement rules, response modification factors and importance classes are compared. In addition to this, nonlinear p-delta analysis was considered. SAP 2000 finite element software was used to perform the calculations. The structure was evaluated by using PMM ratios, story drifts, reinforcement ratios, and member stress limits.

Key Words: Reinforced Concrete Structure, Eurocode Seismic Design, TBDY-18 Seismic Design.

A NOVEL NONLINEAR CONTROL DESIGN FOR SHOOT-THE-MOON GAME TABLE

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ABSTRACT

Shoot-the-Moon Game Table attracts researchers' attention due to its interesting dynamical model. It consists of a ball Rolling between two rods and this structure brings a number of interesting dynamic behavior properties. Its model is nonlinear and also exhibits nonholonomic behavior. This study concerns a nonlinear position controller design for the Shoot-the-Moon Game Table. The controller aims to keep the position of the ball tracking a desired trajectory. Stability of the controller has been analyzed by using Lyapunov Stability Theory. Some future prospects, especially on the nonholonomic behavior of the system, have been also presented.

Keywords : Shoot-the-Moon Game Table, Nonlinear Control, Backstepping.

NONLINEAR BACKSTEPPING CONTROLLER DESIGN FOR A MEMRISTOR-BASED OSCILLATOR

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ABSTRACT

This study deals with the controller design for a memristor-based oscillator. This type of oscillators has a wide variety of industrial usage and also has a nonlinear dynamics. So a nonlinear exact model knowledge controller has been designed by using Backstepping design procedure based on the nonlinear state-space model of the system. Stability of the designed controller has been analyzed by using Lyapunov-type arguments. It is proved that the proposed nonlinear controller scheme globally stabilizes the system. Some future prospects have been also proposed in the paper.

Keywords : Memristor, Oscillators, Nonlinear Control, Backstepping.

A SIMPLE HARDWARE AND SOFTWARE COMBINATION FOR PRODUCING SWITCHING SIGNALS OF A THREE-PHASE INVERTER

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ABSTRACT

In many industrial applications, a 3-phase sinusoidal voltage signal at a desired frequency level is needed. The simplest way to produce this type of signal is to convert a DC signal at a DC bus to a 3-phase sinusoidal signal by using a certain type of 3-phase inverters. This type of inverter consists of many semiconductor transistors and producing the switching signals of the transistors in a proper fashion is one of the crucial steps for implementing the inverter. This study presents a simple and easy-to-implement hardware and software combination to produce switching signals of a 3-phase inverter. The inverter is specifically designed to drive an electromagnetic launcher but the proposed scheme can be used for general purposes. Experimental results of the proposed combination have been also provided.

Keywords: 3-phase inverters, Inverter design, Simulink.

KAYNATMA VE PRESLEME SÜRESİNİN YOĞUNLAŞTIRILMIŞ KAVAK (I-214 *Populus ×euramericana*) ODUNUNUN FİZİKSEL ÖZELLİKLERİ ÜZERİNE ETKİSİ

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ÖZET

Gün geçtikçe büyüyen orman ürünleri endüstrisi, odun hammaddesine ihtiyaç duymakta ve bu ihtiyaç sektörün büyümesiyle doğru orantılı olarak artmaktadır. Bu durum ülkemizde hammadde sıkıntısını beraberinde getirmektedir. Hammadde kaynaklarındaki azalma riskinden dolayı orman kaynaklarının verimli kullanılması ve sürdürülebilirliğinin arttırılması da günümüz önceliklerinden biridir. Bundan dolayı, ülkemizde doğal yayılış sergileyen ve hızlı büyüyen ağaç türlerinin sektörde kullanımının uygun hale getirilerek katma değerinin arttırılması, orman ürünleri endüstri sektöründe alternatif bir hammadde kaynağı oluşturacaktır. Bu çalışmada, ülkemizde doğal yayılış gösteren ve hızlı büyüyen ağaç türlerinden biri olan kavak ağacının sektörde tercih edilen diğer ağaç türlerine alternatif oluşturması için termo-mekanik yöntem ile çeşitli parametreler (kaynatma süresi, pres süresi ve sıkıştırma oranı) kullanılarak yoğunlaştırılması ve belirlenen parametrelerin ağacın fiziksel özellikleri üzerine etkisi araştırılmıştır. Çalışmada iki farklı kaynatma süresi (30 ve 60 dakika), iki farklı pres süresi (30 ve 60 dakika) ve iki farklı sıkıştırma oranı (%20 ve %40) olmak üzere toplam sekiz farklı deney grubu belirlenmiştir. Kavak odunundan hazırlanmış deney örnekleri, atmosferik basınç altında 100 °C kaynatma ön işlemine tabi tutulmuştur. Kaynatma işlemi yapılmış olan örnekler daha sonra hidrolik bir pres kullanılarak 140±5 °C sıcaklıkta 10 MPa basınç altında radyal yönde preslenerek yoğunlaştırılmıştır. Deney örneklerinin fiziksel özelliklerindeki değişimlerin belirlenmesi için geri esneme (spring-back) oranı, rutubet miktarı, yoğunluk, su alma oranı ve kalınlığına suda şişme oranı (24, 48 ve 96 saat) testleri gerçekleştirilmiştir. Elde edilen sonuçlara göre, genel olarak, en yüksek yoğunluk değerleri, %40 sıkıştırma oranı uygulanmış olan örneklerden, en düşük rutubet miktarı değerleri ise 60 dk pres süresi-60 dk kaynatma süresi-%20 sıkıştırma oranının uygulandığı örneklerden elde edilmiştir. Sonuçların istatistiksel analizi yapıldığında, tüm deney gruplarının işlem görmemiş örneklere göre fiziksel özellikler üzerinde %95 güven düzeyinde önemli derecede etkili olduğu sonucuna varılmıştır. Sıkıştırma oranları incelendiğinde de yine %40 sıkıştırma oranına sahip deney gruplarının %20 sıkıştırma oranına sahip deney gruplarına göre fiziksel özellikler üzerinde önemli derecede etkili olduğu bulunmuştur.

Anahtar Kelimeler : kavak, yoğunlaştırma, kaynatma, fiziksel özellikler.

METİLEN KLORÜR İLE EKSTRAKTE EDİLEN BİR ATIKSUYUN OZON İLE ARITIMI

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ÖZET

Yüksek KOI içeren atıksuların Metilen Klorür ekstraksiyon sonrasında ozon ile oksidasyonu çalışıldı. pH değişimi ve farklı ozon konsantrasyonlarında çıkış KOI değişimi araştırılmıştır. Yüksek giriş KOI konsantrasyonlarında ozon dozu yetersiz kaldığından çıkış konsantrasyonları yüksek bulunmuştur.

pH:9'da yapılan çalışmada KOI giderim verimi %38 bulunmuştur. Tüm giriş konsantrasyonlarında aynı ozonlama süresinde KOI değişimi incelenmiştir. pH nötral değerde KOI giderim veriminde, ozon konsantrasyonlarının yetersiz olması nedeniyle verim düşük bulunmuştur. Giriş KOI değeri 13.30 g ozon konsantrasyonunda 11690 mg/l'ye azalmıştır. pH:5'de KOI giderim veriminde artış tesbit edilmiştir. pH:5'de 13.33 g ozon dozunda çıkış KOI değeri 16250mg/l'den 6610 mg/l'ye azalmıştır(E=%59).pH değeri 3'e düşürüldüğünde verimde artış tesbit edilmiştir. Giriş KOI değeri 16 g ozon değerinde 4850 mg/l'ye azalmıştır. KOI giderim verimi yaklaşık olarak %65 dir. pH:1'e düşürüldüğünde artan ozon dozuna bağlı olarak çıkış KOI konsantrasyonunda doğrusal bir azalma görülmüştür. pH:1 değerinde ozon dozuna bağlı olarak çıkış KOI konsantrasyonu korelasyon katsayısı 0.95 bulunmuştur. En düşük pH değerinde çıkış KOI değeri 2670 mg/l'ye kadar azalmıştır(E=%71).

***Anahtar kelimeler*:** KOI, Metilen Klorür, Ozon

SCHIFF BAZ İÇEREN MOLİBDEN(IV) KOMPLEKSLERİNİN SENTEZİ, KARAKTERİZASYONU VE ANTİBAKTERİYAL ÖZELLİKLERİNİN BELİRLENMESİ

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ÖZET

İnorganik-organik hibrit malzemelerin tasarımı ve sentezi, ilgi çekici yapısal özelliklerinin yanı sıra kataliz, elektrik iletkenliği, manyetizma, optik ve tıp alanlarındaki kapsamlı teorik ve pratik uygulamaları nedeniyle büyük ilgi çekmektedir. İnorganik bileşik olan polioksometalatlar (POM'lar), ilk kez 1826'da amonyumfosfomolibdatın $(NH_4)_3[PMo_{12}O_{40}]$ Berzelius tarafından sentezlenmesi ile keşfedilmiştir. Fakat kristal yapısı 1934 yılında Keggin tarafından aydınlatılmıştır. Günümüze kadar POM kimyasının gelişmesi ile birkaç türe ayrılmışlardır. Keggin ($XM_{12}O_{40}^{n-}$), Wells-Dawson ($X_2M_{18}O_{62}^{n-}$), Dexter-Silverton ($XM_{12}O_{42}^{n-}$), Allman-Waugh ($XM_9O_{32}^{n-}$), Weakley-Yamase ($XM_{10}O_{36}^{n-}$), Standberg ($X_2M_5O_{21-23}^{n-}$) ve Lindqvist $(M_6O_{19})^{n-}$ tip polioksoanyonlar iyi karakterize edilmiş POM'ların yapı taşı olarak görev yaptığı çok sayıda bileşik rapor edilmiştir (X=Hetero atom, M=Metal iyonu, n=bileşiğin yükü). $(M_6O_{19})^{n-}$ (M = Mo, W, Nb, Ta) genel formülünün anyonları, polioksometalatların önemli bir alt grubu olan Lindqvist anyonlar olarak tanımlanır. Lindqvist izopolianyonlarındaki O atomları üç kategoriye ayrılır: terminal oksijen (Ot), köprü oksijen (Ob) ve merkezi oksijen (Oc) atomları. Altı geçiş metali iyonu ile koordine olan merkezi oksijen en fazla bazikliğe sahiptir, köprü ve terminal oksijen daha düşük bazikliğe sahiptir. Ancak $(M_6O_{19})^{n-}$'un protonasyonu köprü oksijende gerçekleşir, çünkü merkezi oksijen erişilebilir değildir.

POM'lar son zamanlarda çeşitli organik ligantlarla çok moleküllü diziler oluşturmak için inorganik yapı taşları olarak kullanılmakta ve hidrotermal veya standart yöntemlerle sentezlenebilmektedirler. Ancak Lindqvist $(M_6O_{19})^{n-}$ anyonunu içeren bileşikler hala oldukça yetersizdir. Bu yüzden çalışmada Schiff bazı içeren Lindqvist tip iki molibden (IV) kompleksinin sentezi gerçekleştirilmiştir. Elde edilen bileşikler elementel analiz ve çeşitli spektroskopik yöntemlerle (^{1}H NMR (Nükleer Manyetik Rezonans), FT-IR (Fourier Dönüşümlü Kızılötesi Spektroskopisi) ve TGA (Termogravimetrik Analiz)) karakterize edilmiştir. Yapısı aydınlatılan bileşiklerin antibakteriyel özellikleri disk difüzyon yöntemi kullanarak incelenmiştir. Gram (+) pozitif bakteri *Staphylococcus aureus*'a ATCC 25923, Gram (-) negatif bakteri *Escherichia coli*'ye ATCC 25922 karşı aktivite gösterdikleri belirlenmiştir.

Anahtar Kelimeler: Polioksometalat, Molibden, Lindqvist

SYNTHESIS, CHARACTERIZATION AND DETERMINATION OF ANTIBACTERIAL PROPERTIES OF SCHIFF BASE CONTAINING MOLYBDENUM(IV) COMPLEX

ABSRACT

The design and synthesis of inorganic-organic hybrid materials are of great interest due to their interesting structural properties as well as extensive theoretical and practical applications in the fields of catalysis, electrical conductivity, magnetism, optics and medicine. Polyoxometalates (POMs), which are inorganic compounds, were first discovered in 1826 with the synthesis of ammoniumphosphomolybdate $(NH_4)_3[PMo_{12}O_{40}]$ by Berzelius. But its crystal structure was elucidated by Keggin in 1934. With the development of POM chemistry until today, they have been divided into several types. Keggin ($XM_{12}O_{40}^{n-}$), Wells-Dawson ($X_2M_{18}O_{62}^{n-}$), Dexter-Silverton ($XM_{12}O_{42}^{n-}$), Allman-Waugh ($XM_9O_{32}^{n-}$), Weakley-Yamase ($XM_{10}O_{36}^{n-}$), Standberg ($X_2M_5O_{21-23}^{n-}$), and Lindqvist $(M_6O_{19})^{n-}$ (X=Hetero atom, M=Metal ion, n=charge of the compound). Numerous compounds have been reported in which n-type polyoxoanions serve as building blocks of well-characterized POMs. Anions of the general formula $(M_6O_{19})^{n-}$ (M = Mo, W, Nb, Ta) are identified as Lindqvist anions, an important subgroup of polyoxometalates. The O atoms in Lindqvist isopolyanions fall into three categories: terminal oxygen (Ot), bridging oxygen (Ob), and central oxygen (Oc) atoms. The central oxygen, which coordinates with the six transition metal ions, has the most basicity, while the bridge and terminal oxygen have the lower basicity. However, the protonation of $(M_6O_{19})^{n-}$ takes place in the bridging oxygen because the central oxygen is not accessible.

POMs have recently been used as inorganic building blocks to form multimolecular arrays with various organic ligands and can be synthesized by hydrothermal or standard methods. However, compounds containing Lindqvist $(M_6O_{19})^{n-}$ anion are still quite inadequate. Therefore, the synthesis of Lindqvist type two molybdenum (IV) complex containing Schiff base was carried out in this study. The obtained compounds were characterized by elemental analysis and various spectroscopic methods (^{1}H NMR (Nuclear Magnetic Resonance), FT-IR (Fourier Transform Infrared Spectroscopy) and TGA (Thermogravimetric Analysis)). The antibacterial properties of the compounds whose structures elucidated were investigated using the disk diffusion method. It was determined that they showed activity against Gram (+) bacteria *Staphylococcus aureus* ATCC 25923, Gram (-) negative bacteria *Escherichia coli* ATCC 25922.

Keywords: Polyoxometalate, Molybdenum, Lindqvist

STRUCTURE OF CRYSTAL OF DOUBLE SODIUM - MANGANESE (II) PYROPHOSPHATE

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ABSTRACT

Contemporary developments in science and technology require research and the use of new materials based on phosphate compounds. Double phosphates of alkali and 3D metals may exhibit a range of valuable physical and chemical properties. Phosphate compounds may possess catalytic, magnetic, electrophysical, non-linear optical properties and are used as monocrystals or polycrystlls, ceramics etc. The tailor-made synthesis of double phosphates of alkali and multivalent metals is the basis for the in-depth research and investigation of physical and chemical properties, composition and structure of the compounds to be used for the development of new materials. Many phosphate compounds with the structure of a well-known nonlinear optical crystal KTP and double polyphosphates are successfully used right now. Investigation of the properties of compounds as well as their synthesis and development of materials on their base are the areas of special scientific interest. Single crystals of $Na_2Mn_3(P_2O_7)_2$ compound have been first obtained during the examination of interaction in the Na_2O-P_2O_5-Mn_2O_3-NaF (10% wt.) system in the fluxes with Na_2O:P_2O_5 mole ratios ranging from 0.52 to 0.76 (saturated with manganese oxide (III) 25.0-32.0% wt.) at 960-880°C. Optimum conditions for the synthesis and growing of single crystals of $Na_2Mn_3(P_2O_7)_2$ compound have been determined. Complete X-ray diffraction analysis of the synthesized phosphate $Na_2Mn_3(P_2O_7)_2$ has been performed. According to its structure, the double phosphate $Na_2Mn_3(P_2O_7)_2$ belongs to the triclinic crystal system, spatial grid Pī; lattice parameters: a=5.359 Å, b=6.563 Å, c=16.299 Å, α=81.29°, β=82.70°, γ=72.44°, V=538.23 $Å^3$, Z=4, $c_{calc.}$= 3.447 g/cm^3. Structural features of synthesized phosphate have been determined. The structure

is composed of continuous chain of distorted octahedra [MnO_6] spacing along the direction *ob*. Diphosphate groups of tetrahedra [PO_4] divide the chains [MnO_6] and also run along *ob* direction. Pairwise linked pentagonal bipyramids of sodium divide the “units” of polyhedral of manganese_and phosphorus, filling the channels along *oy* axis. The crystalline structure of $Na_2Mn_3(P_2O_7)_2$ includes three nonequivalent, according to their crystallography, octahedra of manganese with slightly distorted form. The compound has been studied using X-ray structure analysis, X-ray phase analysis, DTA (differential thermal analysis), IR-spectroscopy techniques and complete chemical analysis.

Key words: double phosphates**;** IR-spectroscopy**;** X-ray structure analysis, X-ray phase analysis**;** growing of single crystals**;** flux crystallization of phosphate

THE MODERN PSYCHO-PEDAGOGICAL METHODS OF TRAINING IN HIGH SCHOOL

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ABSTRACT

The introduction of the achievements of psychological science into pedagogical practice is a real prerequisite for reforming higher education in Ukraine using the principles of humanitarianism, democracy and humanity in the educational process and in its focus on personal growth and professional development of a future specialist. A new type of specialist is characterized by a humanistic model, that is, a specialist who not only comprehensively and thoroughly mastered scientific knowledge in the chosen profession, but also has clear worldview guidelines, broad social thinking, a scientific vision of the overall picture of the global world, its problems and ways their decisions. The multifaceted training and education of a student not only as a specialist, but also as an individual, part of society and society requires not only a rethinking of the approach to existing teaching methods, but also their certain adjustments.

According to the Law of Ukraine "On Higher Education", the educational process at the university is carried out in the following forms: training sessions, independent work, practical training, module control. The main types of studies in higher education are: lectures, laboratory and practical work, seminars, individual lessons. Together, as well as in each individual case, these forms of classes are aimed at developing the potential of students. The traditional lecture has undoubted advantages not only as a way of delivering information, but also as a method of the teacher's emotional impact on the student, while increasing his cognitive activity. The lecture introduces students to a particular branch of scientific knowledge, introduces them to the main scientific and theoretical provisions, the methodology of this science, shows its relationship with other branches of knowledge. A special place is played in higher education by the introduction of a credit-modular learning system, which makes it possible to increase the efficiency of applying knowledge, contributes to the formation of professional and personal qualities of future specialists and is based on a combination of modular learning technologies and credited educational units (credits). This requires the student to perform a significant number of independent tasks. Great importance in the preparation is played by individual educational and research tasks, since, in fulfilling them, the student focuses on himself. The fulfillment of an individual educational and research task involves independent research work

of students aimed at a theoretical analysis of the problems associated with the subject of the training course. These works are deeply connected with significant psychological burdens on students and teachers and are topical psychological problems of higher education, the solution of which will help improve the quality of higher education, overcome the crisis in the educational and cultural sphere.

Today, the goal of education is to instill in young people confidence in the dynamics of knowledge, the formation of the ability to learn and relearn, to realize the need to develop their creative potential.Of particular importance in the content of higher education is the combination of advanced achievements of world experience and national culture, taking into account the prospects for European integration of Ukraine and its national interests.

Actual psychological problems of higher education are the following questions:

• the readiness of first-year students to study in higher education and the prerequisites for their successful psychological adaptation to the conditions of a higher educational institution;

• motivation of students' professional choice and education, their professional identification and self-determination;

• designing an individual trajectory of the professional development of each student, taking into account his individual psychological characteristics;

• formation of a positive "I-concept" as the core of the future specialist's personality, self-esteem and a high level of significance;

• rallying the student team and establishing effective student self-government;

• formation among students and teachers of civic consciousness and national identity, patriotic feelings and responsibility for the fate of the state, concern for the preservation and development of Ukrainian culture, the establishment of a Russian-speaking educational space;

• development of criteria, indicators and methods of psychological control over the process, the usefulness of the content and the conditions for the mental development of students, their personal growth and professional development;

• introduction of modern information technologies into the educational process, taking into account the psychological characteristics of the "human-computer" dialogue;

• deepening the psychological preparation of teachers, stimulating their scientific creativity, improving professionalism and pedagogical skills;

• establishing optimal pedagogical interaction "teacher-student", constructive solution of possible interpersonal conflicts;

• psychological help and support for all participants in the pedagogical process, especially during the period of a normative crisis of identity and psychological adaptation.

The famous Ukrainian researcher S.V.Goncharenko notes that it is especially important for education in higher education to maximize the development of students' skills to independently apply the basic principles and laws in human practical activity and see the effect of these principles in new discoveries and technological achievements.

Independent work is the goal of the developmental education system, as it serves as a sign of the formed educational and professional activity of the student, without which the development of the personality becomes impossible, as well as the independent solution of professional situations. However, the process of implementing independent work in the system of modern higher professional education is very complicated. Thus, a survey conducted among students

showed that almost a third of first-year students have difficulties associated with the lack of independent work skills, as well as independent search for material. At the same time, about 22% of students do not have enough time to complete the given task in independent work. In our opinion, the solution to this issue can be found in strengthening the internal motivation of students regarding their own independent work. In the junior years of study, the priority areas of independent work should be those types of tasks, the main direction of which is to consolidate the acquired theoretical knowledge, their practical application in the performance of educational tasks.

Ukrainian teachers are trying to approach the reform of all components of higher education systems in the state, to develop a new formulation of the model of education and the model of upbringing [4, 5].The purpose of such a model is to provide the student with a certain system of knowledge in the form of skills and abilities, the ability to introspection, creativity, spreading the horizons, self-learning, etc. As a rule, every young teacher, inheriting the pedagogical developments of the past, tries to bring his own, individual vision of educational processes and education generally. In this, he comes to the aid of the developed pedagogical research of the following methods:

• pedagogical observation, interview, pedagogical experiment, psychological and pedagogical testing, sociological methods (questionnaire, rating, generalization of independent characteristics, sociometry);

• mathematical methods (registration, statistical methods, measurement method);

• theoretical methods (analysis, synthesis, generalization, comparison, conclusions, modeling, induction, deduction, comparative historical analysis).

The use of all these modern pedagogical technologies, based on the use of the latest information technologies, take into account age and individual characteristics, especially during the training of foreign students and are actively introduced into practice. This is a technique for conducting business games, discussions, using specific professional situations, which also includes a method for assessing one's own. The use of one or more methods aims to obtain reliable data on pedagogical reality. The forms of work that are proposed create a dialogic space in which the realization of the positive natural and social potential of students takes place, thanks to the initiation and support by teachers of active forms of self-knowledge and self-development. Pedagogical science is enriched with a new direction - media pedagogy, which, logically, should consist of media education, media education and media training and be served by appropriate technologies. Now in different countries, in particular in France, Germany, Canada, Israel, media pedagogy and media education are rapidly developing. Based on modern educational experience, it is obvious that the educational system of Ukraine needs a specialty "media teacher". The structure of practical classes should include interactive technologies, that is, specific methods that will make the practical lesson interesting and meaningful.

Key words: psychology, education, pedagogy, professional thinking, method, media-pedagogy.

Van Pomzası Üzerine Safranin Boyar Maddesinin Adsorpsiyonunun İzoterm ve Termodinamik Çalışması

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Özet

Bu çalışmada canlılar açısından zararlı bir etkiye sahip olduğu bilinen safranin boyar maddesinin atık sulardan uzaklaştırılması amacıyla Van Gölü kıyısından toplanan pomza taşları kullanılmıştır. Çalışma sırasında adsorbent miktarı, pH ve derişimin adsorpsiyon üzerindeki etkinliği araştırılmış ve 318 K sıcaklık ve 30 ppm derişimde 1 g Van pomzası ile pH 7 ortamda safranin boyar maddesinden % 79,96 giderim elde edilmiştir. Sabit tutulan zaman altında, konsantrasyon ve sıcaklık arasındaki ilişkiyi belirleyen izoterm çalışmaları sonucunda adsorpsiyon işleminin Langmuir izoterm modeli ile iyi uyum sağladığı görüldü. Langmuir izotermi sırasında hesaplanan Qm değerleri 298 K, 308 K ve 318 K sıcaklıklarda sırasıyla 69,8072 mg/g, 92,0298 mg/g ve 127,6140 mg/g olarak hesaplandı. Bu durum çalışma sırasında tutunmanın tek tabakalı bir şekilde ve homojen bir yüzeyde meydana geldiğini gösterdi. Son olarak D-R izoterm modelinde hesaplanan E değerlerinin sırasıyla 0,2168 kj/mol, 0,2428 kj/mol, ve 0,2453 kj/mol olarak hesaplanması tutunmanın fiziksel olduğunu gösterdi. Termodinamik hesaplamalar neticesinde hesaplanan Gibbs serbest enerji değerlerinin sıfırdan küçük çıkması bizlere çalışmamızın istemli meydana geldiğini gösterdi.

Anahtar kelimeler: Adsorpsiyon, izoterm, safranin boyar maddesi, pomza

Isotherm And Thermodynamic Study Of The Adsorption Of Safranin Dyestuff On Van Pumice

Abstract

In this study, pumice stones collected from the shore of Lake Van were used in order to remove the saffron dyestuff, which is known to have a harmful effect on living things, from wastewater. During the study, the effectiveness of adsorbent amount, pH and concentration on adsorption was investigated and 79.96% removal of the safranin dyestuff was obtained with 1 g Van pumice at 318 K temperature and 30 ppm concentration in pH 7 environment. As a result of the isotherm studies that determined the relationship between concentration and temperature under

a fixed time, it was seen that the adsorption process was in good agreement with the Langmuir isotherm model. The Qm values calculated during the Langmuir isotherm were calculated as 69.8072 mg/g, 92.0298 mg/g and 127.6140 mg/g at 298 K, 308 K and 318 K temperatures, respectively. This showed that the adhesion occurred in a single layer and on a homogeneous surface during the study. Finally, the E values calculated in the D-R isotherm model as 0.2168 kj/mol, 0.2428 kj/mol, and 0.2453 kj/mol, respectively, showed that the adhesion was physical. The fact that the Gibbs free energy values calculated as a result of thermodynamic calculations were less than zero showed us that our work was spontaneously.

Keywords: Adsorption, isotherm, saffron dyestuff, pumice

SİVAS EKOLOJİK KOŞULLARINDA BAZI YEŞİL MERCİMEK ÇEŞİTLERİNİN TARIMSAL ÖZELLİKLERİNİN BELİRLENMESİ

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ÖZET

Sivas ekolojik koşullarında bazı mercimek çeşitlerinin tarımsal parametrelerinin ortaya konulması amacıyla 2022 yılında Sivas Bilim ve Teknoloji Üniversitesine ait araştırma deneme arazisinde mercimek vejetasyon döneminde tesadüf blokları deneme deseninde üç tekrarlamalı olarak yürütülen çalışmada 9 adet tescilli mercimek çeşidi (Sultan, Meyveci 2001, Pul 11, Ceren, Gümrah, Yusufhan, Bozok, Karagül ve Ankara Yeşili) kullanılmıştır. Yürütülen araştırmada agronomik özellikler olan bitki boyu (cm), ilk bakla yüksekliği (cm), bitkide bakla sayısı (adet/bitki), bitkide tane sayısı (adet/bitki), yüz tane ağırlığı (g), bitki başına tane verimi (g/bitki), biyolojik verim (g) ve dekara tane verimi (kg/da) özellikleri incelenmiştir. Araştırma sonucunda mercimek çeşitlerinin 92.30-141.90 kg/da arasında dekara tane verimine sahip oldukları belirlenmiş olup en yüksek dekara tane verimi Sultan mercimek çeşidinden elde edilirken en düşük dekara tane verimi ise Ankara Yeşili mercimek çeşidinde ortaya konulmuştur. Tüm mercimek çeşitlerinin ortalama dekara tane verim değerlerinin ise 121.43 kg/da oldukları görülmüştür. Bunun yanında mercimek çeşitlerine bağlı olarak bitki boylarının 25.54 (Ankara Yeşili)-31.35 (Yusufhan) cm, ilk bakla yüksekliklerinin 18.70 (Ankara Yeşili)-22.60 (Yusufhan) cm, bitkide bakla sayılarının 6.30 (Karagül)-14.20 (Sultan) adet, bitkide tane sayılarının 7.20 (Karagül)-18.90 (Sultan) adet, yüz tane ağırlıklarının 2.803 (Sultan)-3.105 Yusufhan) g ve bitki başına tane verimlerinin ise 0.22 (Ankara Yeşili)-0.52 (Sultan) g değerlerine sahip oldukları görülmüştür.

Sonuç olarak; Sultan, Meyveci 2001 ve Yusufhan mercimek çeşitlerine ait verim öğelerinin performanslarının diğer çeşitlere nazaran daha yüksek oldukları görülmüştür.

Anahtar Kelimeler: Sivas, Mercimek, Çeşit, Verim, Verim Öğeleri

SİVAS EKOLOJİK KOŞULLARINDA BAZI NOHUT ÇEŞİTLERİNİN TARIMSAL ÖZELLİKLERİNİN ORTAYA KONULMASI

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ÖZET

Sivas ekolojik koşullarında bazı nohut çeşitlerinin tarımsal özelliklerinin ortaya konulması amacıyla 2022 yılında Sivas Bilim ve Teknoloji Üniversitesine ait AR-GE deneme arazisinde nohut vejetasyon döneminde tesadüf blokları deneme deseninde üç tekrarlamalı olarak yürütülen çalışmada 11 adet tescilli nohut çeşidi (Sezenbey, Ilgaz, Çağatay, Yaşa-05, Zuhal, Azkan, İnci, Akça, Aksu, Hasanbey ve Seçkin) kullanılmıştır. Yürütülen çalışmada agronomik özellikler olan bitki boyu (cm), ilk bakla yüksekliği (cm), bitkide bakla sayısı (adet), bitkide tane sayısı (adet), yüz tane ağırlığı (g), bitkide tane verimi (g), biyolojik verim (g) ve dekara tane verimi (kg/da) olmak üzere 8 adet agronomik özellik incelenmiştir. Çalışma sonucunda nohut çeşitlerinin 48.29-83.41 kg arasında dekara tane verimine sahip oldukları belirlenmiş olup en yüksek dekara tane verimi Sezenbey nohut çeşidinden elde edilirken, Seçkin nohut çeşidinde ise en düşük dekara tane verimi ortaya konulmakla birlikte tüm nohut çeşitlerinin ortalama dekara tane verim değerlerinin ise 60.83 kg/da oldukları görülmüştür. Bunun yanında nohut çeşitlerine bağlı olarak bitki boylarının 27.62 (Zuhal)-35.28 (Çağatay) cm, ilk bakla yüksekliklerinin 11.68 (Zuhal)-24.14 (Azkan) cm, bitkide bakla sayılarının 12.25 (Hasanbey)-22.41 (Çağatay) adet, bitkide tane sayılarının 11.05 (Hasanbey)-17.17 (Çağatay) adet, yüz tane ağırlıklarının 37.41 (İnci)-54.12 (Ilgaz) g ve bitki başına tane verimlerinin ise 2.58 (Aksu)-8.62 (Çağatay) g değerlerine sahip oldukları görülmüştür.

Sonuç olarak; Sezenbey, Çağatay, Ilgaz ve Zuhal çeşitlerine ait verim öğelerinin performanslarının diğer çeşitlere nazaran daha yüksek oldukları belirlenmiştir.

Anahtar Kelimeler: Sivas, Nohut, Çeşit, Verim, Verim Öğeleri

SULFAMETHAZİNE AFFECT BEHAVİORAL ACTİVİTY (LOCOMOTOR ACTİVİTY): ZEBRAFİSH LARVAL MODEL

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ABSTRACT

Sulfamethazine (SMZ) is drugs used to treat diseases in humans and animals as antibiotics. However, their widespread use as growth promoters in aquaculture shows that these drugs can threaten non-target organisms. In our study, malformation rate and behavioral changes were determined for zebrafish embryos and larvae at 20 and 1000 ppm SMZ concentrations in the range of 4-96 hpf. 14.4% of total malformation was determined in the highest application (1000 ppm) groups in embryos and larvae. Behavioral analyzes were performed to evaluate the change in locomotor activities of zebrafish larvae exposed to 96 hours of SMZ exposure. When the results were analyzed, no change was observed in the total distance traveled in the 20 ppm application group compared to the control group, while a statistically significant decrease was observed, especially in the 1000 ppm group. In our study, when the effect of SMZ exposure on zebrafish larval behavior was examined, it was determined that the total distance decreased at all exposed doses. These observations can be attributed to the lack of coordination between the nervous system and muscle connections of SMZ exposure. There is also some evidence to suggest that energy (ATP) deficiencies in zebrafish larvae are associated with changes in movement performance. The vulnerability of neurons due to their metabolic activities and energy requirements may cause deterioration in the locomotor activities of animals. The suppression of spontaneous motor activity by SMZ may be a reason for the decrease in locomotor movement of animals. In our study, it was determined that exposure to high doses of the antibiotic SMZ may have serious effects on the behavior of toxic effects on the developmental processes of aquatic organisms.

Keywords: Zebrafish larva, Locomotor activity, Sulfamethazine

TERMAL SULAR VE BALNEOLOJİ

THERMAL WATER AND BALANEOLOGY

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ÖZET

Jeotermal enerji, toprakta, kayaçlarda ve rift havzalarında biriken, Dünya'nın çekirdeğinden gelen doğal bir enerjidir. Birçok alanda farklı şekillerde kullanılmaktadır. Bunlardan biri termal sulardan elde edilen ısının doğrudan balneolojik ve tedavi edici amaçlarla kullanılmasıdır. Balneoloji terimi, kaplıca tıbbının yeraltı sularının özelliklerini ve bunların tedavi ve rekreasyon alanındaki kullanımlarını inceleyen en eski dallarından birini ifade eder.

Jeotermal enerji, temiz ve yenilenebilir bir enerji kaynağı olup, tüm dünyada binlerce yıldır kullanılmaktadır. Mevcut kaynaklara ve mevcut teknolojilere bağlı olarak, bu tür enerjiler farklı amaçlar için farklı şekillerde kullanılmaktadır. Bu kullanım çeşitliliği, jeotermal sistemlerin jeolojik konumlarına, oluşum yöntemlerine, ısı transfer mekanizmalarına ve bulunuşlarına göre farklı şekillerde sınıflandırılır. Jeotermal sistemler sadece jeotermal enerjiyi oluşturan teknolojik sistemler değil aynı zamanda ısı depolarıdır. Bu nedenle jeotermal sistemlerin tanımı, jeotermal sistemlerin jeofizik ve jeokimyasal özellikleri, ısı transferi, bölgesel ısı akışı, jeotermal anomaliler, jeotermal sistemlerin matematiksel modellemesi, jeotermal rezervuarlardan ısı elde edilmesi ve çevresel yönleri gibi konuları kapsamaktadır.

Jeoermal sular olarak da adlandırılan jeotermal sular, mineral içeriği düşük ve sıcaklığı 20°C olan yeraltı sularıdır. Balneolojide suların sınıflandırılması, insan vücudunun sıcaklığıyla karşılaştırılmasına dayanır. Bu karşılaştırmaların sonucu, suların sıcaklığı 20–35°C arasında değişen hipotermal, 35–40°C arasında değişen izotermal ve 40°C'nin üzerindeki sıcaklıkta hipertermal olarak bölünmesidir.

Kaplıca tıbbi, hastalıkları iyileştirmek için birçok yöntem ve tedavide kullanır. Kaplıcalar, balneoterapi, hidroterapi, turba, şifalı bitkiler, sıcak veya soğuk sular ile masaj içeren tedaviler sunar. Balneolojide kaplıcalar en popüler ve beğenilen tedavilerdir. Sudaki bu mineraller hastanın derisi tarafından emilir. Balneolojik olarak tedavi edilen hastalıklar için kullanılan sular, Sodyum klorürlü, Kükürtlü, Karbonik asitli ve Radon'lu olmak üzere dörde ayrılır.

Anahtar Kelimeler: Jeoermal sular, balneoloji, çevre

ABSTRACT

Geothermal energy is a natural energy from the Earth's core that accumulates in soil, rocks and rift basins. It is used in different ways in many fields. One of them is the direct use of heat obtained from thermal waters for balneological and therapeutic purposes. The term balneology refers to one of the oldest branches of spa medicine that studies the properties of groundwater and their use in treatment and recreation.

Geothermal energy is a clean and renewable energy source and has been used all over the world for thousands of years. Depending on available resources and available technologies, such energies are used in different ways for different purposes. This variety of uses is classified in different ways according to the geological locations, formation methods, heat transfer mechanisms and presence of geothermal systems. Geothermal systems are not only technological systems that create geothermal energy, but also heat stores. Therefore, the definition of geothermal systems covers topics such as geophysical and geochemical properties of geothermal systems, heat transfer, regional heat flow, geothermal anomalies, mathematical modeling of geothermal systems, obtaining heat from geothermal reservoirs and environmental aspects.

Geothermal waters, also called thermal waters, are underground waters with a low mineral content and a temperature of 20°C. Classification of waters in balneology is based on comparison with the temperature of the human body. The result of these comparisons is the division of waters into hypothermal with a temperature of 20–35 °C, isothermal at a temperature of 35–40 °C, and hyperthermal at a temperature above 40 °C.

Spa medicine uses many methods and treatments to cure diseases. The spas offer treatments that include balneotherapy, hydrotherapy, peat, herbs, hot or cold waters and massage. In balneology, spas are the most popular and admired treatments. These minerals in the water are absorbed by the patient's skin. The waters used for balneologically treated diseases are divided into four as sodium chloride, sulfur, carbonic acid and radon.

Keywords: Geothermal waters, balneology, environment

ÇEVRE KİRLİLİĞİNİN JEOLOJİ İLE İLİŞKİSİ

THE RELATIONSHIP OF ENVIRONMENTAL POLLUTION AND GEOLOGY

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ÖZET

Dünya nüfusunun hızla artması, kentleşme ve sanayileşme çevre kirliliğini de beraberinde getirmektedir. Çevre kirliliğine insan kaynaklı (antropojenik) kaynakların sebep olduğu bilinmekle birlikte, son yıllarda yapılan çalışmalar bu kirliliğin jeolojik kaynaklı olduğunu göstermiştir. İnsanoğlunun yeraltı kaynaklarına olan gereksinimi kaçınılmazdır. Ancak maden üretimi sonrasında çok sayıda ekonomik değeri yüksek hammadde yanında, atıklar da ortaya çıkmaktadır. Maden yatakları çok büyük ekonomik özelliğe sahiptir, ancak su, hava ve toprak kaynaklarının bozulması ve ekolojik peyzaj tahribatı gibi faktörler jeolojik olarak çevresel problemlere yol açmaktadır. Özellikle kömür madeni sahalarında bu duruma çok sık rastlandığı bilinmektedir. Kömür tozları, yağmur ile karıştığında çevre kirliliğini oluşturacaktır. Özellikle rüzgarlı havalarda kömür yatakları üzerindeki toz tanecikleri şişerek havada asılı kalır ve bu da havayı kirletir. Bu tozlar, gang mineralleri, civa, krom, kadmiyum, bakır, arsenik ve diğer zararlı element parçacıklarını içermektedir. Solunması halinde akciğerlerde bronşit, amfizem (akciğer hastalığı), pnömokonyoz (akciğerlerde inorganik tozların birikmesi) ve diğer hastalıklara yol açmaktadır ve daha ciddisi kansere neden olmaktadır.

Dağ yamaçlarında yapılan madencilik faaliyetleri heyelanlara sebep olabilir. Ayrıca, yeraltı madenciliği de yüzeyde çatlaklara oluşturabilir. Heyelanlar ile yüzey çatlakları birlikte bölgede yaşayan halkın güvenliğini tehdit edecek boyutlara ulaşabilir.

Madencilik sahalarında kullanılan patlayıcılar yıkıcı tahribatlara neden olabilmektedir. Maden kazıları ile yer şekillerindeki bozulmalar, jeoloji ve hidrolojinin yanısıra, arazinin drenaj sistemi ve su temin sisteminde hasara yol açan çökmelerle de tahribata katkıda bulunmaktadır. Böylece, toprak verimliliği azalmakta, toprak stabilizasyonu, çölleşme, su ve toprak erozyonu giderek daha da kötü hale gelmektedir. Maden sahalarındaki atık yığınları çok büyük alanlar kaplamaktadır. Bu bildirinin amacı, çevre kirliliğinin jeoloji ile ilişkisinin araştırılması ve madenciliğin ekolojik tehlikelerinin ortadan kaldırılmasına yönelik ne gibi çalışmaların yapılacağının belirlenmesidir.

Anahtar Kelimeler: Çevre, kirlilik, jeoloji.

ABSTRACT

The rapid increase in the world population, urbanization and industrialization bring environmental pollution. Although it is known that environmental pollution is caused by human origin (anthropogenic) sources, recent studies have shown that this pollution is of geological origin. Mankind's need for underground resources is inevitable. However, after the mine production, besides a large number of raw materials with high economic value, wastes are also generated. Mineral deposits have great economic features, but factors such as deterioration of water, air and soil resources and ecological landscape destruction cause geological environmental problems. It is known that this situation is very common especially in coal mine fields. Coal dust will create environmental pollution when mixed with rain. Particularly in windy weather, the dust particles on the coal beds swell and hang in the air, which pollutes the air. These dusts contain particles of gangue minerals, mercury, chromium, cadmium, copper, arsenic and other harmful elements. If inhaled, it causes bronchitis, emphysema (lung disease), pneumoconiosis (accumulation of inorganic dusts in the lungs) and other diseases in the lungs, and more seriously, it causes cancer.

Mining activities on mountain slopes can cause landslides. Additionally, underground mining can also create cracks on the surface. Landslides and surface cracks can reach dimensions that threaten the safety of the people living in the region.

Explosives used in mining sites can cause devastating damage. Mining excavations and landforms also contribute to the destruction of geology and hydrology, as well as collapses that cause damage to the land's drainage system and water supply system. Thus, soil fertility decreases, soil stabilization, desertification, water and soil erosion are getting worse. Waste piles at mining sites cover very large areas. The aim of this paper is to investigate the relationship between environmental pollution and geology and to determine what kind of work will be done to eliminate the ecological dangers of mining.

Keywords: Environment, pollution, geology.

ERZİNCAN İLİNDEKİ KAFKAS (Apis mellifera caucasia) ve ANADOLU (Apis mellifera anatoliaca) IRKI ANA ARILARININ KALİTELERİ ÜZERİNE FARKLI YETİŞTİRME YÖNTEMLERİ (Larva Transferi, Anasız Bırakma) ve MEVSİMİN ETKİLERİ

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ÖZET

Bu çalışmada, Erzincan ilinde yetiştirilen Kafkas (Apis mellifera caucasia) ve Anadolu (Apis mellifera anatoliaca) ırkı ana arılarının kaliteleri üzerine larva transferi ve anasız bırakma gibi farklı yetiştirme yöntemleri ile mevsimin etkilerinin belirlenmesi amaçlanmıştır. Bu amaçla 2022 yılında üç farklı mevsimde (ilkbahar, yaz, sonbahar), iki farklı ırktan iki farklı yöntem ile toplamda 175 adet ana arı üretilmiştir. Ana arılarda kalite özellikleri olarak kabul edilen çıkış ağırlığı, yumurtlama ağırlığı, yumurtlama süresi, spermateka kesesi çapı, spermateka kesesi hacmi ve spermatozoon sayısı değerlendirilmiştir. Elde edilen veriler sonucunda ilkbahar, yaz ve sonbahar mevsimlerine göre sırasıyla ortalama çıkış ağırlığı (mg); 180.85±1.60, 177.66±1.72, 165.19±1.80, yumurtlama ağırlığı (mg); 193.67±1.64, 189.96±1.85, 175.86±2.03, yumurtlama süresi (gün); 9.67±0.164, 10.31±0.185, 11.11±0.202, spermateka kesesi çapı (mm); 1.104±0.010, 1.084±0.011, 0.990±0.012, spermateka kesesi hacmi (mm^3); 0.715±0.101, 0.681±0.020, 0.514±0.022, spermatozoon sayısı ($x10^6$ adet); 4.45±0.194, 4.17±0.219, 3.29±0.240 olarak tespit edilmiştir. Bu çalışmadan elde edilen istatistik analizleri sonucunda ana arı kalite özellikleri üzerine ırkın ve üretim yönteminin etkisi bulunmaz iken, mevsimin etkisi tüm özellikler bakımından anlamlı ($P<0.001$) bulunmuştur. Kaliteli ana arı üretimi için en uygun mevsimin ilkbahar dönemi olduğu belirlenmiştir. Kaliteli bir ana arıda çıkış ağırlığın 200 mg ve üzeri, yumurtlama ağırlığının 220 mg ve üzeri, yumurtlama süresinin 9 gün ve altında, spermateka kesesi çapının 1.2 mm ve üzeri, spermateka kesesi hacminin 0.90 mm^3 ve üzeri, spermatekada depolanan spermatozoon sayısının 5 milyon ve üzeri olması istenmektedir. Bu çalışmada elde edilen değerler ana arı kalite özellikleri bakımından standartlarının altında tespit edilmiştir.

Anahtar Kelimeler: Erzincan, ana arı, kalite, yetiştirme yöntemleri, mevsim.

Carica papaya L. Meyvesi Toplam Fenolik İçeriği ve Antioksidan Aktivitesine Ekzokarp Tabakanın Etkisinin Belirlenmesi[1]

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ÖZET

İlaç ve kozmetik gibi birçok alanda doğal bitkilere olan ilgi gün geçtikçe artmaktadır. Anavatanı Orta ve Güney Amerika olan *Carica papaya L.* (Papaya) bitkisi, ülkemizde de Akdeniz Bölgesi'nde (Gazipaşa, Alanya, Anamur ve Silifke) yetiştirilmektedir. Yüksek besin değeri olduğu bilinen *C. papaya L.* bitkisinin, antimikrobiyal, antihelmintik, antifungal, hepatoprotektif ve diüretik gibi çeşitli farmakolojik etkiler oluşturması nedeni ile biyomedikal alanda dikkat çekmektedir.

Bu çalışmada Türkiye'de Mersin Anamur'da yetiştirilen *Carica papaya L.* bitkisi meyve kısmının, toplam fenolik ve antioksidan aktivitesinin incelenmesi amacıyla taze Papaya meyveleri kabuklu ve kabuksuz olmak üzere iki gruba ayrılmıştır. Papaya meyvesi kabuklu ve kabuksuz olarak parçalandıktan sonra metanol ile muamele edilerek ekstrakt elde edilmiş, ardından ekstraktlar liyofilize edilmiştir. Antioksidan aktiviteleri serbest radikal giderme aktivitesi ($DPPH^{\bullet}$), yöntemiyle değerlendirilmiştir. Analiz sonucuna göre EC_{50} DPPH Süpürücü etki; kabuklu meyve ekstresi için 6,4±0,6 mg/ml iken kabuksuz meyve ekstresi için 7,4±0,7 mg/ml hesaplanarak; kabuklu meyve ekstraktının, kabuksuz meyve ekstraktına göre daha yüksek antioksidan derişimine sahip olduğu belirlenmiştir. Meyve ekstraktının toplam fenolik madde miktarını belirlemede Folin-Ciocalteu yöntemi kullanılmıştır. Analiz sonuçlarına göre toplam fenolik madde miktarı kabuklu meyve ekstresi için 1,54±0,31 mg GAE/g kuru madde iken kabuksuz meyve ekstresi için 0,28±0,16 mgGAE/g kuru madde olarak hesaplanmıştır. Sonuçlara göre, meyve fenolik içeriğinin ekzokarp tabakada yoğunlaştığı belirlenmiştir. Yapısında bulunan sekonder metabolitlerin tanımlanması HPLC metodu ile gerçekleştirilmiştir.

C. papaya L. meyvesi kabuklu ve kabuksuz ekstrelerinin yapılarının aydınlatılması ile ilgili in-vitro çalışmalarımız devam etmektedir. Ayrıca meyvenin hasat sonrası saklama koşullarının belirli sekonder metobolit içerikleri arasındaki korelasyona önemli derecede etki ettiği düşünülmektedir.

Anahtar Kelimeler: *Carica Papaya L.*, ekzokarp tabaka, antioksidan aktivite, fenolik içerik

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Risk Assessment Results in Biogas Production from Agriculture Biomass

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Abstract:

The use of renewable energy sources incl. biogas has become topical in accordance with the increasing demand for energy, decrease of fossil energy resources and the efforts to reduce greenhouse gas emissions as well as to increase energy independence from the territories where fossil energy resources are available.

As the technologies of biogas production from agricultural biomass develop, risk assessment and risk management become necessary for farms producing such a renewable energy. The need for risk assessments has become particularly topical when discussions on changing the biogas policy in the EU take place, which may influence the development of the sector in the future, as well as the operation of existing biogas facilities and their income level.

The current article describes results of the risk assessment for farms producing biomass from agriculture biomass in Latvia, the risk assessment system included 24 risks, that affect the whole biogas production process and the obtained results showed the high significance of political and production risks.

Keywords: Biogas production, risks, risk assessment.

ICAM-2, A Protein of Antitumor Immune Response in Mekong Giant Catfish (Pangasianodon gigas)

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Abstract:

ICAM-2 (intercellular adhesion molecule 2) or CD102 (Cluster of Differentiation 102) is type I transmembrane glycoproteins, composing 2-9 immunoglobulin-like C2-type domains. ICAM-2 plays the particular role in immune response and cell surveillance. It is concerned in innate and specific immunity, cell survival signal, apoptosis, and anticancer. EST clone of ICAM-2, from *P. gigas* blood cell EST libraries, showed high identity to human ICAM-2 (92%) with conserve region of ICAM N-terminal domain and part of Ig superfamily. Gene and protein of ICAM-2 has been founded in mammals. This is the first report of ICAM-2 in fish

Keywords: ICAM-2, CD102, Pangasianodon gigas, antitumor.

FT-NIR Method to Determine Moisture in Gluten Free Rice Based Pasta during Drying

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Abstract:

Pasta is one of the most widely consumed food products around the world. Rapid determination of the moisture content in pasta will assist food processors to provide online quality control of pasta during large scale production. Rapid Fourier transform near-infrared method (FT-NIR) was developed for determining moisture content in pasta. A calibration set of 150 samples, a validation set of 30 samples and a prediction set of 25 samples of pasta were used. The diffuse reflection spectra of different types of pastas were measured by FT-NIR analyzer in the 4,000-12,000cm^{-1} spectral range. Calibration and validation sets were designed for the conception and evaluation of the method adequacy in the range of moisture content 10 to 15 percent (w.b) of the pasta. The prediction models based on partial least squares (PLS) regression, were developed in the near-infrared. Conventional criteria such as the R^2, the root mean square errors of cross validation (RMSECV), root mean square errors of estimation (RMSEE) as well as the number of PLS factors were considered for the selection of three pre-processing (vector normalization, minimum-maximum normalization and multiplicative scatter correction) methods. Spectra of pasta sample were treated with different mathematic pre-treatments before being used to build models between the spectral information and moisture content. The moisture content in pasta predicted by FT-NIR methods had very good correlation with their values determined via traditional methods (R^2 = 0.983), which clearly indicated that FT-NIR methods could be used as an effective tool for rapid determination of moisture content in pasta. The best calibration model was developed with min-max normalization (MMN) spectral pre-processing (R^2 = 0.9775). The MMN pre-processing method was found most suitable and the maximum coefficient of determination (R^2) value of 0.9875 was obtained for the calibration model developed.

Keywords: FT-NIR, Pasta, moisture determination.

Utilization of Soymilk Residue for Wheat Flour Substitution in Gyoza skin

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Abstract:

Soymilk residue is obtained as a byproduct from soymilk and tofu production with little economic value. It contains high protein and fiber as well as various minerals and phyto-chemical compounds. The objective of this research was to substitute soymilk residue for wheat flour in gyoza skin in order to enhance value of soymilk residue and increase protein and fiber content of gyoza skin. Wheat flour was replaced with soymilk residue from 0 to 40%. The soy milk residue prepared in this research contains 26.92%protein, 3.58% fiber, 2.88% lipid, 6.29% ash and 60.33% carbohydrate. The results showed that increasing soymilk residue decreased lightness (L*value), tensile strength and sensory attributes but increased redness (a*), yellowness (b*), protein and fiber contents of product. The result also showed that the gyoza skin substituted with 30% soymilk residue was the most acceptable ($p \leq 0.05$) and its protein and fiber content increased up to 45 % and 867 % respectively.

Keywords: Gyoza skin, sensory, soymilk residue, wheat flour.

Improvement of Salt Tolerance in Saudi Arabian Wheat by Seed Priming or Foliar Spray with Salicylic Acid

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Abstract:

The effect of exogenous application; seed priming or foliar spraying of salicylic acid (SA) on Yecora Rojo and Paragon wheat cv. under NaCl-salinity. Gas exchange parameters, growth parameters, yield and yield components were reduced in both cultivars under salinity stress with foliar spray and soaking seeds. Exogenous application of SA through foliar spraying or seed soaking showed a slight increases or decreases with the application method or between cultivars. SA foliar spraying exhibited a slight improvement over SA seed soaking in most parameters, particularly in Paragon. Although, seed soaking was less effective than foliar spraying, it was a slightly better with Yecora Rojo in some parameters. However, the low SA concentration; 0.5mM tended to improve most parameters in both cultivars. From data of the experiment, it has been concluded that the effect of SA depends on cultivar genotype and SA concentration.

Keywords: Salinity, Salicylic acid, Growth parameters, yield components, Wheat cultivars.

Measuring the Amount of Eroded Soil and Surface Runoff Water in the Field

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Abstract:

Water erosion is the most important problems of the soil in the Jabel Nefusa area located in northwest of Libya; therefore, erosion station had been established in the Faculty of Veterinary and dryfarming research Station, University of the Al-japel Al-gharbi in Zentan. The length of the station is 72.6 feet, 6 feet width and the percentage of its slope is 3%. The station were established to measure the amount of soil eroded and amount of surface water produced during the seasons 95/96 and 96/97 from each rain storms. The monitoring shows that there was a difference between the two seasons in the number of rainstorms which made differences in the amount of surface runoff water and the amount of soil eroded between the two seasons. Although the slope is low (3%), the soil texture is sandy and the land ploughed twice during each season surface runoff and soil eroded were occurred. The average amount of eroded soil was 3792 grams (gr) per season and the average amount of surface runoff water was 410 liter (L) per season. The amount of surface runoff water would be much greater from Jebel Nefusa upland with steep slopes and collecting of them will save a valuable amount of water which lost as a runoff while this area is in desperate of this water. The regression analysis of variance show strong correlation between rainfall depth and the other two depended variable (the amount of surface runoff water and the amount of eroded soil. It shows also strong correlation between amount of surface runoff water and amount of eroded soil.

Keywords: Rain, Surface runoff water, Soil, Water erosion, Soil erosion.

VETIVER OIL PRODUCTION FROM ROOT CULTURE OF VETIVERIA ZIZANIOIDES

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Abstract:

Vetiver oil is secondary metabolite that accumulates in *Vetiveria zizanioides* roots. The aim of this study was to obtain best type of root culture which produce high amount of vetiver oil, and was similar to metabolites produce from its mother plant. Protein analysis was also conducted to detect protein, related to putative enzymes, which have a role in terpenoids synthesis in the root culture. The results showed that root culture derived from crown explant produced the best root growth. The root culture produced primary and lateral roots, ca. 40 branches. The vetiver oil produced from root culture was analyzed by using GC-MS., and the highest content of terpenoids from roots of crown explant attained 19.024%. The result of SDS PAGE showed proteins which were ±61 kD and ± 68 kD, each might be related to putative monoterpene synthase and sesquiterpenes complex, respectively.

Keywords: Protein, Root culture, Terpenoids, Vetiver oil.

EVALUATION OF SSR MARKERS ASSOCIATED WITH HIGH OLEIC ACID IN SUNFLOWER

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Abstract:

Sunflower oil with high oleic acid content is most desirable because of its high oxidative stability. Screening sunflower of high oleic acid using conventional method is laborious and time consuming. Therefore, the use of molecular markers as a screening tool is promising. The objective of this research was to evaluate SSR primers for high oleic acid content in sunflower. Two sunflower lines, 5A and PI 649855 were used as the representative of low and high oleic acid sunflowers, respectively, and thirty seven SSR markers were used to identify oleic acid content trait. The results revealing 10 SSR primers showed polymorphic between high and low oleic acid lines and thus were informative. With these primers, therefore, it is possible to identify the genetic markers associated with high oleic acid trait in sunflower genotypes.

Keywords: Microsatellite, Helianthus annuus L., fatty acid composition, molecular markers.

Response of BGA-Urea Fertigation as N2 Source on Growth Parameters and Yield of Paddy (Oryza sativa L.) in Agra (India)

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Abstract:

Paddy being cultivated since about 10,000 years B.C in Ganga Valley in India, its production reached up to 99 million tons in the year 2012. BGA are of much ecological importance for maintaining the soil fertility and reclaiming the alkalinity. In present investigation attempts were made to identify the local cyanobacterial genera from the paddy fields, BGA application for green farming enabling the paddy to utilize more amount of nitrogen released and to examine its impact along with Urea upon growth and yield responses of the Paddy crop. It was observed that combined treatment of BGA with Urea proved better response in almost all growth parameters and yield attributes except number of tillers/ Plant and grains/ panicle as compared to application of either Urea or BGA alone. The Paddy growers should be encouraged to adopt BGA along with Urea as source of Nitrogen for Paddy cultivation.

Keywords: BGA/Urea fertigation, Response, Paddy.

Design of CMOS CFOA Based on Pseudo Operational Transconductance Amplifier

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Abstract:

A novel design technique employing CMOS Current Feedback Operational Amplifier (CFOA) is presented. The feature of consumption very low power in designing pseudo-OTA is used to decreasing the total power consumption of the proposed CFOA. This design approach applies pseudo-OTA as input stage cascaded with buffer stage. Moreover, the DC input offset voltage and harmonic distortion (HD) of the proposed CFOA are very low values compared with the conventional CMOS CFOA due to the symmetrical input stage. P-Spice simulation results are obtained using 0.18µm MIETEC CMOS process parameters and supply voltage of ±1.2V, 50µA biasing current. The p-spice simulation shows excellent improvement of the proposed CFOA over existing CMOS CFOA. Some of these performance parameters, for example, are DC gain of 62. dB, openloop gain bandwidth product of 108 MHz, slew rate (SR+) of +71.2V/µS, THD of -63dB and DC consumption power (PC) of 2mW.

Keywords: Pseudo-OTA used CMOS CFOA, low power CFOA, high-performance CFOA, novel CFOA.

OPTIMIZATION OF THE INPUT LAYER STRUCTURE FOR FEED-FORWARD NARX NEURAL NETWORKS

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Abstract:

This paper presents an optimization method for reducing the number of input channels and the complexity of the feed-forward NARX neural network (NN) without compromising the accuracy of the NN model. By utilizing the correlation analysis method, the most significant regressors are selected to form the input layer of the NN structure. An application of vehicle dynamic model identification is also presented in this paper to demonstrate the optimization technique and the optimal input layer structure and the optimal number of neurons for the neural network is investigated.

Keywords: Correlation analysis, F-ratio, Levenberg-Marquardt, MSE, NARX, neural network, optimisation.

EXPERIMENTAL IMPLEMENTATION OF MODEL PREDICTIVE CONTROL FOR PERMANENT MAGNET SYNCHRONOUS MOTOR

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Abstract:

Fast speed drives for Permanent Magnet Synchronous Motor (PMSM) is a crucial performance for the electric traction systems. In this paper, PMSM is derived with a Model-based Predictive Control (MPC) technique. Fast speed tracking is achieved through optimization of the DC source utilization using MPC. The technique is based on predicting the optimum voltage vector applied to the driver. Control technique is investigated by comparing to the cascaded PI control based on Space Vector Pulse Width Modulation (SVPWM). MPC and SVPWM-based FOC are implemented with the TMS320F2812 DSP and its power driver circuits. The designed MPC for a PMSM drive is experimentally validated on a laboratory test bench. The performances are compared with those obtained by a conventional PI-based system in order to highlight the improvements, especially regarding speed tracking response.

Keywords: Permanent magnet synchronous motor, mode predictive control, optimization of DC source utilization, cascaded PI control, space vector pulse width modulation, TMS320F2812 DSP.

A Simple Adaptive Atomic Decomposition Voice Activity Detector Implemented by Matching Pursuit

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Abstract:

A simple adaptive voice activity detector (VAD) is implemented using Gabor and gammatone atomic decomposition of speech for high Gaussian noise environments. Matching pursuit is used for atomic decomposition, and is shown to achieve optimal speech detection capability at high data compression rates for low signal to noise ratios. The most active dictionary elements found by matching pursuit are used for the signal reconstruction so that the algorithm adapts to the individual speakers dominant time-frequency characteristics. Speech has a high peak to average ratio enabling matching pursuit greedy heuristic of highest inner products to isolate high energy speech components in high noise environments. Gabor and gammatone atoms are both investigated with identical logarithmically spaced center frequencies, and similar bandwidths. The algorithm performs equally well for both Gabor and gammatone atoms with no significant statistical differences. The algorithm achieves 70% accuracy at a 0 dB SNR, 90% accuracy at a 5 dB SNR and 98% accuracy at a 20dB SNR using 30d B SNR as a reference for voice activity.

Keywords: Atomic Decomposition, Gabor, Gammatone, Matching Pursuit, Voice Activity Detection.

Dynamic Performance Evaluation of Distributed Generation Units in the Micro Grid

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Abstract:

This paper presents dynamic models of distributed generators (DG) and investigates dynamic behavior of the DG units in the micro grid system. The DG units include photovoltaic and fuel cell sources. The voltage source inverter is adopted since the electronic interface which can be equipped with its controller to keep stability of the micro grid during small signal dynamics. This paper also introduces power management strategies and implements the DG load sharing concept to keep the micro grid operation in gridconnected and islanding modes of operation. The results demonstrate the operation and performance of the photovoltaic and fuel cell as distributed generators in a micro grid. The entire control system in the micro grid is developed by combining the benefits of the power control and the voltage control strategies. Simulation results are all reported, confirming the validity of the proposed control technique.

Keywords: Stability, Distributed Generation, Dynamic, Micro Grid.

The Validity Range of LSDP Robust Controller by Exploiting the Gap Metric Theory

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Abstract:

This paper attempts to define the validity domain of LSDP (Loop Shaping Design Procedure) controller system, by determining the suitable uncertainty region, so that linear system be stable. Indeed the LSDP controller cannot provide stability for any perturbed system. For this, we will use the gap metric tool that is introduced into the control literature for studying robustness properties of feedback systems with uncertainty. A 2nd order electric linear system example is given to define the validity domain of LSDP controller and effectiveness gap metric.

Keywords: LSDP, Gap metric, Robust Control.

Data Rate Based Grouping Scheme for Cooperative Communications in Wireless LANs

Sunmyeng Kim

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Abstract:

IEEE 802.11a/b/g standards provide multiple transmission rates, which can be changed dynamically according to the channel condition. Cooperative communications were introduced to improve the overall performance of wireless LANs with the help of relay nodes with higher transmission rates. The cooperative communications are based on the fact that the transmission is much faster when sending data packets to a destination node through a relay node with higher transmission rate, rather than sending data directly to the destination node at low transmission rate. To apply the cooperative communications in wireless LAN, several MAC protocols have been proposed. Some of them can result in collisions among relay nodes in a dense network. In order to solve this problem, we propose a new protocol. Relay nodes are grouped based on their transmission rates. And then, relay nodes only in the highest group try to get channel access. Performance evaluation is conducted using simulation, and shows that the proposed protocol significantly outperforms the previous protocol in terms of throughput and collision probability.

Keywords: Cooperative communications, MAC protocol, relay node, WLAN.

PSO Based Weight Selection and Fixed Structure Robust Loop Shaping Control for Pneumatic Servo System with 2DOF Controller

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Abstract:

This paper proposes a new technique to design a fixed-structure robust loop shaping controller for the pneumatic servosystem. In this paper, a new method based on a particle swarm optimization (PSO) algorithm for tuning the weighting function parameters to design an H∞ controller is presented. The PSO algorithm is used to minimize the infinity norm of the transfer function of the nominal closed loop system to obtain the optimal parameters of the weighting functions. The optimal stability margin is used as an objective in PSO for selecting the optimal weighting parameters; it is shown that the proposed method can simplify the design procedure of H∞ control to obtain optimal robust controller for pneumatic servosystem. In addition, the order of the proposed controller is much lower than that of the conventional robust loop shaping controller, making it easy to implement in practical works. Also two-degree-of-freedom (2DOF) control design procedure is proposed to improve tracking performance in the face of noise and disturbance. Result of simulations demonstrates the advantages of the proposed controller in terms of simple structure and robustness against plant perturbations and disturbances.

Keywords: Robust control, Pneumatic Servosystem, PSO, H∞ control, 2DOF.

The Correlation of Total Phenol Content with Free Radicals Scavenging Activity and Effect of Ethanol Concentration in Extraction Process of Mangosteen Rind (Garcinia mangostana)

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Abstract:

The use of synthetic antioxidants often causes a negative effect on health and increases the incidence of carcinogenesis. Development of the natural antioxidants should be investigated. However, natural antioxidants have a low toxicity and are safe for human consumption. Ethanol extract of mangosteen rind (*Garcinia mangostana*) contains natural antioxidant compounds that have various pharmacological activities. Antioxidants from the ethanol extract of mangosteen rind have free radicals scavenging activities. The scavenging activity of ethanol extract of mangosteen rind was determined by DPPH method. The phenolic compound from the ethanol extract of mangosteen rind is determined with Folin-Ciocalteu method. The results showed that the absolute ethanol extract of mangosteen rind has IC_{50} of 40.072 ug/mL. The correlation of total phenols content with free radical scavenging activity has an equation y: 5.207x + 205.51 and determination value (R^2) of 0.9329. Total phenols content from the ethanol extract of mangosteen rind has a good correlation with free radicals scavenging activity of DPPH.

Keywords: Antioxidant, Garcinia mangostana, inhibition concentration 50%, total phenolic compounds.

NOx Emission and Computational Analysis of Jatropha Curcus Fuel and Crude Oil

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Abstract:

Diminishing of conventional fuels and hysterical vehicles emission leads to deterioration of the environment, which emphasize the research to work on biofuels. Biofuels from different sources attract the attention of research due to low emission and biodegradability. Emission of carbon monoxide, carbon dioxide and H-C reduced drastically using Biofuels (B-20) combustion. Contrary to the conventional fuel, engine emission results indicated that nitrous oxide emission is higher in Biofuels. So this paper examines and compares the nitrogen oxide emission of Jatropha Curcus (JCO) B-20% blends with the vegetable oil. In addition to that computational analysis of crude non edible oil performed to assess the impact of composition on emission quality. In conclusion, JCO have the potential feedstock for the biodiesel production after the genetic modification in the plant.

Keywords: Jatropha Curcus, computational analysis, emissions, biofuels.

Radiation Effect on MHD Casson Fluid Flow over a Power-Law Stretching Sheet with Chemical Reaction

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Abstract:

This article addresses the boundary layer flow and heat transfer of Casson fluid over a nonlinearly permeable stretching surface with chemical reaction in the presence of variable magnetic field. The effect of thermal radiation is considered to control the rate of heat transfer at the surface. Using similarity transformations, the governing partial differential equations of this problem are reduced into a set of non-linear ordinary differential equations which are solved by finite difference method. It is observed that the velocity at fixed point decreases with increasing the nonlinear stretching parameter but the temperature increases with nonlinear stretching parameter.

Keywords: Boundary layer flow, nonlinear stretching, Casson fluid, heat transfer, radiation.

Using Phase Equilibrium Theory to Calculate Solubility of γ-Oryzanol in Supercritical CO2

Boy Arief Fachri

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Abstract:

Even its content is rich in antioxidants ϒ-oryzanol, rice bran is not used properly as functional food. This research aims to (1) extract ϒ-oryzanol; (2) determine the solubility of ϒ-oryzanol in supercritical CO_2 based on phase equilibrium theory; and (3) study the effect of process variables on solubility. Extraction experiments were carried out for rice bran (5 g) at various extraction pressures, temperatures and reaction times. The flowrate of supercritical fluid through the extraction vessel was 25 g/min. The extracts were collected and analysed with high-pressure liquid chromatography (HPLC). The conclusion based on the experiments are as: (1) The highest experimental solubility was 0.303 mcg/mL RBO at T= 60°C, P= 90 atm, t= 30 min; (2) Solubility of ϒ-oryzanol was influenced by pressure and temperature. As the pressure and temperature increase, the solubility increases; (3) The solubility data of supercritical extraction can be successfully determined using phase equilibrium theory. Meanwhile, tocopherol was found and slightly investigated in this work.

Keywords: Rice bran, solubility, supercritical CO2, ϒ-orizanol.

Biosynthesis of Titanium Dioxide Nanoparticles and Their Antibacterial Property

Prachi Singh

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Abstract:

This paper presents a low-cost, eco-friendly and reproducible microbe mediated biosynthesis of TiO_2 nanoparticles. TiO_2 nanoparticles synthesized using the bacterium, *Bacillus subtilis*, from titanium as a precursor, were confirmed by TEM analysis. The morphological characteristics state spherical shape, with the size of individual or aggregate nanoparticles, around 30-40 nm. Microbial resistance represents a challenge for the scientific community to develop new bioactive compounds. Here, the antibacterial effect of TiO_2 nanoparticles on *Escherichia coli* was investigated, which was confirmed by CFU (Colony-forming unit). Further, growth curve study of *E. coli* Hb101 in the presence and absence of TiO_2 nanoparticles was done. Optical density decrease was observed with the increase in the concentration of TiO_2. It could be attributed to the inactivation of cellular enzymes and DNA by binding to electron-donating groups such as carboxylates, amides, indoles, hydroxyls, thiols, etc. which cause little pores in bacterial cell walls, leading to increased permeability and cell death. This justifies that TiO_2 nanoparticles have efficient antibacterial effect and have potential to be used as an antibacterial agent for different purposes.

Keywords: Antibacterial effect, CFU, Escherichia coli Hb101, growth curve, TEM, TiO2 nanoparticle, toxicity, UV-Vis.

Entropy Analysis in a Bubble Column Based on Ultrafast X-Ray Tomography Data

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Abstract:

By means of the ultrafast X-ray tomography facility, data were obtained at different superficial gas velocities U_G in a bubble column (0.1 m in ID) operated with an air-deionized water system at ambient conditions. Raw reconstructed images were treated by both the information entropy (IE) and the reconstruction entropy (RE) algorithms in order to identify the main transition velocities in a bubble column. The IE values exhibited two well-pronounced minima at U_G=0.025 m/s and U_G=0.085 m/s identifying the boundaries of the homogeneous, transition and heterogeneous regimes. The RE extracted from the central region of the column's cross-section exhibited only one characteristic peak at U_G=0.03 m/s, which was attributed to the transition from the homogeneous to the heterogeneous flow regime. This result implies that the transition regime is non-existent in the core of the column.

Keywords: Bubble column, ultrafast X-ray tomography, information entropy, reconstruction entropy.

Recycling of Polymers in the Presence of Nanocatalysts: A Green Approach towards Sustainable Environment

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Abstract:

This work involves the degradation of plastic waste in the presence of three different nanocatalysts. A thin film of LLDPE was formed with all three nanocatalysts separately in the solvent. Thermo Gravimetric Analysis (TGA) and Differential Scanning Calorimetric (DSC) analysis of polymers suggest that the presence of these catalysts lowers the degradation temperature and the change mechanism of degradation. Gas chromatographic analysis was carried out for two films. In gas chromatography (GC) analysis, it was found that degradation of pure polymer produces only 32% C3/C4 hydrocarbons and 67.6% C5/C9 hydrocarbons. In the presence of these catalysts, more than 80% of polymer by weight was converted into either liquid or gaseous hydrocarbons. Change in the mechanism of degradation of polymer was observed therefore more C3/C4 hydrocarbons along with valuable feedstock are produced. Adjustment of dose of nanocatalyst, use of nano-admixtures and recycling of catalyst can make this catalytic feedstock recycling method a good tool to get sustainable environment. The obtained products can be utilized as fuel or can be transformed into other useful products. In accordance with the principles of sustainable development, chemical recycling i.e. tertiary recycling of polymers along with the reuse (zero order recycling) of plastics can be the most appropriate and promising method in this direction. The tertiary recycling is attracting much attention from the viewpoint of the energy resource.

Keywords: Degradation, differential scanning calorimetry, feedstock recycling, gas chromatography, thermogravimetric analysis. DSC.

SURFACE CHARACTERISTICS OF BACILLUS MEGATERIUM AND ITS ADSORPTION BEHAVIOR ONTO DOLOMITE

Mohsen Farahat, Tsuyoshi Hirajima

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Abstract:

Surface characteristics of Bacillus megaterium strain were investigated; zeta potential, FTIR and contact angle were measured. Surface energy components including Lifshitz-van der Waals, Hamaker constant, and acid/base components (Lewis acid/Lewis base) were calculated from the contact angle data. The results showed that the microbial cells were negatively charged over all pH regions with high values at alkaline region. A hydrophilic nature for the strain was confirmed by contact angle and free energy of adhesion between microbial cells. Adsorption affinity of the strain toward dolomite was studied at different pH values. The results showed that the cells had a high affinity to dolomite at acid pH comparing to neutral and alkaline pH. Extended DLVO theory was applied to calculate interaction energy between B. megaterium cells and dolomite particles. The adsorption results were in agreement with the results of Extended DLVO approach. Surface changes occurred on dolomite surface after the bio-treatment were monitored; contact angle decreased from 69° to 38° and the mineral's floatability decreased from 95% to 25% after the treatment.

Keywords: Bacillus megaterium, surface modification, flotation, dolomite, adhesion energy.

Spectroscopic Determination of Functionalized Active Principles from Coleus aromaticus Benth Leaf Extract Using Ionic Liquids

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Abstract:

Green chemistry for plant extraction of active principles is the main interest of many researchers concerned with climate change. While classical organic solvents are detrimental to our environment, greener alternatives to ionic liquids are very promising for sustainable organic chemistry. This study focused on the determination of functional groups observed in the main constituents from the ionic liquid extracts of *Coleus aromaticus* Benth leaves using FT-IR Spectroscopy. Moreover, this research aimed to determine the best ionic liquid that can separate functionalized plant constituents from the leaves *Coleus aromaticus* Benth using Fourier Transform Infrared Spectroscopy. *Coleus aromaticus* Benth leaf extract in different ionic liquids, elucidated pharmacologically important functional groups present in major constituents of the plant, namely, rosmarinic acid, caffeic acid and chlorogenic acid. In connection to distinctive appearance of functional groups in the spectrum and highest % transmittance, potassium chloride-glycerol is the best ionic liquid for green extraction.

Keywords: Coleus aromaticus, ionic liquid, rosmarinic acid, caffeic acid, chlorogenic acid.

MODELING, ANALYSIS AND CONTROL OF A SMART COMPOSITE STRUCTURE

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Abstract:

In modern engineering, weight optimization has a priority during the design of structures. However, optimizing the weight can result in lower stiffness and less internal damping, causing the structure to become excessively prone to vibration. To overcome this problem, active or smart materials are implemented. The coupled electromechanical properties of smart materials, used in the form of piezoelectric ceramics in this work, make these materials well-suited for being implemented as distributed sensors and actuators to control the structural response. The smart structure proposed in this paper is composed of a cantilevered steel beam, an adhesive or bonding layer, and a piezoelectric actuator. The static deflection of the structure is derived as function of the piezoelectric voltage, and the outcome is compared to theoretical and experimental results from literature. The relation between the voltage and the piezoelectric moment at both ends of the actuator is also investigated and a reduced finite element model of the smart structure is created and verified. Finally, a linear controller is implemented and its ability to attenuate the vibration due to the first natural frequency is demonstrated.

Keywords: Active linear control, Lyapunov stability theorem, piezoelectricity, smart structure, static deflection.

Production of Pig Iron by Smelting of Blended Pre-Reduced Titaniferous Magnetite Ore and Hematite Ore Using Lean Grade Coal

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Abstract:

The rapid depletion of high-grade iron ore (Fe_2O_3) has gained attention on the use of other sources of iron ore. Titaniferous magnetite ore (TMO) is a special type of magnetite ore having high titania content (23.23% TiO_2 present in this case). Due to high TiO_2 content and high density, TMO cannot be treated by the conventional smelting reduction. In this present work, the TMO has been collected from high-grade metamorphic terrain of the Precambrian Chotanagpur gneissic complex situated in the eastern part of India (Shaltora area, Bankura district, West Bengal) and the hematite ore has been collected from Visakhapatnam Steel Plant (VSP), Visakhapatnam. At VSP, iron ore is received from Bailadila mines, Chattisgarh of M/s. National Mineral Development Corporation. The preliminary characterization of TMO and hematite ore (HMO) has been investigated by WDXRF, XRD and FESEM analyses. Similarly, good quality of coal (mainly coking coal) is also getting depleted fast. The basic purpose of this work is to find how lean grade coal can be utilised along with TMO for smelting to produce pig iron. Lean grade coal has been characterised by using TG/DTA, proximate and ultimate analyses. The boiler grade coal has been found to contain 28.08% of fixed carbon and 28.31% of volatile matter. TMO fines (below 75 μm) and HMO fines (below 75 μm) have been separately agglomerated with lean grade coal fines (below 75 μm) in the form of briquettes using binders like bentonite and molasses. These green briquettes are dried first in oven at 423 K for 30 min and then reduced isothermally in tube furnace over the temperature range of 1323 K, 1373 K and 1423 K for 30 min & 60 min. After reduction, the reduced briquettes are characterized by XRD and FESEM analyses. The best reduced TMO and HMO samples are taken and blended in three different weight percentage ratios of 1:4, 1:8 and 1:12 of TMO:HMO. The chemical analysis of three blended samples is carried out and degree of metallisation of iron is found to contain 89.38%, 92.12% and 93.12%, respectively. These three blended samples are briquetted using binder like bentonite and lime. Thereafter these blended briquettes are separately smelted in raising hearth furnace at 1773 K for 30 min. The pig iron formed is characterized using XRD, microscopic analysis. It can be concluded that 90% yield of pig iron can be achieved when the blend ratio of TMO:HMO is 1:4.5. This means for 90% yield, the maximum TMO that could be used in the blend is about 18%.

Keywords: Briquetting reduction, lean grade coal, smelting reduction, TMO.

Enhanced Magnetoelastic Response near Morphotropic Phase Boundary in Ferromagnetic Materials: Experimental and Theoretical Analysis

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Abstract:

The morphotropic phase boundary (MPB) recently has attracted constant interest in ferromagnetic systems for obtaining enhanced large magnetoelastic response. In the present study, structural and magnetoelastic properties of MPB involved ferromagnetic $Tb_{1-x}Gd_xFe_2$ ($0 \leq x \leq 1$) system has been investigated. The change of easy magnetic direction from <111> to <100> with increasing x up MPB composition of x=0.9 is detected by step-scanned [440] synchrotron X-ray diffraction reflections. The Gd substitution for Tb changes the composition for the anisotropy compensation near MPB composition of x=0.9, which was confirmed by the analysis of detailed scanned XRD, magnetization curves and the calculation of the first anisotropy constant K_1. The spin configuration diagram accompanied with different crystal structures for $Tb_{1-x}Gd_xFe_2$ was designed. The calculated first anisotropy constant K_1 shows a minimum value at MPB composition of x=0.9. In addition, the large ratio between magnetostriction, and the absolute values of the first anisotropy constant $\left|\lambda_S/K_1\right|$ appears at MPB composition, which makes it a potential material for magnetostrictive application. Based on experimental results, a theoretically approach was also proposed to signify that the facilitated magnetization rotation and enhanced magnetoelastic effect near MPB composition are a consequence of the anisotropic flattening of free energy of ferromagnetic crystal. Our work specifies the universal existence of MPB in ferromagnetic materials which is important for substantial improvement of magnetic and magnetostrictive properties and may provide a new route to develop advanced functional materials.

Keywords: Free energy, lattice distortion, magnetic anisotropy, magnetostriction, morphotropic phase boundary.

Determination of Optical Constants of Semiconductor Thin Films by Ellipsometry

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Abstract:

Ellipsometry is an optical method based on the study of the behavior of polarized light. The light reflected on a surface induces a change in the polarization state which depends on the characteristics of the material (complex refractive index and thickness of the different layers constituting the device). The purpose of this work is to determine the optical properties of semiconductor thin films by ellipsometry. This paper describes the experimental aspects concerning the semiconductor samples, the SE400 ellipsometer principle, and the results obtained by direct measurements of ellipsometric parameters and modelling using appropriate software.

Keywords: Ellipsometry, optical constants, semiconductors, thin films.

Polymer Mediated Interaction between Grafted Nanosheets

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Abstract:

Polymer-particle interactions can be effectively utilized to produce composites that possess physicochemical properties superior to that of neat polymer. The incorporation of fillers with dimensions comparable to polymer chain size produces composites with extra-ordinary properties owing to very high surface to volume ratio. The dispersion of nanoparticles is achieved by inducing steric repulsion realized by grafting particles with polymeric chains. A comprehensive understanding of the interparticle interaction between these functionalized nanoparticles plays an important role in the synthesis of a stable polymer nanocomposite. With the focus on incorporation of clay sheets in a polymer matrix, we theoretically construct the polymer mediated interparticle potential for two nanosheets grafted with polymeric chains. The self-consistent field theory (SCFT) is employed to obtain the inhomogeneous composition field under equilibrium. Unlike the continuum models, SCFT is built from the microscopic description taking in to account the molecular interactions contributed by both intra- and inter-chain potentials. We present the results of SCFT calculations of the interaction potential curve for two grafted nanosheets immersed in the matrix of polymeric chains of dissimilar chemistry to that of the grafted chains. The interaction potential is repulsive at short separation and shows depletion attraction for moderate separations induced by high grafting density. It is found that the strength of attraction well can be tuned by altering the compatibility between the grafted and the mobile chains. Further, we construct the interaction potential between two nanosheets grafted with diblock copolymers with one of the blocks being chemically identical to the free polymeric chains. The interplay between the enthalpic interaction between the dissimilar species and the entropy of the free chains gives rise to a rich behavior in interaction potential curve obtained for two separate cases of free chains being chemically similar to either the grafted block or the free block of the grafted diblock chains.

Keywords: Clay nanosheets, polymer brush, polymer nanocomposites, self-consistent field theory.

Comparative Study of Static and Dynamic Bending Forces during 3-Roller Cone Frustum Bending Process

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Abstract:

3-roller conical bending process is widely used in the industries for manufacturing of conical sections and shells. It involves static as well dynamic bending stages. Analytical models for prediction of bending force during static as well as dynamic bending stage are available in the literature. In this paper bending forces required for static bending stage and dynamic bending stages have been compared using the analytical models. It is concluded that force required for dynamic bending is very less as compared to the bending force required during the static bending stage.

Keywords: Analytical modeling, cone frustum, dynamic bending, static bending.

Improvement of Wear Resistance of 356 Aluminum Alloy by High Energy Electron Beam Irradiation

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Abstract:

This study is concerned with the microstructural analysis and improvement of wear resistance of 356 aluminum alloy by a high energy electron beam. Shock hardening on material by high energy electron beam improved wear resistance. Particularly, in the surface of material by shock hardening, the wear resistance was greatly enhanced to 29% higher than that of the 356 aluminum alloy substrate. These findings suggested that surface shock hardening using high energy electron beam irradiation was economical and useful for the development of surface shock hardening with improved wear resistance.

Keywords: Al356 alloy, HEEB, wear resistance, frictional characteristics.

Improvement in Properties of Ni-Cr-Mo-V Steel through Process Control

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Abstract:

Although gun barrel steels are an important variety from defense view point, available literatures are very limited. In the present work, an IF grade Ni-Cr-Mo-V high strength low alloy steel is produced in Electric Earth Furnace-ESR Route. Ingot was hot forged to desired dimension with a reduction ratio of 70-75% followed by homogenization, hardening and tempering treatment. Sample chemistry, NMIR, macro and micro structural analyses were done. Mechanical properties which include tensile, impact, and fracture toughness were studied. Ultrasonic testing was done to identify internal flaws. The existing high strength low alloy Ni-Cr-Mo-V steel shows improved properties in modified processing route and heat treatment schedule in comparison to properties noted earlier for manufacturing of gun barrels. The improvement in properties seems to withstand higher explosive loads with the same amount of steel in gun barrel application.

Keywords: Gun barrel steels, IF grade, physical properties, thermal and mechanical processing, mechanical properties, ultrasonic testing.

Effect of Combined Carbimazole and Curcuma longa Powder in Human Thyroid-Stimulating Hormone and Thyroperoxidase Antibody in Hyperthyroidism

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Abstract:

Turmeric (Curcuma longa) belongs to the ginger family and is used for food coloring mostly in Asian countries. It has long traditional medicinal value for the treatment of inflammations with excellent antioxidant properties. The purpose of this study is to investigate the efficiency of turmeric powder in the treatment of hyperthyroidism when combined with carbimazole antithyroid drug. The trial was conducted on 20 hyperthyroid patients but only 16 of them were successfully enrolled for the study. The 16 patients were divided into two equal groups where one group was treated with the only carbimazole while the other group was treated with a combined approach of carbimazole plus turmeric for 6 months consecutively. The result obtained is promising showing an average improvement of 99% in Thyroid-stimulating hormone (TSH) and 88%Thyroid Autoantibodies (TPOAb) in patients treated with the combined approach compared to those treated with the only carbimazole with an average of 3% and 18% of TSH and TPOAb improvement respectively. However, no major difference has been observed in both T4 and T3. Therefore, turmeric powder is a promising treatment if carefully and consistently combined with carbimazole antithyroid drug at very low amounts of 1.5 to 2 grams for at least 2 to 3 times a week.

Keywords: Thyroid, curcuminoids, turmeric, thyroxine, triiodothyronine, thyroid stimulating hormone, TPOAb.

Effect of Alginate and Surfactant on Physical Properties of Oil Entrapped Alginate Bead Formulation of Curcumin

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Abstract:

Oil entrapped floating alginate beads of curcumin were developed and characterized. Cremophor EL, Cremophor RH and Tween 80 were utilized to improve the solubility of the drug. The oil-loaded floating gel beads prepared by emulsion gelation method contained sodium alginate, mineral oil and surfactant. The drug content and % encapsulation declined as the ratio of surfactant was increased. The release of curcumin from 1% alginate beads was significantly more than for the 2% alginate beads. The drug released from the beads containing 25% of Tween 80 was about 70% while a higher drug release was observed with the beads containing Cremophor EL or Cremohor RH (approximately 90%). The developed floating beads of curcumin powder with surfactant provided a superior drug release than those without surfactant. Floating beads based on oil entrapment containing the drug solubilized in surfactants is a new delivery system to enhance the dissolution of poorly soluble drugs.

Keywords: Alginate, curcumin, floating drug delivery, oil entrapped bead.

Formulation and Characterization of Drug Loaded Niosomal Gel for Anti-Inflammatory Activity

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Abstract:

The main aim of the present research was to encapsulate mefenamic acid in niosomes andincorporate the prepared niosomes in the carbopol gel base for sustained therapeutic action. Mefenamic acid loaded niosomes were prepared by thin film hydration technique and evaluated for entrapment efficiency, vesicular size and zeta potential. The entrapment efficiency of the prepared niosomes was found to increase with decreasing the HLB values of surfactants and vesicle size was found to increase with increasing the cholesterol concentration. Niosomal vesicles with good entrapment efficiencies were incorporated in carbopol gel base to form the niosomal gel. The prepared niosomal gel was evaluated for pH, viscosity, spreadability, extrudability and skin permeation study across the rat skin. The results of permeation study revealed that the gel formulated with span 60 niosomes sustained the drug release for 12h. Further the *in vivo* study showed the good inhibition of inflammation by the gel prepared with span 60 niosomes.

Keywords: Mefenamic acid, niosomal gel, nonionic surfactants, sustained release.

Wound Healing Effect of Ocimum sanctum Leaves Extract in Diabetic Rats

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Abstract:

Delayed wound healing in diabetes is primarily associated with hyperglycemia, over-expression of inflammatory marker, oxidative stress and delayed collagen synthesis. This unmanaged wound is producing high economic burden on the society. Thus research is required to develop new and effective treatment strategies to deal with this emerging issue. Our present study incorporates the evaluation of wound healing effects of 50% ethanol extract of Ocimum sanctum (OSE) in streptozotocin (45mg/kg)-induced diabetic rats with concurrent wound ulcer. The animals showing diabetes (Blood glucose level >140 and <250 mg/dL) will be selected for wound healing study using standard dead space wound model. Wounds were created by implanting two polypropylene tubes (0.5 x 2.5 cm2 each), one on either side in the lumbar region on the dorsal surface of each rat. On the 10th postwounding day, the animals were sacrificed and granulation tissue formed on the implanted tubes was carefully dissected out and study the status of antioxidants (Superoxide dismutase, SOD and Glutathione, GSH) free radicals (Lipid peroxidation, LPO and nitric oxide, NO) acute inflammatory marker (myeloperoxidase, MPO) connective tissue determinants, hydroxyproline, hexosamine and hexuronic acid, which play a major role in wound healing and diabetes. Besides the anti-diabetic parameters (estimation of serum blood glucose, triglycerides and total cholesterol), the above parameters for wound healing were studied both in normal, untreated and OSE treated diabetic rats. The effects of extract on above parameters will be compared with known standard antioxidant (Vitamin E) and anti-diabetic (Glybenclamide) drugs. OSE 400 mg/kg substantiated by significantly decreased serum blood glucose, triglycerides and total cholesterol. OSE also decrease granulation tissue free radicals (LPO, 58.1% and NO, 52.7%) and myeloperoxidase (MPO, 63.3%), and enhanced antioxidants (GSH, 116.4% and SOD, 201.1%)

Keywords: Wound healing, diabetes, Ocimum sanctum, Antioxidant, Free radical, Myeloperoxidase

Pre-Clinical Studying of Antitumor Ramon Preparation: Acute Toxicity

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Abstract:

In article the data of acute toxicity for pre-clinical researches of Ramon preparation is described. Ramon effects to clinical characteristics of blood, cardio-vascular system, hepatotoxic and diuretic effects were studied.

Keywords: Cancer, toxicity, antitumor activity, pre-clinical testing, anthraquinones, phytopreparation, Ramon.

Drug Combinations with Steroid Dispensing in Drugstores: A Study in the Center Area of Bangkok, Thailand

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Abstract:

The purposes of this research were 1) to survey the number of drugstores that unlawful dispense of asthma prescription drugs, in form of drug combinations in the Phaya Thai district of Bangkok, 2) to find the steroids contained in that drug combinations, 3) to find a means for informing general public about the dangers of drugs and for a campaign to stop dispensing them. Researcher collected drug combinations from 69 drugstores in Phaya Thai district from Feb 15, 2012 to Mar 15, 2012. The survey found 30.43%, 21, drug stores, sold asthma drug combinations to customers without a prescription. These collected samples were tested for steroid contamination by using Immunochromatography kits. Eleven samples, 52.38%, were found contaminated with steroids. In short, there should be control and inspection of drugstores in the distribution of steroid medications. To improve the knowledge of self health maintenance and drug usage among public, Thai Government and Department of Public Health should educate people about the side effects of using drug combinations and steroids.

Keywords: Dispensing, Drug Combinations, Steroids

Cannabidiol Treatment Ameliorates Acetaminophen-Induced Hepatotoxicity in Mice

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Abstract:

The possible therapeutic effect of cannabidiol, the major non-psychotropic Cannabis constituent, was investigated against acute hepatotoxicity induced by a single oral dose of acetaminophen (500mg/kg) in mice. Cannabidiol (two intraperitoneal injections, 5mg/kg, each) was given 1 hour and 12 hours following acetaminophen administration. Acetaminophen administration caused significant elevations of serum alanine aminotransferase, and hepatic malondialdehyde, and nitric oxide levels, and a significant decrease in hepatic reduced glutathione. Cannabidiol significantly attenuated the deterioration in the measured biochemical parameters resulted from acetaminophen administration. Also, histopathological examination showed that cannabidiol markedly attenuated ameliorated acetaminophen-induced liver tissue damage. These results emphasize that cannabidiol represents a potential therapeutic option to protect against acetaminophen hepartotoxicity which is a common clinical problem.

Keywords: cannabidiol, acetaminophen, liver, mice.

Preparation and Characterization of M. × Piperita L. Oil Based Gel Formulation

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Abstract:

The essential oil of M. × piperita L. was formulated into a topical gel. The prepared gel was characterized for its pH, viscosity, spreadiblity, consistency and extrudiblity, while its stability was evaluated under different temperature conditions. The prepared M. × piperita oil gel was clear and transparent. The pH value of developed gel was 6.6, while its viscosity was 1200 cP. Spreadability and consistency of the M. × piperita oil gel was 10.7 g.cm/sec and 7 mm, respectively. The prepared gel showed good extrudiblity. During the stability studies, no significant change in pH and viscosity as a function of time for gel was observed, indicating stability of prepared formulation. The gel developed in this study is expected to forward the usage of M. × piperita essential towards commercial application.

Keywords: M. × piperita L., formulation, gel, characterization, stability

Formulation and in vitro Evaluation of Ondansetron Hydrochloride Matrix Transdermal Systems Using Ethyl Cellulose/Polyvinyl Pyrrolidone Polymer Blends

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Abstract:

Transdermal delivery of ondansetron hydrochloride (OdHCl) can prevent the problems encountered with oral ondansetron. In previously conducted studies, effect of amount of polyvinyl pyrrolidone, permeation enhancer and casting solvent on the physicochemical properties on OdHCl were investigated. It is feasible to develop ondansetron transdermal patch by using ethyl cellulose and polyvinyl pyrrolidone with dibutyl pthalate as plasticizer, however, the desired flux is not achieved. The primary aim of this study is to use dimethyl succinate (DMS) and propylene glycol that are not incorporated in previous studies to determine their effect on the physicochemical properties of an OdHCl transdermal patch using ethyl cellulose and polyvinyl pyrrolidone. This study also investigates the effect of permeation enhancer (eugenol and phosphatidylcholine) on the release of OdHCl. The results showed that propylene glycol is a more suitable plasticizer compared to DMS in the fabrication of OdHCl transdermal patch using ethyl cellulose and polyvinyl pyrrolidone as polymers. Propylene glycol containing patch has optimum drug content, thickness, moisture content and water absorption, tensile strength, and a better release profile than DMS. Eugenol and phosphatidylcholine can increase release of OdHCl from the patches. From the physicochemical result and permeation profile, a combination of 350mg of ethyl cellulose, 150mg polyvinyl pyrrolidone, 3% of total polymer weight of eugenol, and 40% of total polymer weight of propylene glycol is the most suitable formulation to develop an OdHCl patch. OdHCl release did not increase with increasing the percentage of plasticiser. DMS 4, PG 4, DMS 9, PG 9, DMS 14, and PG 14 gave better release profiles where using 300mg: 0mg, 300mg: 100mg, and 350mg: 150mg of EC: PVP. Thus, 40% of PG or DMS appeared to be the optimum amount of plasticiser when the above combination where EC: PVP was used. It was concluded from the study that a patch formulation containing 350mg EC, 150mg PVP, 40% PG and 3% eugenol is the best transdermal matrix patch compositions for the uniform and continuous release/permeation of OdHCl over an extended period. This patch design can be used for further pharmacokinetic and pharmacodynamic studies in suitable animal models.

Keywords: Ondansetron hydrochloride, dimethyl succinate, eugenol.

Reference Management Software: Comparative Analysis of RefWorks and Zotero

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Abstract:

This paper presents a comparison of reference management software between RefWorks and Zotero. The results were drawn by comparing two software and the novelty of this paper is the comparative analysis of software and it has shown that ReftWorks can import more information from the Google Scholar for the researchers. This finding could help to know researchers to use the reference management software.

Keywords: Analysis, comparative analysis, reference management software, researchers.

Approaches to Promote Healthy Recreation Activities for Elderly Tourists at Bang Nam Phueng Floating Market, Prapradeang District, Samutprakarn Province

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Abstract:

The objectives of this study are to find out the approaches to promote healthy recreation activities for elderly tourists and develop Bang Nam Phueng Floating Market to be a health tourism attraction. The research methodology was to analyze internal and external situations according to MP-MF and the MCSTEPS principles. As for the results of this study the researcher found that the healthy recreational activities for elderly tourists could be divided in 7 groups; travelling Bang Nam Phueng Floating Market activity, homestay relaxation, arts center platform activity, healthy massage activity, paying homage to a Buddha image activity, herbal joss-stick home activity, making local desserts and food activity.

Keywords: Elderly tourists, recreational activities, Bang Nam Phueng Floating Market.

Forms of Promotion and Dissemination of Traditional Local Wisdom: Creating Occupations among the Elderly in Noanmueng Community, Muang Sub-District, Baan Doong District, Udonthani Province

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Abstract:

This research sought to discover the forms of promotion and dissemination of traditional local wisdom that are used to create occupations among the elderly at Noanmueng Community, Muang Sub-District, Baan Doong District, Udornthani Province. The criteria used to select the research sample group were: having a role involved in the promotion and dissemination of traditional local wisdom to create occupations among the elderly; being an experienced person who the residents of Noanmueng Community find trustworthy; and having lived in Noanmueng Community for a long time so as to be able to see the development and change that occurs. A total of 16 persons were thus selected. Data was gathered through a qualitative study, using semi-structured indepth interviews. The collected data was then summarized and discussed according to the research objectives. Finally, the data was presented in narrative format. Results found that the identifying traditional local wisdom of the community (which grew from the residents' experience and beneficial usage in daily life, passed down from generation to generation) was the weaving of cloth and basketry. As for the manner of promotion and dissemination of traditional local wisdom, these skills were passed down through teaching by example to family members, relatives and others in the community. This was largely the initiative of the elders or elderly members of the community. In order for the promotion and dissemination of traditional local wisdom to create occupations among the elderly, the traditional local wisdom should be supported in every way through participation of the community members. For example, establish a museum of traditional local wisdom for the collection of traditional local wisdom in various fields, both from the past and present innovations. This would be a source of pride for the community, simultaneously helping traditional local wisdom to become widely known and to create income for the community's elderly. Additional ways include organizing exhibitions of products made by traditional local wisdom, finding both domestic and international markets, as well as building both domestic and international networks aiming to find opportunities to market products made by traditional local wisdom.

Keywords: Traditional local wisdom, Occupation, Elderly.

THE IMPORTANCE OF ISSUES FOR THE YOUTH IN VOTER DECISION MAKING: A CASE STUDY AMONG UNIVERSITY STUDENTS IN MALAYSIA

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Abstract:

In the 13th Malaysia's General Elections held in 2013, it was observed that large numbers of urban constituencies saw strongly decisive young voters (between 21-39 age group) determine the outcome in their favour. Also, the Elections Commission had approximated that 70% of some 4.2 million unregistered voters at the time were citizens aged between 21 and 40 years old. If they are not already considered an important form of political leverage, 450,000 young Malaysians turn 21 years old each year. Further compounding this fact were the 2.4 million new voters registered in 2012, which at the time constituted almost 30% of the entire voting population. This article discusses the importance of issues for the youth, with reference to the university students in Malaysia in their decision making on polling day.

Keywords: Malaysia, Youth, Issues, Voting Patterns, Elections.

ANALYSIS OF CREATIVE CITY INDICATORS IN ISFAHAN CITY, IRAN

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Abstract:

This paper investigates the indices of a creative city in Isfahan. Its main aim is to evaluate quantitative status of the creative city indices in Isfahan city, analyze the dispersion and distribution of these indices in Isfahan city. Concerning these, this study tries to analyze the creative city indices in fifteen area of Isfahan through secondary data, questionnaire, TOPSIS model, Shannon entropy and SPSS. Based on this, the fifteen areas of Isfahan city have been ranked with 12 factors of creative city indices. The results of studies show that fifteen areas of Isfahan city are not equally benefiting from creative indices and there is much difference between the areas of Isfahan city.

Keywords: Grading, creative city, creative city evaluation indicators, regional planning model.

Auspicious Meaning for Community Souvenir Products

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Abstract:

The objective of this research was to find the relationship between auspicious meaning in eastern wisdom and the interpretation as a guideline for the design and development of community souvenirs. The sample group included 400 customers in Bangkok who used to buy community souvenir products. The information was applied to design the souvenirs which were considered for the appropriateness by 5 design specialists. The data were analyzed to find frequency, percentage, and SD with the results as follows. 1) The best factor referring to the auspicious meaning is color. The application of auspicious meaning can make the value added to the product and bring the fortune to the receivers. 2) The effectiveness of the auspicious meaning integration on the design of community souvenir product was in high level. When considering in each aspect, it was found that the interpretation aspect was in high level, the congruency of the auspicious meaning and the utility of the product was in high level. The attractiveness and the good design were in very high level while the potential of the value added in the product design was in high level. The suitable application to the design of community souvenir product was in high level.

Keywords: Auspicious meaning, community products, souvenirs.

The Innovation of English Materials to Communicate the Identity of Bangpoo, Samut Prakan Province, for Ecotourism

Kitda Praraththajariya

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Abstract:

The main purpose of this research was to study how to communicate the identity of the Bangpoo, Samu tPrakan province for ecotourism. The qualitative data was collected through studying related materials, exploring the area, in-depth interviews with three groups of people: three directly responsible officers who were key informants of the district, twenty foreign tourists and five Thai tourist guides. A content analysis was used to analyze the qualitative data. The two main findings of the study were as follows:

1. The identity of Bangpoo, Samut Prakan province. This establishment was near the Mouth of the Gulf of Thailand for normal people and tourists, consisting of rest accommodations. There are restaurants where food and drinks are served, rich mangrove forests, Banpoo seaside resort and mangrove trees. Bangpoo seaside resort is characterized by muddy beacheswhere the greatest number of seagulls can be seen from March to May each year.
2. The communication of the identity of Bangpoo, Samut Prakan province which the researcher could find and design to present in English materials can be summed up in 3 items: 1) The history of Bangpoo, Samut Prakan province 2) The Learning center of Ecotourism: Seagulls and Mangrove forest 3) How to keep Banpoo, Samut Prakran province for ecotourism.

Keywords: Foreigner tourists, signified, semiotics, ecotourism.

Diversity Management of Gender, Age and Disability in the Banking Sector in the Kingdom of Saudi Arabia

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Abstract:

As a developing country, The Kingdom of Saudi Arabia (KSA) needs to make the best possible use of its workforce for social and economic reasons. The workforce is diverse, calling for appropriate diversity management (DM). The thesis focuses on the banking sector in KSA. To date, there have been no studies on DM in the banking sector in this country. Many organizations have introduced specific policies and programmes to improve the recruitment, inclusion, promotion, and retention of diverse employees, in addition to the legal requirements existing in many countries. However, Western-centric models of DM may not be applicable, at least not in their entirety, in other regions.

The aim of the study is to devise a framework for understanding gender, age and disability DM in the banking sector in KSA in order to enhance DM in this sector. A sample of 24 managers, 2 from each of the 12 banks, was interviewed to obtain their views on DM in the banking sector in KSA. Thematic analysis was used to analyze the data. These themes were used to develop the questionnaire, which was administered to 10 managers in each of the 12 banks. After analysis of these data, and completion of the study, the research will make a theoretical contribution to the knowledge on DM and a practical contribution to the management of diversity in Saudi banks. This paper concerns a work in progress.

Keywords: Age, disability, diversity, gender, Kingdom of Saudi Arabia.

Advertising Appeals and Cultural Values in Social Media Commercials in UK, Brasil and India: Case Study of Nokia and Samsung

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Abstract:

The objectives of this study is to investigate the impact of culture on advertising appeals in mobile phone industry via social media channel in UK, Brazil and India. Content analysis on Samsung and Nokia commercials in YouTube is conducted. The result indicates that the advertising appeals are both congruent and incongruent with cultural dimensions in UK, Brazil and India. The result suggests that Hofstede and value paradoxes might be the tools to predict the relationship between cultural values and advertising appeals.

Keywords: Advertising appeal, international advertising, mobile phone advertising, social media advertising.

ONLINE METACOGNITIVE READING STRATEGIES USE BY POSTGRADUATE LIBYAN EFL STUDENTS

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Abstract:

With the increasing popularity of the Internet, online reading has become an essential source for EFL readers. Using strategies to comprehend information on online reading texts play a crucial role in students' academic success. Metacognitive reading strategies are effective factors that enhance EFL learners reading comprehension. This study aimed at exploring the use of online metacognitive reading strategies by postgraduate Libyan EFL students. Quantitative data was collected using the Survey of Online Reading Strategies (OSORS). The findings revealed that the participants were moderate users of metacognitive online reading strategies. Problem solving strategies were the most frequently reported used strategies, while support reading strategies were the least. The five most and least frequently reported strategies were identified. Based on the findings, some future research recommendations were presented.

Keywords: Metacognitive strategies, Online reading, Online reading strategies, Postgraduate students.

A FRAMEWORK FOR THE EVALUATION OF INFRASTRUCTURES' SERVICEABILITY

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Abstract:

Aging infrastructures became a serious social problem. This brought out the increased need for the legislation of a new strict guideline for infrastructure management. Although existing guidelines provided basics of how to evaluate and manage the condition of infrastructures, they needed improvements for their evaluation procedures. Most guidelines mainly focused on the structural condition of infrastructures and did not properly reflect service aspects of infrastructures such as performance, public demand, capacity, etc., which were significantly valuable to public. Regardless of the importance, these factors were often neglected in infrastructure evaluations, because they were quite subjective and difficult to quantify in rational manner. Thus, this study proposed a framework to properly identify and evaluate the service indicators. This study showed that service indicators could be grouped into two categories and properly evaluated using AHP and Fuzzy. Overall, proposed framework is expected to assist governmental agency in establishing effective investment strategies for infrastructure improvements.

Keywords: Infrastructure, evaluation, serviceability, fuzzy.

Mikrophonie I (1964) by Karlheinz Stockhausen - Between Idea and Auditory Image

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Abstract:

Background in music analysis: Traditionally, when we think about a composer's sketches, the chances are that we are thinking in terms of the working out of detail, rather than the evolution of an overall concept. Since music is a "time art," it follows that questions of a form cannot be entirely detached from considerations of time. One could say that composers tend to regard time either as a place gradually and partially intuitively filled, or they can look for a specific strategy to occupy it. It seems that the one thing that sheds light on Stockhausen's compositional thinking is his frequent use of "form schemas," that is often a single-page representation of the entire structure of a piece. Background in music technology: Sonic Visualiser is a program used to study a musical recording. It is an open source application for viewing, analyzing, and annotating music audio files. It contains a number of visualisation tools, which are designed with useful default parameters for musical analysis. Additionally, the Vamp plugin format of SV supports to provide analysis such as for example structural segmentation. Aims: The aim of paper is to show how SV may be used to obtain a better understanding of the specific musical work, and how the compositional strategy does impact on musical structures and musical surfaces. It is known that "traditional" music analytic methods don't allow indicating interrelationships between musical surface (which is perceived) and underlying musical/acoustical structure. Main Contribution: Stockhausen had dealt with the most diverse musical problems by the most varied methods. A characteristic which he had never ceased to be placed at the center of his thought and works, it was the quest for a new balance founded upon an acute connection between speculation and intuition. In the case with Mikrophonie I (1964) for tam-tam and 6 players Stockhausen makes a distinction between the "connection scheme," which indicates the ground rules underlying all versions, and the form scheme, which is associated with a particular version. The preface to the published score includes both the connection scheme, and a single instance of a "form scheme," which is what one can hear on the CD recording. In the current study, the insight into the compositional strategy chosen by Stockhausen was been compared with auditory image, that is, with the perceived musical surface. Stockhausen's musical work is analyzed both in terms of melodic/voice and timbre evolution. Implications: The current study shows how musical structures have determined of musical surface. The general assumption is this, that while listening to music we can extract basic kinds of musical information from musical surfaces. It is shown that interactive strategies of musical structure analysis can offer a very fruitful way of looking directly into certain structural features of music.

Keywords: Automated analysis, composer's strategy, Mikrophonie I, musical surface, Stockhausen.

Participatory Democracy to the Contemporary Problems of Polish Social Policy

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Abstract:

Socio-economic development, which is seen around the world today, has contributed to the emergence of new problems of a social nature. Different political, historical, geographical or economic conditions cause that, in addition to global issues of social policy such as an aging population, unemployment, migration, countries, regions, there are also specific new problems that require diagnosis, individualized approach and efficient, planned solutions. These should include, among others, digital addiction, peer violence, obesity among children, the problem of 'legal highs', stress, depression, diseases associated with environmental pollution etc. The central authorities, selected most often with the tools specific to representative democracy, that is, the general election, for many reasons, inter alia, organizational, communication, are not able to effectively diagnose their intensity, territorial distribution, and thus to effectively fight them. This article aims to show how in Poland, citizens influence solving problems related to the broader social policy implemented at the local government level and indicates the possibilities of improving those solutions. The conclusions of theoretical analysis have been supported by empirical studies, which tested the use of instruments of participatory democracy in the planning and creation of communal strategies for solving social problems in one of the Polish voivodeships.

Keywords: Commune, democracy, participation, social policy, social problems.

HANDLING COMPLEXITY OF A COMPLEX SYSTEM DESIGN: PARADIGM, FORMALISM AND TRANSFORMATIONS

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Abstract:

Current systems complexity has reached a degree that requires addressing conception and design issues while taking into account environmental, operational, social, legal and financial aspects. Therefore, one of the main challenges is the way complex systems are specified and designed. The exponential growing effort, cost and time investment of complex systems in modeling phase emphasize the need for a paradigm, a framework and an environment to handle the system model complexity. For that, it is necessary to understand the expectations of the human user of the model and his limits. This paper presents a generic framework for designing complex systems, highlights the requirements a system model needs to fulfill to meet human user expectations, and suggests a graphbased formalism for modeling complex systems. Finally, a set of transformations are defined to handle the model complexity.

Keywords: Higraph-based, formalism, system engineering paradigm, modeling requirements, graph-based transformations.

THE PHATIC FUNCTION AND THE SOCIALIZING ELEMENT OF PERSONAL BLOGS

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Abstract:

The phatic function of communication is a vital element of any conversation. This research paper looks into this function with respect to personal blogs maintained by Indian bloggers. This paper is a study into the phenomenon of phatic communication maintained by bloggers through their blogs. Based on a linguistic analysis of the posts of twenty eight Indian bloggers, writing in English, studied over a period of three years, the study indicates that though the blogging phenomenon is not conversational in the same manner as face-to-face communication, it does make ample provision for feedback that is conversational in nature. Ordinary day to day offline conversations use conventionalized phatic utterances; those on the social media are in a perpetual mode of innovation and experimentation in order to sustain contact with its readers. These innovative methods and means are the focus of this study. Though the personal blogger aims to chronicle his/her personal life through the blog, the socializing function is crucial to these bloggers. In comparison to the western personal blogs which focus on the presentation of the 'bounded individual self', we find Indian personal bloggers engage in the presentation of their 'social selves'. These bloggers yearn to reach out to the readers on the internet and the phatic function serves to initiate, sustain and renew social ties on the blogosphere thereby consolidating the social network of readers and bloggers.

Keywords: Personal blogs, phatic, social-selves, blog readers.

The Methodology of Out-Migration in Georgia

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Abstract:

Out-migration is an important issue for Georgia as well as since independence has loosed due to emigration one fifth of its population. During Soviet time out-migration from USSR was almost impossible and one of the most important instruments in regulating population movement within the Soviet Union was the system of compulsory residential registrations, so-called “propiska”. Since independent here was not any regulation for migration from Georgia. The majorities of Georgian migrants go abroad by tourist visa and then overstay, becoming the irregular labor migrants. The official statistics on migration published for this period was based on the administrative system of population registration, were insignificant in terms of numbers and did not represent the real scope of these migration movements. This paper discusses the data quality and methodology of migration statistics in Georgia and we are going to answer the questions: what is the real reason of increasing immigration flows according to the official numbers since 2000s?

Keywords: Data quality, Georgia, methodology, out-migration, policy.

Urban and Rural Population Pyramids in Georgia Since 1950s

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Abstract:

In the years followed independence, an economic crisis and some conflicts led to the displacement of many people inside Georgia. The growing poverty, unemployment, low income and its unequal distribution limited access to basic social service have had a clear direct impact on Georgian population dynamics and its age-sex structure. Factors influencing the changing population age structure and urbanization include mortality, fertility, migration and expansion of urban. In this paper presents the main factors of changing the distribution by urban and rural areas. How different are the urban and rural age and sex structures? Does Georgia have the same age-sex structure among their urban and rural populations since 1950s?

Keywords: Age and sex structure of population, Georgia, migration, urban-rural population.

UNDERSTANDING EUROPE'S ROLE IN THE AREA OF LIBERTY, SECURITY AND JUSTICE AS AN INTERNATIONAL ACTOR

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Abstract:

The area of liberty, security and justice within the European Union is still a work in progress. No one can deny that the EU struggles between a monistic and a dualist approach. The aim of our essay is to first review how the European law is perceived by the rest of the international scene. It will then discuss two main mechanisms at play: the interpretation of larger international treaties and the penal mechanisms of European law. Finally, it will help us understand the role of a penal Europe on the international scene with concrete examples. Special attention will be paid to cases that deal with fundamental rights as they represent an interesting case study in Europe and in the rest of the World. It could illustrate the aforementioned duality currently present in the Union's interpretation of international public law. On the other hand, it will explore some specific European penal mechanism through mutual recognition and the European arrest warrant in the transnational criminality frame. Concerning the interpretation of the treaties, it will first, underline the ambiguity and the general nature of some treaties that leave the EU exposed to tension and misunderstanding then it will review the validity of an EU act (whether or not it is compatible with the rules of International law). Finally, it will focus on the most complete manifestation of liberty, security and justice through the principle of mutual recognition. Used initially in commercial matters, it has become "the cornerstone" of European construction. It will see how it is applied in judicial decisions (its main event and achieving success is via the European arrest warrant) and how European member states have managed to develop this cooperation.

Keywords: European penal law, International scene, Liberty security and justice area, mutual recognition.

OBSESSION OF TIME AND THE NEW MUSICAL ONTOLOGIES: THE CONCERT FOR SAXOPHONE, DANIEL KIENTZY AND ORCHESTRA BY MYRIAM MARBE

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Abstract:

For the music composer Myriam Marbe the musical time and memory represent 2 (complementary) phenomena with conclusive impact on the settlement of new musical ontologies. Summarizing the most important achievements of the contemporary techniques of composition, her vision on the microform presented in The Concert for Daniel Kientzy, saxophone and orchestra transcends the linear and unidirectional time in favour of a flexible, multivectorial speech with spiral developments, where the sound substance is auto(re)generated by analogy with the fundamental processes of the memory. The conceptual model is of an archetypal essence, the music composer being concerned with identifying the mechanisms of the creation process, especially of those specific to the collective creation (of oral tradition). Hence the spontaneity of expression, improvisation tint, free rhythm, micro-interval intonation, coloristictimbral universe dominated by multiphonics and unique sound effects, hence the atmosphere of ritual, however purged by the primary connotations and reprojected into a wonderful spectacular space. The Concert is a work of artistic maturity and enforces respect, among others, by the timbral diversity of the three species of saxophone required by the music composer (baritone, sopranino and alt), in Part III Daniel Kientzy shows the performance of playing two saxophones concomitantly. The score of the music composer Myriam Marbe contains a deeply spiritualized music, full or archetypal symbols, a music whose drama suggests a real cinematographic movement.

Keywords: Archetype, chronogenesis, concert, multiphonics.