

ABSTRACT BOOK



AVRASYA 7. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ



AVRASYA

7th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

March 10-12,2023

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7TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES
MARCH 10-12, 2023
BUDAPEST

Edited By
PROF. DR. ALİ BİLGİLİ

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DATE – PLACE
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EVALUATION PROCESS
All applications have undergone a double-blind peer review process.

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PRESENTATION
Oral presentation

PERCENTAGE OF PARTICIPATION
45% FROM Turkey And 55% From Other Countries

LANGUAGES
Turkish, English, Russian, Persian, Arabic

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15TH INTERNATIONAL GROUP EXHIBITION "ADVENTURE OF ART FROM TRADITIONAL TO CONTEMPORARY"

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**18. 02. 2023 11: 00 – 13: 00 - Time zone in Budapeste
Hotel Zenit Kongre Salonu "Dune Meeting Room"**

HALL: 4 SESSION: 1 MODERATOR: Ferah Erdemir

Dr. Öğr. Üyesi ALİ EROL

GELİR VERGİSİ TARİFESİNDEKİ SORUNLAR VE KALICI
ÇÖZÜMLER

Dr. Öğr. Üyesi ALİ EROL

TÜM YÖNLERİYLE TÜRK VERGİ HUKUKUNDA İHBAR MÜESSESESİ

Aynur Bağırli

AZERBAYCAN'DA SOCIAL TEHLİKELERE MÜCADELEDE
UYGULANAN MODELİN ÖZELLİKLERİ

Arş. Gör Abdussamed ATASOY

İSLAM VE OSMANLI HUKUKUNDA ŞÜRB SUÇUNUN İSPAT
YÖNTEMLERİ

11.03. 2023

10: 00 – 12:00 Time zone in Turkey (GMT+3)

Meeting ID: 839 8735 7300

Passcode: 1012032

HALL:1 SESSION: 1

MODERATOR: Arş. Gör. Dr., Bengisu KAYA ÖZGÜL

Burcuhan TÜRKYILMAZ Tahir ATICI	RESEARCH OF THE LEVEL OF INTEREST IN BIOTECHNOLOGY IN STUDENTS SECONDARY EDUCATION BIOLOGY CURRICULUM
Doktora Öğrencisi, CANER ÇABUK Prof. Dr. CENGİZ ÖZYÜREK	HAFIZA TEKNİĞİ STRATEJİLERİNİN 6.SINIF FEN BİLGİSİ DERSİNDE KULLANILMASININ ÖĞRENCİLERİN BAŞARILARINA VE KALICILIĞA ETKİSİ
Phd, dos., Babayeva Malahat Ramiz gizi	IDEALIZED, RELIGIOUS IMAGES IN AZERBAIJANI EPICS
Kübra KAYA ÜLKER	ETKİLEŞİMLİ OKUMA UYGULAMALARININ TÜRKÇE HAZIRLIK SINIFLARINDAKİ ÖĞRENCİLERİN AKADEMİK OKUMA BECERİLERİNE ETKİSİ
Arş. Gör. Dr., Bengisu KAYA ÖZGÜL	SINIF ÖĞRETMENİ ADAYLARININ İLK OKUMA VE YAZMA ÖĞRETİMİNE YÖNELİK ÖZ YETERLİK ALGILARI VE GÖRÜŞLERİ
Yüksek Lisans Öğrencisi, AYTEN ÖZBİLİR Dr. Öğrt. Üyesi, BAŞAK BEYDOĞAN TANGÖR	TÜRKİYE'DE İLİŞKİ DOYUMU İLE İLGİLİ YAPILAN ÇALIŞMALARIN DOKÜMAN ANALİZİ YÖNTEMİYLE İNCELENMESİ
Hilal Serap ERSAY Dr.Öğr.Üyesi Yücel KAYABAŞI	5. SINIF MATEMATİK DERS KİTABININ İNCELENMESİ
Hilal YALÇIN Hamza ÇALIŞICI	İLKÖĞRETİM 8. SINIF MATEMATİK DERSİ "EĞİM" KONUSUNA YÖNELİK BAŞARI TESTİ GELİŞTİRİLMESİ

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HALL:2 SESSION: 1

MODERATOR: Prof. Dr. Hüseyin DOĞRAMACIOĞLU

DILSHODA MUBARAKOVA	METAPHORS AND INTERPRETING LANGUAGE
Prof. Dr. Nuran ÖZLÜK Prof. Dr. Hüseyin DOĞRAMACIOĞLU	A TURKISH PRIVATE SCHOOL IN İZMİR IN THE 20 th CENTURY: BURHANÜ'L-MAARİF
Prof. Dr. Nuran ÖZLÜK Prof. Dr. Hüseyin DOĞRAMACIOĞLU	NAZİRE TO SİS: FERYAT-MUSAHİPZADE CELÂL
Öğretim Görevlisi, FEYZA ÖZDEMİR	TÜRKÇENİN YABANCI DİL OLARAK ÖĞRETİMİNDE ÇEVRE-KÜLTÜR ETKİLEŞİMİNDEN YARARLANILMASI: KISA HİKÂYELER İLE UYGULAMALI BİR ÖĞRETİM
Dr. Öğr. Üyesi, HACER MOHAN KÖMÜRCÜ	KONSERVATUVARLARIN OPERA ANASANAT DALLARINDA YÜRÜTÜLEN PİYANO DERSLERİNE YÖNELİK DERS PLANLARININ İNCELENMESİ: BİR MODEL ÖNERİSİ
Prof. Dr. Cristina Mirela Nicolaescu	CONUNDRUMS OF HAPPINESS AS SENSE OF LIFE
Dr. Aysel EYERCİ	FOSTERING LEARNER AUTONOMY OF PHARMACEUTICAL STUDENTS THROUGH PROBLEM-BASED LEARNING IN ESP CLASSES
Dr. Aysel EYERCİ	A LONGITUDINAL STUDY ON THE RELATIONSHIP BETWEEN ACADEMIC WRITING SKILLS AND OVERALL ACADEMIC ACHIEVEMENT OF TERTIARY-LEVEL OF EMI STUDENTS
Doç. Dr. ZEYNEP BAŞKAN TAKAOĞLU	SOFTWARE ENGINEERING STUDENTS' SOURCES OF INFORMATION FOR SOCIOSCIENTIFIC ISSUES

11.03.2023

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HALL: 3 SESSION: 1 MODERATOR: Prof. Dr. Ramazan BİÇER

Prof. Dr. Ramazan BİÇER	THE EFFECT AND CONTRIBUTION OF GLOBALIZATION TO RELIGION
Prof. Dr. Ramazan BİÇER	SECULARITY and RELIGION
Doç. Dr., RECEP ÖNAL	BELÂ VE MUSİBETLERİN YAŞANDIĞI ZOR ZAMANLARDA DİNİN YERİ, ÖNEMİ ve FONKSİYONLARI
Doç. Dr., RECEP ÖNAL	MÂTÜRİDÎ TEOLJİSİNİN SİSTEMLEŞMESİNE KATKI SAĞLAYAN ÖNCÜ İSİMLER: EBÜ'L-BEREKÂT EN-NESEFÎ ÖRNEĞİ
Dr. Öğr. Üyesi Eyup Akşit	ARAP DİLİNDE KÜÇÜLTME İSMİ: ANLAMSAL BİR YAKLAŞIM
Dr. Öğr. Üyesi İzzet MARANGOZOĞLU	LAFIZ-MANA AÇISINDAN KUR'ÂN'IN SÖYLEM ÜSLUBUNA ANALİTİK BİR YAKLAŞIM
Doç. Dr. COŞKUN BABA	ETHOS BAĞLAMINDA ROL MODEL İNSAN
Doç. Dr. COŞKUN BABA	MANTIK ÖĞRETİMİNDE KUR'AN-I KERİM'DEKİ KIYAS İNCELİKLERİ
Dr. Mustafa ATAK	SEKÜLERLEŞEN DÜNYADA GENÇLERİN DEĞİŞEN DİNDARLIK ALGILARI

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HALL: 4 SESSION: 1

MODERATOR: Öğr. Gör. Dr., EDA ADATEPE

Ayhan YURDAKUL
Doç. Dr. Aydoğan SOYGÜDEN

AN EXAMINATION OF THE SATISFACTION LEVELS OF CUSTOMERS USING ERCIYES SKI CENTER FACILITIES

Öğr. Gör. Dr., EDA ADATEPE

ÜNİVERSİTE ÖĞRENCİSİ-SPORCU BİREYLERİN SPORA KATILIM GÜDÜLERİNİN İNCELENMESİ

Yrd. Doç. Dr. Mustafa Behlül
Dr. Bingül Harmancı
Doç. Dr. Deniz Erdağ
Yrd. Doç. Dr. Musa Oytun

KKTC'DE VÜCUT GELİŞTİREN ERKEKLER'DE BEDEN ALGISI, KAS ALGISI BOZUKLUĞU VE NARSİSİSTİK ÖZELLİKLERİNİN İNCELENMESİ

Dr. Öğretim Üyesi, Tuğba MUTLU
BOZKURT

ÖĞRETMENİN CİNSİYETİ BEDEN EĞİTİMİ DERSİNE OLAN İLGİ İLE İLİŞKİLİ MİDİR?

Öğr.Gör.,DENİZ GÜNAY DEREBAŞI
Doç Dr. DENİZ ÖZGE YÜCELOĞLU
KESKİN
Öğr. Gör. CANAN ASAL ULUS

OKÇULUK SPORU YAPAN SPORCULARIN ORTOREKSİYA NERVOZA EĞİLİMLERİNİN FARKLI DEĞİŞKENLERE GÖRE İNCELENMESİ

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HALL: 5 SESSION: 1 MODERATOR: . Doç. Dr. EYÜP ŞAHİN

Assist. Prof. Dr. Taha YILMAZ Assoc. Prof. Dr. Halit BOZ	THE AHKÂMA EFFECT OF GARAIBU'L-QUR'ÂN LAW IN ISLAMIC LAW
Assist. Prof. Dr. Taha YILMAZ Assoc. Prof. Dr. Halit BOZ	İSLAM HUKUKUNDA KUR'ANDA GEÇEN MÜRADİF/YAKIN ANLAMLI KELİMELERİN MEZHEPLER ARASI AHKÂMA ETKİSİ
Dr. sajed Alkhlif Alsalh Dr. Adem Çalar	CRITICISM OF CURRICULUM TEACHING THE ARABIC GRAMMAR TO NON-NATIVE ARABIC STUDENTS (PRELIMINARY STUDENTS IN SHARIA- COLLEGES OF THEOLOGY IN TURKEY)
Assist. Prof. Dr. Rami İbrahim Mahmut	ABDULLAH İBN SABA: A HISTORICAL OR MYTHICAL FIGURE?
Doç. Dr. EYÜP ŞAHİN	İBN SİNÂ VE ARİSTOTELES'TE NEFSİN AKİBETİ: AHVÂLU'N-NEFS VE DE ANİMA BAĞLAMINDA BİR MUKAYESE
Assoc. Prof. Dr. Mustafa TUNÇER	MOLLA FENÂRÎ'NİN TEFSİRCİLİĞİ
Assoc. Prof. Dr. Ali Yılmaz	MUHALEFETTE İKEN SALTANATA KARŞI ÇIKANLARIN İKTİDARDA SINANMASI (HARİCİ/İBADİ RUSTEMİ DEVLETİ ÖRNEĞİ)
Doç. Dr. MUZAFFER TAN	İSMAİLİ VARLIK ANLAYIŞININ YENİ EFLATUNCU YORUMUNUN İLK TEMSİLCİLERİ: MUHAMMED B. AHMED EN-NESEFİ VE EBU YAKUB ES-SİCİSTANİ BAĞLAMINDA BİR DEĞERLENDİRME

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HALL: 6 SESSION: 1

MODERATOR: . Assoc.Prof.Dr. Nazife Erarslan

Nazife ERARSLAN DOĞAN Zafer GÜRSOY Büşra ŞEN	MEVCUT KÖPRÜ YAKLAŞIM ZEMİNİNİN DERİN ZEMİN KARIŞTIRMA (DSM) YÖNTEMİ İLE GÜÇLENDİRİLMESİ
Doç. Dr. Nazife ERARSLAN Büşra ŞEN Zafer GÜRSOY	SOIL LIQUEFACTION ASSESSMENT OF A HIGHWAY BRIDGE FOUNDATION
Assoc.Prof.Dr. Nazife Erarslan	INVESTIGATING THE MIXED-MODE I-II DEFORMATION CHARACTERISTICS OF ASPHALT CONCRETE MATERIALS
Yüksek Lisans Öğrencisi MEHMET KARTAL Doç. Dr. NAZİFE ERARSLAN	ASFALT BETON MALZEMELERİN ÇEKME VE MAKASLAMA GERİLMELERİ ALTINDA KIRILMA ÖZELLİKLERİNİN ARAŞTIRILMASI
DR. SAMET KILIÇ	THE INCREMENTAL DYNAMIC ANALYSIS OF MOMENT FRAME AND BRACED FRAME
DR. SAMET KILIÇ	THE SEISMIC DESIGN OF STEEL STRUCTURES WITH MULTI-HALL WORKING CRANES ACCORDING TO ASCE7-16
Prof. Dr. Bekir Cihad BAL Doç. Dr. Ümit AYATA	THE EFFECT OF ARTIFICIAL WEATHERING ON THE SHORE D HARDNESS VALUE AND SOME SURFACE ROUGHNESS PARAMETERS OF MONTERI PINE (PINUS RADIATA D DON) WOOD APPLIED WITH UV- CURABLE PARQUET VARNISH
Prof. Dr. Bekir Cihad BAL Doç. Dr. Ümit AYATA	THE EFFECT OF PARTICLE SIZE ON GLOSSINESS, COLOR AND WHITENESS INDEX OF COMPOSITE MATERIALS PRODUCED USING WASTE GLASS FLOUR AND HIGH DENSITY POLYETHYLENE (HDPE)

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HALL:7 SESSION: 1

MODERATOR: Muntanavadee Maytapattana

Kyriaki G. Giota George Kleftaras	SOCIAL MEDIA AND COUNSELING: OPPORTUNITIES, RISKS AND ETHICAL CONSIDERATIONS
MARTINA KANCIRUK Jac W. Andrews, Tyrone Donnon	MATERNAL SMOKING AND RISK OF CHILDHOOD OVERWEIGHT AND OBESITY: A META-ANALYSIS
MUNTANAVADEE MAYTAPATTANA	THE EFFECTS OF THE PARENT TRAINING PROGRAM FOR OBESITY REDUCTION ON HEALTH BEHAVIORS OF SCHOOL-AGE CHILDREN
Astrid de LEEUW PIERRE VALOIS	UNDERSTANDING PRIMARY SCHOOL STUDENTS' BELIEFS REGARDING THE ADOPTION OF PRO-ENVIRONMENTAL BEHAVIORS
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?
AKM REZAUL KARIM Tania Sharafat Abu Yusuf Mahmud	COGNITIVE EMOTION REGULATION IN CHILDREN IS ATTRIBUTABLE TO PARENTING STYLE, NOT TO FAMILY TYPE AND CHILD'S GENDER
Rachel C. F. SUN	TEACHERS' AND STUDENTS' CAUSAL EXPLANATIONS FOR CLASSROOM MISBEHAVIOR: SIMILARITIES AND DIFFERENCES
Toshitaka HIGASHINO Naoki WAKAMIYA	VERIFICATION AND PROPOSAL OF INFORMATION PROCESSING MODEL USING EEG-BASED BRAIN ACTIVITY MONITORING

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HALL:8 SESSION: 1

MODERATOR: George Yungchih Wang

Khairullah Khan, Baharum B. Baharudin, Aurangzeb Khan, Fazal_e_Malik	KHAIRULLAH KHAN, BAHARUM B. BAHARUDIN, AURANGZEB KHAN, FAZAL_E_MALIK
George Yungchih Wang	A FRAMEWORK OF MONTE CARLO SIMULATION FOR EXAMINING THE UNCERTAINTY- INVESTMENT RELATIONSHIP
Trish O'Sullivan	THE EXCLUSION OF CONSUMER RIGHTS IN E-AUCTIONS – IS AN E-AUCTION REALLY AN AUCTION AT ALL?
Somayeh Farzin, Hossein Teimoori Nezhad	E-PROCUREMENT, THE GOLDEN KEY TO OPTIMIZING THE SUPPLY CHAINS SYSTEM
Petr Těplý	THE KEY CHALLENGES OF THE NEW BANK REGULATIONS
Zeljko Panian	THE PATH TO WEB INTELLIGENCE MATURITY
Haroula N. Delopoulos	BARRIERS AND OPPORTUNITIES FOR THE ADOPTION OF E-GOVERNANCE SERVICES
Jasminka Radolović	OPTIMIZATION OF TRANSFER PRICING IN A RECESSION WITH REFLECTION ON CROATIAN SITUATION
Satjaporn Tungsong, Gun Srijuntongsiri	APPLICATIONS OF CONIC OPTIMIZATION AND QUADRATIC PROGRAMMING IN THE INVESTIGATION OF INDEX ARBITRAGE IN THE THAI DERIVATIVES AND EQUITY MARKETS
R. Sammoura	A SIMULATION MODEL FOR BID PRICE DECISION MAKING

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HALL:9 SESSION:1

MODERATOR: Analiza Acuña-Villacorte

Geoffrey Sinha	CONNECTING LIVES INSIDE AND OUTSIDE THE CLASSROOM: WHY AND HOW TO IMPLEMENT TECHNOLOGY IN THE LANGUAGE LEARNING CLASSROOM
Jenny Hall, Alison Jaquet	ENHANCING LEARNING FOR RESEARCH HIGHER DEGREE STUDENTS
Analiza Acuña-Villacorte	MECHANISMS IN REGULATING LANGUAGE PRACTICES IN ELECTRONICS ENGINEERING: A PROGRAM PLAN FOR OUTCOMES-BASED EDUCATION
Mohammad Hassanzadeh	EXPERIMENTING THE INFLUENCE OF INPUT MODALITY ON INVOLVEMENT LOAD HYPOTHESIS
Salwa Aftab, Sehrish Riaz	IMPACT OF GRADE SENSITIVITY ON LEARNING MOTIVATION AND ACADEMIC PERFORMANCE
Ahmed Amin Mousa, M. Abd El Salam	PROPOSED PROGRAM FOR POSTGRADUATES IN EGYPT TO ACQUIRE THE SKILLS AND TECHNIQUES FOR PRODUCING CONCEPT CARTOONS FOR KINDERGARTEN CHILDREN
Sobhy Fathy A. Hashesh	THE EFFECT OF THE ANDALUS KNOWLEDGE PHASES AND TIMES MODEL OF LEARNING ON THE DEVELOPMENT OF STUDENTS' ACADEMIC PERFORMANCE AND EMOTIONAL QUOTIENT
Lena Shulyakovskaya	MILLENNIAL TEACHERS OF CANADA: INNOVATION WITHIN THE BOXED-IN CONSTRAINTS OF TRADITION
Ahmed Amin Mousa, M. Abd El-Salam	EMPLOYING QR CODE AS AN EFFECTIVE EDUCATIONAL TOOL FOR QUICK ACCESS TO SOURCES OF KINDERGARTEN CONCEPTS
Irina-Ana Drobot	TEACHING ENGLISH TO ENGINEERS: BETWEEN ENGLISH LANGUAGE TEACHING AND PSYCHOLOGY

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HALL:10 SESSION: 1

MODERATOR: Tamara Kelly

Sameer Kumar, Jariah Mohd. Jan	HUBS AS CATALYSTS FOR GEOSPATIAL COMMUNICATION IN KINSHIP NETWORKS
Zhanar Aldubasheva, Elnura Assyltayeva, Mukhtar Senggirbay, Gaziza Aldubashova	THE U.S. AND CENTRAL ASIA: RELIGION, POLITICS, IDEOLOGY
Jooyeon Yook, Wonjun Ko	ANALYSIS ON THE GAME-PLAYING TENDENCY OF SNGS (SOCIAL NETWORK GAMES) USERS BY GENDER
Sera Syarmila Sameon, Rohaini Ramli	E-VOTING: A TRUSTWORTHINESS IN DEMOCRATIC; A VIEW FROM TECHNOLOGY, POLITICAL AND SOCIAL ISSUE
Khawla Ben Abderrahim	DEFINITION OF FOOT SIZE MODEL USING KOHONEN NETWORK
Tamara Kelly	THE IMPACT OF FINANCIAL SYSTEM ON MIXED USE DEVELOPMENT – UNREST IN UK AND SENSE OF SAFETY IN MIXED USE DEVELOPMENT
Pratoom Rekklang	POLITICAL INFORMATION EXPOSURES, POLITICIANS- PERCEPTIONS, POLITICAL ATTITUDES AND POLITICAL PARTICIPATIONS AMONG PEOPLE IN BANGKOK METROPOLITAN AREA
Bakr Hashem Paumeay Ahmed Alashwal	URBAN TRANSFORMATIONS OF THE MEDITERRANEAN CITIES IN LIGHT OF DEVELOPMENTS IN THE MODERN ERA
Benedetto Manganelli, Beniamino Murgante	SPATIAL ANALYSIS AND STATISTICS FOR ZONING OF URBAN AREAS
Aynaz Lotfata	SOCIO-SPATIAL RESILIENCE STRATEGIC PLANNING THROUGH UNDERSTANDING STRATEGIC PERSPECTIVES ON TEHRAN AND BATH

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HALL:11 SESSION: 1

MODERATOR: Kamila Tišlerová

Mohd Iskandar bin Illyas Tan, Iziati Saadah bt Ibrahim	SUPPLY CHAIN MANAGEMENT AND E-COMMERCE TECHNOLOGY ADOPTION AMONG LOGISTICS SERVICE PROVIDERS IN MALAYSIA
Taneli Eisto, Venlakaisa Hölttä	CUSTOMER-SUPPLIER COLLABORATION IN CASTING INDUSTRY: A REVIEW ON ORGANIZATIONAL AND HUMAN ASPECTS
Jasmine Yeap Ai Leen, T. Ramayah, Azizah Omar	THE IMPACT OF WEBSITE PERSONALITY ON CONSUMERS' INITIAL TRUST TOWARDS ONLINE RETAILING WEBSITES
Sharareh Mirsaeidi Farahani , Gholamreza Chitsaz	CONTINUAL IMPROVEMENT WITH INTEGRATED MANAGEMENT SYSTEM
Kamila Tišlerová	THE INTRODUCTION OF COMPULSORY ELECTRONIC EXCHANGE OF DOCUMENTS IN THE CZECH REPUBLIC: COMPARING EXPECTATION AND REALITY
Saima Ayaz, Zakir Hussain, Maqbool Hussain Sial	ROLE OF CREDIT ON PRODUCTION EFFICIENCY OF FARMING SECTOR IN PAKISTAN(A DATA ENVELOPMENT ANALYSIS)
Martin Macion	SUSTAINABILITY STRATEGY AND FIRM PERFORMANCE IN RESIDENTIAL TRADE AND INDUSTRY: A CONCEPTUAL ANALYSIS
Muhammad Mazhar Manzoor, Muhammad Aqeel, Abdul Sattar	FACTORS PAVING THE WAY TOWARDS ISLAMIC BANKING IN PAKISTAN
Jesus Orbe, Vicente Nunez-Anton	DURATION ANALYSIS OF NEW FIRMS IN THE BANKING INDUSTRY
Milan Rippel, Petr Těplý	OPERATIONAL RISK – SCENARIO ANALYSIS

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HALL:12 SESSION: 1 MODERATOR: Tanyatorn Panyasopon

Mohamed Afla, Mohamad Reza	SUSTAINABILITY OF URBAN CEMETERIES AND THE TRANSFORMATION OF MALAY BURIAL PRACTICES IN KUALA LUMPUR METROPOLITAN REGION
Mara Magda Maftai	THE CONTEXT-S INFLUENCE ON THE EVOLUTION OF CIORAN: THE OPTIONS OF AN ENGAGED PHILOSOPHER
Tanyatorn Panyasopon	THE CHARACTERISTICS OF THAI MOVIES AND FACTORS CONTRIBUTING TO BECOMING WIDELY KNOWN IN INTERNATIONAL MARKETS
D. Dosbatyrov	THE GENESIS OF THE ART OF THE KAZAKH SALS, SERIS AND PALUANS IN CHARACTERISTIC COMPARISON TO EUROPEAN HISTRIONES AND RUSSIAN SKOMORKHS
Farideh Alizadeh	BORIA IN MALAYSIA
Khajornjit Bunnag	FACTORS AFFECTING MEDIA LITERACY OF EARLY TEENAGERS
John Walton, Vishal Parikh	POWER DISTANCE AND KNOWLEDGE MANAGEMENT FROM A POST-TAYLORIST PERSPECTIVE
Zhamilya Boldykova, Assel Berdigulova	ORNAMENT AS A UNIVERSAL LANGUAGE OF PEACE (BASED ON COMPARATIVE ANALYSIS OF CULTURES OF PROTO-TURKIC PEOPLES AND INDIAN TRIBES OF NORTH AMERICA)
Bubpha Makesrithongkum	CAUSAL FACTORS AFFECTING ON TRUSTWORTHINESS AND SUCCESS OF THE NATIONAL PRESS COUNCIL OF THAILAND IN REGULATING PROFESSIONAL ETHICS IN VIEWS OF NEWSPAPER JOURNALISTS
Zhankuliyeva S. A.	FEATURES OF PARTY CONSTRUCTION IN THE COURSE OF POLITICAL MODERNIZATION OF KAZAKHSTAN

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HALL:13 SESSION: 1

MODERATOR: Adriana Ávila Zúñiga Nordfjeld

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
J. SAMUEL JESUDOSS	EFFICACY OF SELECTED MOBILITY EXERCISES AND PARTICIPATION IN SPECIAL GAMES ON PSYCHOMOTOR ABILITIES, FUNCTIONAL ABILITIES AND GAME PERFORMANCE AMONG INTELLECTUALLY DISABLED CHILDREN OF UNDER 14 AGE
Danielle MORIN Jennifer D.E.THOMAS Raafat G. SAADE	DEEP LEARNING AND VIRTUAL ENVIRONMENT
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
Barbara GAWDA	DIAGNOSIS OF HATE SCHEMAS IN PRISONERS WITH ANTISOCIAL PERSONALITY DISORDER (ASPD)
Waralak Vongdoiwang SIRICHAROEN, Nattanun SIRICHAROEN	MEDIA AND INFORMATION LITERACY (MIL) FOR THAI YOUTHS
ALIREZA BOLHARI ALI REZAEAN JAFAR BOLHARI FATEMEH ZARE	THE IMPACT OF OCCUPATIONAL STRESS ON QUALITY OF WORK LIFE AMONG THE STAFF OF E-WORKSPACE
Josephine S. LARKINGS Patricia M. Brown	MENTAL ILLNESS STIGMA AND CAUSAL BELIEFS: AMONG POTENTIAL MENTAL HEALTH PROFESSIONALS

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HALL: 14

SESSION: 1

MODERATOR: Sepulveda Juan

Zainab Almkhtar, Adel Merabet	MAXIMUM POWER POINT TRACKING BASED ON ESTIMATED POWER FOR PV ENERGY CONVERSION SYSTEM
Abhishek Priyam, Prabha Chand	EFFECT OF COLLECTOR ASPECT RATIO ON THE THERMAL PERFORMANCE OF WAVY FINNED ABSORBER SOLAR AIR HEATER
Mohammed W. Abdulrahman	SIMILITUDE FOR THERMAL SCALE-UP OF A MULTIPHASE THERMOLYSIS REACTOR IN THE CU- CL CYCLE OF A HYDROGEN PRODUCTION
Rishindra M. Sarviya, Ashish Agrawal	ENHANCEMENT OF THERMAL PERFORMANCE OF LATENT HEAT SOLAR STORAGE SYSTEM
Naim Suleyman Ting, Yakup Sahin, Ismail Aksoy	A ZVT-ZCT-PWM DC-DC BOOST CONVERTER WITH DIRECT POWER TRANSFER
Hossein Lotfizadeh, André McDonald, Amit Kumar	TECHNICAL ANALYSIS OF COMBINED SOLAR WATER HEATING SYSTEMS FOR COLD CLIMATE REGIONS
Avadhesh Yadav, Anunaya Saraswat	AN EXPERIMENTAL STUDY ON EVACUATED TUBE SOLAR COLLECTOR FOR STEAM GENERATION IN INDIA
Junjie Chen, Deguang Xu	COUPLING HEAT AND MASS TRANSFER FOR HYDROGEN-ASSISTED SELF-IGNITION BEHAVIORS OF PROPANE-AIR MIXTURES IN CATALYTIC MICRO-CHANNELS
Marina Kapsali, John S. Anagnostopoulos	TECHNO-ECONOMIC PROSPECTS OF HIGH WIND ENERGY SHARE IN REMOTE VS. INTERCONNECTED ISLAND GRIDS
Sepulveda Juan	RENEWABLE ENERGY TRENDS ANALYSIS: A PATENTS STUDY

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HALL: 1 SESSION: 2 MODERATOR: . Dr. Hüseyin Baran

Dr, NUR UYANIK ÇİRKİN

FASHION İN THE SCOPE OF THE RELATIONSHIP BETWEEN CERAMICS AND ARCHITECTURE İN INTERIOR DESIGN

Dr. Hüseyin Baran

DALL-E VE MİDJOURNEY PROGRAMLARI BAĞLAMINDA YAPAY ZEKÂ İLE GÖRSELLEŞTİRME

Dr. Hüseyin Baran

YAPAY ZEKÂ İLE GÖRSELLEŞTİRİLEN KONSEPTLERİN SANAL GERÇEKLİK ORTAMINDA MODELLENMESİ

Arş. Gör., MİHRİNAZ SÖYÜK GÜVEN

GELENEKSEL TÜRK EL SANATLARINDA CAM BONCUK SANATI

Arş. Gör. HASAN ZAHİD YURDAGÜL

BATI MÜZİĞİ NOTASYON SİSTEMİ İLE YAZILMIŞ TÜRK MÜZİĞİ ESERLERİNİN AREL-EZGİ- UZDİLEK NOTA YAZIM SİSTEMİNE AKTARIM TEKNİKLERİ VE MUALLİM İSMÂİL HAKKI BEY'İN DİLNİŞİN KÂR'I

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HALL: 2

SESSION: 2

MODERATOR: Doç.Dr. CANAN OLPAK KOÇ

Doç.Dr. CANAN OLPAK KOÇ	SOKAKTAKİ ADAM ROMANININ YAPISALCI ÇÖZÜMLEMESİ
Doç. Dr. Afina BARMANBAY	ŞAİR AĞACAN VE “TÜRKİYE SEFERİ”NİN ÜÇ VARYANTI POET AGACAN AND THE THREE VARIANTS OF THE “EXPEDITION TO TÜRKİYE”
Doç. Dr. Afina BARMANBAY	MEHEMMED HADİ’NİN “ARZU-Yİ DİL” VE “DİLEK ÖLMEZ” ŞİİRLERİ ÜZERİNE BİR İNCELEME
MERVE KOLDAMCA YILMAZ	A VOCABULARY-BASED ANALYSIS OF ANDONIS SAMARAKIS’ LITERATURE
MERVE KOLDAMCA YILMAZ	GIORGOS SEFERIS’ POETRY FROM A STYLISTIC PERSPECTIVE
Prof. Dr. ÜLKÜ ELİUZ SERAP YAĞIZ	A JOURNEY IN DAYDREAM: STRUCTURE IN NEZİHE MERİÇ’S “KEKLİK TÜRKÜSÜ” STORY
Kevser KAPLAN Doç. Dr. Aydın GÖRMEZ	DIFFERENT APPROACHES BETWEEN THE PIONEERS OF THE READER-RESPONSE CRITICAL THEORY
Şeymanur ÖZ	MAVİ RENGİN DEDE KORKUT HİKÂYELERİNE SEMBOLİK YANSIMASI
Dr. Öğretim Üyesi Zülküf KILIÇ	BİR HÜZÜN ŞAİRİ NEDİM
Dr. Öğretim Üyesi Zülküf KILIÇ	AKTİVİST BİR ŞAİR FUZÛLÎ’NİN ŞİİR POETİKASINDAN HAREKETLE DİVÂN ŞİİRİNDE GAZEL KASİDE NAZİM ŞEKİLLERİNİN TANIMLARININ ve DİVÂN ŞAİR BİLGİLERİNİN GÜNCELLENME GEREKLİLİĞİ
Dr. Öğretim Üyesi Zülküf KILIÇ	HALK ŞAİRİ HÜSEYİN’İN BİR ŞİİRİNDEN BÂD-I DİVÂN ŞİİRİ ESİNTİSİ

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HALL: 3 SESSION: 2

MODERATOR: Assoc. Prof. Dr. Nazile Abdullazade

Dr. Abdul Hadi	BELIEFS ABOUT HONOR-RELATED VIOLENCE AMONG MEN FROM PAKISTAN.
Assoc. Prof. Dr. Nazile Abdullazade	HAYDAR ALIYEV AND ARMY BUILDING IN AZERBAIJAN
YL. Öğrencisi Muhsin UYAR Dr. Öğr. Üyesi Elvan ATAMTÜRK	OTİZMLİ BİREYLERİN KURUM BAKIMI VE SOSYAL HİZMET
Öğr. Gör. Dr. YASİN SOYLU	TÜRKİYE'DEKİ YÜRÜYÜŞ ROTALARINA GİDEN TURİSTLERİN DENEYİMLERİNE YÖNELİK BİR DEĞERLENDİRME
Doç. Dr. ÇULPAN ZARİPOVA ÇETİN	TATAR HALK EDEBİYATINDA GÜNEŞ İLE İLGİLİ İNANIŞLAR
Doç. Dr. ÇULPAN ZARİPOVA ÇETİN	TATAR TÜRKLERİNDE TARIMCILIKLA İLGİLİ KAYBOLAN GELENEKLER
Asst. Prof. Erdener PEHLİVAN	ARCHAEOLOGICAL AND ARCHAEOMETRIC IDENTIFICATION OF AN UNGUENTARIUM
Dr. Öğr. Üyesi Ayşe KIZILTAŞ	DEPREMLER VE İÇ GÖÇ HAREKETLERİ

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HALL: 4 SESSION: 2 MODERATOR: Dr. Öğretim Üyesi Sinem KARAKUŞ

Asadova Basti Goshun	DEPENDENCE OF PHOTOSYNTHESIS IN PLANTS ON SALT TOLERANCE
Abdullayeva Shahla	ПАТОГЕННЫЕ ГРИБЫ ОБНАРУЖЕННЫЕ В ПЛОДАХ И ОВОЦАХ АПШЕРОНСКОГО ПОЛУОСТРОВА
Assoc. Prof. Dr. Faik GÖKALP	A STUDY ON INVESTIGATION OF EFFECTIVE COMPOUNDS AGAINST THE CANCER RECEPTOR IN DATE (Phoenix dactylifera) BY CHEMICAL CALCULATION METHOD
DAMLA HAZAL KATİP Arş. Gör. BİROL IŞIK Prof. Dr. FATİH ÇAKAR Prof. Dr. ÖZLEM CANKURTARAN	SEMİZOTU BİTKİSİNİN YÜZEY ÖZELLİKLERİNİN TERS GAZ KROMATOĞRAFİ YÖNTEMİ İLE BELİRLENMESİ
Fatma CALAYIR Dr. Öğr. Üyesi Sema KAPTANOĞLU	REMOVAL OF SOME COLORANTS FROM THE AQUEOUS SOLUTION WITH ACTIVATED CARBON OBTAINED FROM ACORNS
Dr. Öğretim Üyesi Sinem KARAKUŞ	BIOCONTROL OF BOTRYTIS CINEREA IN POSTHARVEST APPLES BY ESSENTIAL OIL COMBINATIONS
Dr.Öğr. Üyesi, ZEYNEP AYDOĞAN	EKLEMBACA KLILARIN GIDA OLARAK KULLANIMI

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HALL: 5 SESSION: 2 MODERATOR: Lec., Seda YETKİN YEŞİL

Lec., Seda YETKİN YEŞİL Assoc. Prof. Gonca OZMEN KOCA	STRUCTURAL ANALYZES TO FIND THE EFFECT OF PRESSURE IN SOFT- FINGER BENDING MOTION
Sena ÖZTÜRK Emel AKYOL	KRİSTALİZASYON ENGELLEYİCİ OLARAK BİYOPOLİMERLERİN TEST EDİLMESİ
Doç. Dr. GÜLLÜ KIRAT Doç. Dr. SERPİL SAVCI	GEOHERMAL ENERGY SYSTEMS AND USAGE AREAS
Doç. Dr. Serpil SAVCI Doç. Dr. Güllü KIRAT	PLATİNİN (Pt) GEMOLOJİDE KULLANIMI VE İNSAN SAĞLIĞI AÇISINDAN ÖNEMİ
Assist. Prof. Dr. Serhat Oğuzhan Kıvrak Lecturer Eren Gödek	EVALUATION OF FRESH STATE, MECHANICAL AND SUSTAINABILITY PROPERTIES OF CEMENT MORTARS INCORPORATING POZZOLANIC RICE HUSK ASHES PRODUCED FROM LOCAL WASTES OF ÇORUM
Hava Merve ÇELİK Doç. Dr. Mehmet KONAR Ersin DEMİRAY Öğr. Gör. Aydın TÜRKMEN	BATARYALARIN KALAN FAYDALI ÖMRÜNÜN İNCELENMESİ
Yağmur HAFIZOĞLU Süleyman Serdar PAZARLIOĞLU	BETA TRİKALSİYUM FOSFATA BARYUM TİTANAT İLAVESİNİN ETKİSİ
Yük. Kim. NURULLAH ÖZDOĞAN Çev. Müh. MUHSİN KÜRŞAD YAZICI Çev. Yük. Müh. HAVVA AĞIR Dr. AHMED ALBAHNASAWI Dr. ERCAN GÜRBULAK Doç. Dr. MURAT EYVAZ Prof. Dr. EBUBEKİR YÜKSEL	ARITILMIŞ SİNTİNE ATIKSUYUNDA HAVALANDIRMA İLE ORGANİK PARAMETRE GİDERİMİNİN İYİLEŞTİRİLMESİ

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HALL: 6 SESSION: 2 MODERATOR: Assist. Prof. Dr., İLKAY KALAY

Amil Volkan YILDIZHAN Arş. Gör. Ayberk AYDOĞMUŞ Dr. Öğr. Üyesi Arif Çağlar KONUKÇU	KAYNATMA VE PRESLEME SÜRESİNİN YOĞUNLAŞTIRILMIŞ KIZILÇAM (Pinus brutia Ten.) ODUNUNUN FİZİKSEL ÖZELLİKLERİ ÜZERİNE ETKİSİ
PELİNSU MELİSA AYDOĞDU ARŞ. GÖR. AKIN ŞENDAĞ DOÇ. DR. VEDAT ÇAVUŞ	ATIK AHŞAP KARIŞTIRMA ÇUBUKLARININ LEVHA ÜRETİMİNDE DEĞERLENDİRİLMESİ
Aleyna ATÇI Arş. Gör. Ayberk AYDOĞMUŞ Doç. Dr. Vedat ÇAVUŞ	DETERMINATION OF SOME PHYSICAL PROPERTIES OF LAMINATED VENEER TIMBER FROM HYBRIT POPLAR (Populus euramericana) PANELS
Levent KARA	BİAS GERİLİMİ VE Nb HEDEF AKIMININ TiAlCrNbN KAPLAMALARIN MORFOLOJİK, YAPISAL VE KİMYASAL ÖZELLİKLERİNE ETKİSİ
Assist. Prof. Dr., İLKAY KALAY	STRUCTURE AND MECHANICAL PROPERTIES OF Co 25 Ni 25 (HfTiZr) 50 , (CoNi) 45 (HfTiZr) 45 Al 10 AND (CoNi) 45 (HfTiZr) 45 Cu 10 HIGH ENTROPY ALLOYS
PhD. Candidate, ÖMER FIRAT TURŞUCULAR	A MINI REVIEW ON APPLICATIONS OF TEXTILE STRUCTURES COATED WITH CHITOSAN IN BIOMATERIALS
Doç. Dr., Volkan KIRMACI Dr., Murat KORKMAZ Dr., Ayhan DOĞAN	ALÜMİNYUM VE POLYAMİD NOZULLARI KULLANILARAK KARŞIT AKIŞLI RANQUE – HILSCH VORTEKS TÜPÜNÜNÜN PERFORMANSININ MAKİNE ÖĞRENİMİ METODLARI İLE KARŞILAŞTIRILMASI
Dr., Murat KORKMAZ Dr., Ayhan DOĞAN Doç. Dr., Volkan KIRMACI	KARŞIT AKIŞLI RANQUE – HILSCH VORTEKS TÜPÜNDE ÇELİK VE PİRİNÇ NOZULLARI KULLANILARAK MAKİNE ÖĞRENİMİ METODLARI İLE PERFORMANSLARININ KARŞILAŞTIRILMASI

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HALL:7 SESSION: 2

MODERATOR: Nidhi Gadura

Rudolf EGGER	THE WIDER BENEFITS OF NEGOTIATIONS: AUSTRIAN PERSPECTIVE ON EDUCATIONAL LEADERSHIP AS A 'POWER GAME' FOR TRADE UNIONS
Heba MUSTAFA ABDULLAH	IMPROVING LISTENING COMPREHENSION FOR EFL PRE-INTERMEDIATE STUDENTS THROUGH A BLENDED LEARNING STRATEGY
Shima NĪKANJAM, Badiossadat HASSANPOUR, Adi Irfan CHE ANĪ	EXPLORATION OF INFLUENTIAL FACTORS ON FIRST YEAR ARCHITECTURE STUDENTS' PRODUCTIVITY
Juha Kettunen	QUALITY AND QUANTITY IN THE STRATEGIC NETWORK OF HIGHER EDUCATION INSTITUTIONS
Nidhi GADURA	DIFFERENT ROLES FOR MENTORS AND MENTEES IN AN E-LEARNING ENVIRONMENT
Eugene ALLEVATO	ACHIEVING SUSTAINABLE DEVELOPMENT THROUGH TRANSFORMATIVE PEDAGOGIES IN UNIVERSITIES
JUHA KETTUNEN	THE STRATEGY OF THE INNOVATION ALLIANCE IN HIGHER EDUCATION
Tessa BERG, Emma GUION AKDAG	USING COLLABORATIVE PICTURES TO UNDERSTAND STUDENT EXPERIENCE
BĪBĪANA HLEBOVA	OTHERNESS OF ROMA IN INCLUSIVE EDUCATION OF ROMA PUPILS IN SLOVAKIA
Shahlan SURAT, SAEMAH RAHMAN, Saadiyah KUMMĪN	INQUIRY ON THE IMPROVEMENT TEACHING QUALITY IN THE CLASSROOM WITH META-TEACHING SKILLS

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HALL:8 SESSION: 2

MODERATOR: Nicole S. McKinney

Izabela Pietras	CHARACTERISTICS OF COGNITIVE FUNCTIONS AMONG POLISH ADOLESCENCE WITH SPELLING DISORDERS
Yoojin Chung	THE FEMALE BEAUTY MYTH FOSTERED BY THE MASS MEDIA
Nicole S. McKinney	SELF-ESTEEM AND STRESS LEVEL AMONG TRAUMATIC BRAIN INJURED ADULTS WITH MILD, MODERATE AND SEVERE INJURIES ATTENDING A DAY PROGRAM REHABILITATION FACILITY
Ana Pauna Zbigniew Pleszewski	CLINICAL AND METHODOLOGICAL ISSUES IN THE RESEARCH ON THE RAPE MYTH
Yasmin Binti Othman Mydin Mohd. Fadzillah Abdul Razak	COGNITIVE BEHAVIOUR THERAPY TO TREAT SOCIAL ANXIETY DISORDER: A PSYCHOLOGY CASE
Ana Pauna	EXPERT WITNESS TESTIMONY IN THE BATTERED WOMAN SYNDROME
Aiping Liu Xiaoping Ying Jing Luo	THE FLASHBULB MEMORY OF THE POSITIVE AND NEGATIVE EVENTS: WENCHUAN EARTHQUAKE AND ACCEPTANCE TO COLLEGE
J. Maksimainen	COGNITIVE LANDSCAPE OF VALUES – UNDERSTANDING THE INFORMATION CONTENTS OF MENTAL REPRESENTATIONS
M. Bambulyaka	THE IMPLICIT METHODS FOR THE STUDY OF TOLERANCE
Elena Chernyshkova	DYNAMIC OF AGGRESSIVE BEHAVIOR AT THE CONTEXT OF REFLECTIVE PROCESS
Subramaniam Chandran	HOW DOES PSYCHOANALYSIS HELP IN RECONSTRUCTING POLITICAL THOUGHT? AN EXERCISE OF INTERPRETATION

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HALL:9 SESSION: 2

MODERATOR: Eleftherios Giovanis

George Yungchih Wang	THE APPLICATION OF REAL OPTIONS TO CAPITAL BUDGETING
Paitoon Kraipornsak	IMPACT OF GOVERNMENT SPENDING ON PRIVATE CONSUMPTION AND ON THE ECONOMY: CASE OF THAILAND
Amilia Hasbullah, Wan Zahari Wan Yussof, Maziah Ismail	A PROPOSAL OF COMMUNITY BASED FACILITY MANAGEMENT PERFORMANCE (CBFM) IN THE EDUCATION SYSTEM OF BATUBARA DISTRICT IN INDONESIA
Tomáš Brabenec	CERTAIN IMPORTANT ASPECTS OF COST CONTRIBUTION ARRANGEMENTS IN FINANCIAL MANAGEMENT
Eleftherios Giovanis	APPLICATION OF ADAPTIVE NEURO-FUZZY INFERENCE SYSTEM IN THE PREDICTION OF ECONOMIC CRISIS PERIODS IN USA
Kazuhide Sugiyama, Hiroshi Osada	INTEGRATION PROCESS OF INDUSTRIAL DESIGN AND ENGINEERING DESIGN
Maarit Valo, Pertti Hurme	ATTRIBUTIONS BY TEAM MEMBERS FOR TEAM OUTCOMES IN FINNISH WORKING LIFE
Haksoon Kim	DOES CORPORATE GOVERNANCE OR TRANSPARENCY AFFECT FOREIGN DIRECT INVESTMENT?
Shahin Dezdar, Sulaiman Ainin	ERP IMPLEMENTATION SUCCESS IN IRAN: EXAMINING THE ROLE OF SYSTEM ENVIRONMENT FACTORS
Linda Sau-ling LAI	SOCIAL COMMERCE – E-COMMERCE IN SOCIAL MEDIA CONTEXT
Alireza Faed, David Forbes	IMPACT OF CUSTOMER MANAGEMENT SYSTEM IN IMPROVING CUSTOMER RETENTION: OPTIMIZATION OF NEGATIVE CUSTOMER FEEDBACK

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HALL:10 SESSION: 2 MODERATOR: Oluwatosin A. Ijabadeniyi

Savita Ahlawat Dhian Kaur	FOOD SECURITY IN INDIA: A CASE STUDY OF KANDI REGION OF PUNJAB
Nouf Saad Alnassar, Susan Grant, Ray Holland	DESIGN MANAGEMENT APPLICATIONS TO IMPROVE WORK ENVIRONMENT FOR FEMALE ACADEMICS IN SAUDI ARABIA
Sam Moshaver	EXPANDING AFFORDABLE HOUSING THROUGH INCLUSIONARY ZONING IN THE CITY OF TORONTO
Oluwatosin A. Ijabadeniyi	FOOD SAFETY CULTURE PARAMOUNT THAN TRADITIONAL FOOD SAFETY SYSTEM AND FOOD SAFETY CULTURE IN SOUTH AFRICAN FOOD INDUSTRIES
Sedat Cereci	ROLE OF DIRECTOR'S PHILOSOPHICAL APPROACH IN CINEMATOGRAPHIC EXPRESSION
Yvonne T. Haigh	CONFLICT, CONFUSION, CHOICE: A PHENOMENOLOGICAL APPROACH TO ACTS OF CORRUPTION
Amruta Khairnar, Joy Sen	PLANNING FOR MINIMIZATION OF SOCIOECONOMIC INEQUALITIES WITHIN VIDARBHA REGION, MAHARASHTRA, INDIA
Nuraddin Sadykov, Altynai Zhussipova, Omirkhan Abdimanuly	KAZAKH LITERATURE IN EMIGRATION AND WORKS OF MAZHIT AITBAYEV
M. Nogaibayeva, Zh. Kumganbayev	FEATURES OF FOLLOWING THE CUSTOMS AND TRADITIONS IN TURKESTAN IN THE LATE NINETEENTH AND EARLY TWENTIETH CENTURIES
Karen Armstrong	THE MASQUERADE OF LIFE, OUR MANY SELVES AND ISSUES OF PRIVACY

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HALL:11 SESSION: 2

MODERATOR: Anne A. Christopher

Alzahrani.M.E, Goodwin.R.D	TOWARDS A UTAUT-BASED MODEL FOR THE STUDY OF EGOVERNMENT CITIZEN ACCEPTANCE IN SAUDI ARABIA
Dominykas Broga	CAN WE SECURE SECURITY?
Noor Sulastry Yurni Ahmad , Ki-Soo Eun	THE RISE OF NATIONALISM AMONG SOUTH KOREAN YOUTH AND DEMOCRACY: AN ANALYSIS
Vincent Fromentin	MIGRATION AND UNEMPLOYMENT DURATION: THE CASE OF THE OECD COUNTRIES
Anne A. Christopher	DEIXIS AND PERSONALIZATION IN AD SLOGANS
Noor Mohammad	NEED TO IMPLEMENT THE ENVIRONMENTAL ACCOUNTING EDUCATION FOR SUSTAINABLE DEVELOPMENT: AN OVERVIEW
Tariq Rahim Soomro, Muhammad Sarwar	GREEN COMPUTING: FROM CURRENT TO FUTURE TRENDS

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HALL:12 SESSION: 2

MODERATOR: Paitoon Kraipornsak

A. Ramachandran	ECOLABELING AND GREEN CERTIFICATION FOR EFFECTIVE FISHERIES MANAGEMENT – AN ANALYSIS
Chummanond Natchaya, Rotchanakitumnuai Siriluck	DETERMINING THE ONLINE PURCHASING LOYALTY FOR THAI HERBAL PRODUCTS
E. Giovanis	APPLICATION OF FEED-FORWARD NEURAL NETWORKS AUTOREGRESSIVE MODELS IN GROSS DOMESTIC PRODUCT PREDICTION
Masood Uzzafer	A NEW DIMENSION IN SOFTWARE RISK MANAGMENT
E. Giovanis	PROPOSAL OF ADDITIONAL FUZZY MEMBERSHIP FUNCTIONS IN SMOOTHING TRANSITION AUTOREGRESSIVE MODELS
Rotchanakitumnuai, Siriluck	SUCCESS FACTORS OF LARGE SCALE ERP IMPLEMENTATION IN THAILAND
Asim Kumar Pal, Debabrata Nath, Sumit Chakraborty	A DISCRIMINATORY REWARDING MECHANISM FOR SYBIL DETECTION WITH APPLICATIONS TO TOR
Arazi Idrus, Christiono Utomo	FUNCTIONALITY OF NEGOTIATION AGENT ON VALUE-BASED DESIGN DECISION
Paitoon Kraipornsak	IMPACT OF GOVERNMENT SPENDING ON PRIVATE CONSUMPTION AND ON THE ECONOMY: THE CASE OF THAILAND
Habibollah Najafi, Amir Abbas Yazdani, Hosseinali Nahavandi	2 VALUE ENGINEERING AND ITS EFFECT IN REDUCTION OF INDUSTRIAL ORGANIZATION ENERGY EXPENSES
Haroon Altarawneh, Sattam Allahawiah	ELECTRONIC MARKETS HAS WEAKENED THE “TRADEOFF BETWEEN REACH AND RICHNESS“ IN THE INTERNET

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HALL:13 SESSION: 2

MODERATOR: Sholpan Zhandossova,

SUN MEI, Nagata KATSUYA, Onoda HIROSHI	CORPORATE SUSTAINABLE DEVELOPMENT ASSESSMENT BASE ON THE CORPORATE SOCIAL RESPONSIBILITY
Madina KENZHEGARANOVA, Aibol MUKHSIYNOV, Houman SANANDAJI	STATE PROGRAMS ANALYSIS AND SOCIAL CRISIS MANAGEMENT IN THE REPUBLIC OF KAZAKHSTAN: A DESCRIPTIVE STUDY
Pavel JANAK	APPLICATION OF MOTIVATIONAL FACTORS FOR UPLOADING FILMS TO WEBSITES ULOZTO.NET AND PIRATEBAY.ORG
Sholpan ZHANDOSSOVA, ERDEN ORDABEK, YELBOLSYN NAZAROV	THE NATIONAL SECURITY ASSURANCE OF THE REPUBLIC OF KAZAKHSTAN
Roelien GOEDE	A CRITICAL SOCIAL RESEARCH PERSPECTIVE ON SELF-DIRECTED LEARNING AND INFORMATION TECHNOLOGY PRACTITIONERS
Inês VIEIRA	THE PORTUGUESE PRESS PORTRAIT OF “ENVIRONMENTAL REFUGEES“
James MOIR	STUDENTS, KNOWLEDGE AND EMPLOYABILITY
Karen ARMSTRONG	MANAGING YOUR ONLINE REPUTATION: ISSUES OF ETHICS, TRUST AND PRIVACY IN A WIRED, “NO PLACE TO HIDE“ WORLD
SIROUS PANAHI JASON WATSON HELEN PARTRIDGE	SOCIAL MEDIA AND TACIT KNOWLEDGE SHARING: DEVELOPING A CONCEPTUAL MODEL
Ahmad Saiful Azlin Puteh Salin, Norlela Kamaludin, Siti Khadijah Ab Manan, Mohd Shatari Abdul Ghafar	DIRECTORS- ISLAMIC CODE OF ETHICS

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HALL: 14	SESSION: 2	MODERATOR: Shyama Ranjani Weerakoon
Rameswar Debnath, Haruhisa Takahashi	A COMPARISON OF SVM-BASED CRITERIA IN EVOLUTIONARY METHOD FOR GENE SELECTION AND CLASSIFICATION OF MICROARRAY DATA	
Akinwumi F. Olusegun	BIOEFFICACY OF SOME OIL-MIXED PLANT DERIVATIVES AGAINST AFRICAN MUD CATFISH (CLARIAS GARIEPINUS) BEETLES, DERMESTES MACULATUS AND NECROBIA RUFIPES	
Uun Yanuhar	THE ROLE OF IMMUNOGENIC ADHESIN VIBRIO ALGINOLYTICUS 49 K DA TO MOLECULE EXPRESSION OF MAJOR HISTOCOMPATIBILITY COMPLEX ON RECEPTORS OF HUMPBACK GROUPE CROMILEPTES ALTIVELIS	
Yetti Marlida , Rina Delfita , Neni Gusmanizar, Gita Ciptaan	IDENTIFICATION CHARACTERIZATION AND PRODUCTION OF PHYTASE FROM ENDOPHYTIC FUNGI	
Shyama Ranjani Weerakoon	DIRECT AND INDIRECT SOMATIC EMBRYOGENESIS FROM PETIOLE AND LEAF EXPLANTS OF PURPLE FAN FLOWER (SCAEVOLA AEMULA R. BR. CV. 'PURPLE FANFARE')	
Musammat F. Nahar, Anna Roujeinikova	STRUCTURAL BASIS OF RESISTANCE OF HELICOBACTERPYLORI DNAK TO ANTIMICROBIAL PEPTIDE PYRRHOCORICIN	
Puntipar Sonthiphand, Tawan Limpiyakorn	COMMUNITIES OF AMMONIA-OXIDIZING ARCHAEA AND BACTERIA IN ENRICHED NITRIFYING ACTIVATED SLUDGE	
Antonella Bandiera	HUMAN ELASTIN-DERIVED BIOMIMETIC COATING SURFACE TO SUPPORT CELL GROWTH	
Mahbobeh Hajirostamloo	A REPORT ON OCCURRENCE AND PARASITE-HOST OF LIGULA INTESTINALIS IN SATTARKHAN LAKE(EAST AZERBAIJAN-IRAN)	
Surakan Payakkhabut	VOCAL COMMUNICATION IN SOOTY-HEADED BULBUL; PYCNONOTUS AURIGASTER	

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HALL:1 SESSION: 1

MODERATOR: Dr. Öğr. Üyesi, Seçil ŞENEL UZUNKAYA

Albina Chingiz HASHİMOVA	PROMOTION OF SERVICE ACTIVITY EVALUATION IN AZERBAIJAN WITH NEW METHODS
Res. Assist. Dr. YELDA BEKTAŞ	AUTOMATION IN THE FAST-FOOD SECTOR: A CRITICAL DISCUSSION OF THE FUTURE OF WORK
Dr. Öğr. Üyesi Mehmet ETLİOĞLU	EXAMINATION OF WEBROOMING PURCHASING BEHAVIORS IN THE OMNICHANNEL MARKETING
Dr., Muharrem ÇAKIR	UZLAŞMA KOMİSYONLARININ VERGİLEMEDE ADALETE ETKİSİ
Öğr. Gör. Hamdi Ayyıldız, Öğr. Gör. Dr. Ömer Büyükbaş,	DÜŞÜK DÜNYA YÖRÜNGESİ EKONOMİSİ(LEO ECONOMY)'NDE YENİDEN TEDARİK ARACI OLARAK CYGNUS: ARTEMİS PROGRAMI'NDA UZAY TEDARİK ARAÇLARI
Öğr. Gör. Dr. Ömer Büyükbaş, Öğr. Gör. Hamdi Ayyıldız,	KENT PAZARLAMASINDA BİYOEKONOMİKLİK İÇİN OLİVAL ROTA'YA UYGUN PLANLAMA NASIL OLMALI?
Dr. Öğr. Üyesi, Seçil ŞENEL UZUNKAYA	OSMANLI DEVLETİ'NDE PARA VAKIFLARI
Dr. Öğr. Üyesi, Seçil ŞENEL UZUNKAYA	OSMANLI DEVLETİ'NDE REAYA SINIFI VE VERGİLER
Prof. Dr. Şebnem YÜCEL Doktora Öğrencisi Ferhat BOLUKÇU	COMPARİSON OF DİSEASE BURDEN AND ASSOCIATED RİSK FACTORS OF TURKEY AND G7 COUNTRİES
Prof. Dr. Şebnem YÜCEL Arş. Gör. Havva Nur ATALAY	COMPILING STUDY ON THE RELATIONSHIP BETWEEN CYBERCHONDRY AND KNOWLEDGE LEADERSHIP

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HALL:2 SESSION: 1

MODERATOR: Prof. Dr. SERTİF DEMİR

Dr.Öğretim Üyesi, İbrahim Atilla KARATAŞ	ÜRÜNLERDE PSİKOLOJİK FİYATLANDIRMANIN TÜKETİCİ SATINALMA DAVRANIŞI ÜZERİNE ETKİSİ
Dr.Öğretim Üyesi, İbrahim Atilla KARATAŞ	ÜRÜN AMBALAJININ TÜKETİCİ SATINALMA DAVRANIŞI ÜZERİNE ETKİSİNİN BİBLİYOGRAFİK YÖNTEM İLE İNCELENMESİ
Assist. Prof. Dr. Ceyhun GÜLER	THE NEW SOCIAL CONTRACT AS A TRADE UNION DEMAND AND ITS EVALUATION IN TERMS OF INSECURE GROUPS
Dr. Öğr. Üyesi, HALİM BAŞ	ÇALIŞMA HAYATINDA YENİ EĞİLİMLER: BÜYÜK İSTİFA VE SESSİZ İSTİFA KAVRAMLARININ TWİTTER ÜZERİNDEN ANALİZİ
Prof. Dr. SERTİF DEMİR	THE ROLE OF MILITARY IN HUMANITARIAN AID OPERATION
Prof. Dr. SERTİF DEMİR	CONSIDERATIONS ON THE SUSTAINABLE DEVELOPMENT IN TURKEY
PhD Candidate Kemal Yüce KUTUCUOĞLU	MANAGING QUALITY IN HIGHER EDUCATION IN TURKEY: CASE OF MUGLA SITKI KOÇMAN UNIVERSITY
Asst. Prof. Dr. Ekrem AYDIN	EVALUATION OF THE PERFORMANCE OF RESEARCH ON HOTEL BUSINESSES: COMPARISON OF TURKEY, ITALY AND SPAIN
Fatema Alzahraa Ied Prof. Dr. Veysel Yılmaz Doç. Dr. Erkan Arı	SOSYAL MEDYANIN SAĞLADIĞI BİLİMSEL HİZMET KALİTESİNİN ÖLÇÜLMESİ VE ÖĞRENCİLERİN AKADEMİK PERFORMANSINA ETKİSİ: YOUTUBE ÖRNEĞİ
Yelda SÜRMEİOĞLU Prof. Dr. Veysel Yılmaz Doç. Dr. Erkan Arı	HİZMET KALİTESİ İNDEKSİ GELİŞTİRİLMESİ: BİR OTOMOBİL SERVİSİNDE UYGULAMA

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HALL:3	SESSION: 1	MODERATOR : Assoc. Prof. Dr.Nezahat DOĞAN
Dr. Öğr. Üyesi Nevzat ÇALIŞ	TAKİPTEKİ FİNANSMAN ORANI VE SERMAYE GÜCÜ ORANININ ÖZKAYNAK KARLILIĞINA ETKİSİ; TÜRKİYE KATILIM BANKACILIĞI SEKTÖRÜ ÜZERİNE BİR UYGULAMA	
Dr. EMRE GÖKÇELİ	THE EFFECT OF FINANCIAL DEVELOPMENT ON THE USE OF RENEWABLE ENERGY: THE CASE OF TURKEY	
Arş. Görv. Zekiye AKTAŞ Arş. Görv. Furkan SERDAR	HESAPLANMIŞ MADDİ OLMAYAN DEĞER YÖNTEMİ İLE ENTELEKTÜEL SERMAYENİN ÖLÇÜLMESİ: BİST SEKTÖRLERİ ÜZERİNDE BİR UYGULAMA	
Assist. Prof. Dr. Tuncer YILMAZ	THE EFFECT OF FINANCIAL INSTABILITY ON BORSA İSTANBUL SECTOR INDICES	
MOHAMMED YASLAM MEFTAH BIN MAJSHER Dr.Öğr. ADNAN ABDALLA MOHAMMED OWEIDA	CREDIT CARDS IN PARTICIPANT BANKS AND ITS EFFECTS ON THE ECONOMY (TURK ISLAMIC BANKS AS A MODEL)	
Araş. Gör., Fatih EROĞLU Prof. Dr. Rahmi YÜCEL	DİJİTAL MUHASEBE UYGULAMALARINA İLİŞKİN TUTUMUN DEMOGRAFİK DEĞİŞKENLER AÇISINDAN İNCELENMESİ: MUHASEBE MESLEK MENSUPLARI ÖRNEKLEMİ	
Araş. Gör., Fatih EROĞLU Prof. Dr. Rahmi YÜCEL	MESLEK MENSUPLARININ DİJİTAL MUHASEBE UYGULAMALARINI KULLANMA NİYETLERİNİ ETKİLEYEN FAKTÖRLER: MANTIKLI EYLEM TEORİSİ ÇERÇEVESİNDE BİR İNCELEME	
Assoc. Prof. Dr.Nezahat DOĞAN	ANALYZING BOX OFFICE REVENUES OF UNITED STATES BY USING LONG RUN REGRESSION EQUATIONS	

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HALL:4	SESSION: 1	MODERATOR: Prof. Dr. Recep Yücel
Öğr. Gör. Dr., ERKAN DENK	TÜRK MUTFAĞINDA COĞRAFİ İŞARET TESCİLİ ALAN PEYNİRLER	
Dr. ŞİFA ELCİL	BİREYSEL İLETİŞİMDEN KURUMSAL İLETİŞİME STRES YÖNETİMİ: ETKİLİ İLETİŞİM STRATEJİLERİ PERSPEKTİFİNDEN BİR ANALİZ	
Prof. Dr. Recep Yücel Yüksek Lisans Öğrencisi Semih Yiğit	LİYAKAT İLE ETİK LİDERLİK TARZI ARASINDAKİ İLİŞKİ: İÇERİK ANALİZİ	
Prof. Dr. Recep Yücel Yüksek Lisans Öğrencisi Semih Yiğit	KATILIMCI LİDERLİK TARZININ ÇALIŞAN PERFORMANSI VE İŞTEN AYRILMA ÜZERİNE ETKİSİ: İÇERİK ANALİZİ	
Assoc. Prof. Dr., Işıl Arıkan Saltık PhD Candidate, İrem Kılıç	WEAVING THE SUSTAINABLE TOURISM IN ÜZÜMLÜ, FETHİYE	
Arş. Gör., Doğan ÇAPRAK Doç. Dr., Işıl ARIKAN SALTİK	SEARCHING FOR THE QUALIFIED EMPLOYEES IN TOURISM: AN EVALUATION OF RECRUITMENT DAYS	
ORHAN TANRIKULU Dr. Öğr. Üyesi CEVAT SÖYLEMEZ	TELEKOMÜNİKASYON SEKTÖRÜNDE MÜŞTERİLERİN MOBİL UYGULAMA KULLANIM DAVRANIŞLARI ÜZERİNE BİR İNCELEME	

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HALL:5

SESSION: 1

MODERATOR: Assoc. Prof. Dr. Fatma Nur YORGANCILAR ATATOPRAK

Dr. Öğr. Üyesi, Murat BEŞER
Doç. Dr. Nazife Özge BEŞER

EFFECTS OF EXPORT AND IMPORT ON CARBON DIOXIDE: EXAMPLE OF BRICS COUNTRIES

Assoc. Prof. Dr. Farhad Mikayilov
İbrahimli Şəms İbrahim

PROBLEMS OF INTEGRATING ARTIFICIAL INTELLIGENCE AND AUTOMATION INTO THE LABOR MARKET

Arş. Gör. Dr. HAVVA GÜLTEKİN

FİNANSAL KUZNETS EĞRİSİ HİPOTEZİ: TÜRKİYE ÖRNEĞİ

Prof. Dr. Yusuf Bayraktutan
Orkhan Mammadov

DIŞ TİCARET VE İKTİSADİ BÜYÜME İLİŞKİSİ: GEÇİŞ EKONOMİLERİ İÇİN ANALİZ

Prof. Dr. Yusuf Bayraktutan
Elgün Oruclu

AZERBAYCAN EKONOMİSİNDE HOLLANDA HASTALIĞI

Dr. MERAL ÇABAŞ

THE IMPACT OF WOMEN'S EMPLOYMENT BY EDUCATIONAL LEVEL ON ECONOMIC GROWTH:
PANEL FOURIER EVIDENCE FOR THE OECD

Assoc. Prof. Dr. Fatma Nur
YORGANCILAR ATATOPRAK

AN INVESTIGATION ON METHODS USED IN NEUROMARKETING AND
NEUROECONOMICS

Assoc. Prof. Dr. Fatma Nur
YORGANCILAR ATATOPRAK

TV COMMERCIAL ANALYSIS RESULTS IN TERMS OF EMOTIONAL ATTENTION: EEG ANALYSIS

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HALL:6

SESSION: 1

MODERATOR: Prof. Dr. Yusuf Genç

Ph.D Matilda LIKAJ Ph.D Ramiola KALEMI	A SOCIOLOGICAL ANAYLYZE OF EMIGRATION HISTORY AND POLICIES: CASE OF ALBANIAN EMIGRATION FLOWS IN TURKEY
Prof. Dr. Hacer TOR Tuğçe GÜNEŞ YÜCE	DEPREM VE KADIN
Esra Çabaz Aydın GÖRMEZ	PERCEPTIONS OF FEMINISM IN SOUTH KOREAN CULTURE
Hilal OKATAN	KAMUSAL/ÖZEL ALAN DİKOTOMİSİ VE KADIN
Ecem ERGÜLEN Mesut ŞÖHRET	CANADA’S IMMIGRATION POLICIES IN A MULTICULTURAL CONTEXT
Prof. Dr. Yusuf Genç	GÖÇMENLERİN SOSYAL PROBLEMLERİNİN ÇÖZÜMÜNDE SOSYAL HİZMET MESLEĞİNİN YERİ
Tuğba TÜRKÇÜ	İNSANLIĞIN SORUNU EKONOMİK EŞİTSİZLİK VE GELİR EŞİTSİZLİĞİ
Handan GÜNAY	HEMŞEHRİ DAYANIŞMASI ÜZERİNE TEMEL BİR İNCELEME
Handan GÜNAY	ÇİZİMLERİN DİLİNDEN GÖÇ
Prof. Dr. Yusuf Genç Doç. Dr. Hasan Hüseyin Taylan Dr. Arş. Gör. Hülya Yıldız Arş. Gör. Cengizhan Aynacı	MADDE KULLANIMINI ETKİLEYEN FAKTÖRLER
Sevde Nur ÇİL Zeynep YUMUŞ Sümeyra TEMİZHAN	ORTAOKUL ÖĞRENCİLERİN DEĞERLER EĞİTİMİNE BAKIŞI: SEVGİ EĞİLİMİ
Dr. ASLIHAN BURCU ÖZTÜRK ÇIPLAK	UNDERSTANDING PROPERTY CRIMES OF UNDERCLASS CHILDREN WITH CONSUMPTION CULTURE

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HALL:7

SESSION: 1

MODERATOR: Tamara Djurickovic MSc

Hastuti Saptorini	OCCUPANTS- BEHAVIOR AND SPATIAL IMPLICATIONS OF RIVERFRONT RESIDENTIAL IN YOGYAKARTA, INDONESIA
Charru Malhotra, Girija Krishnaswamy	CITIZENS- EXPECTATIONS FROM RURAL TELECENTRES: A CASE STUDY OF IMPLEMENTATION OF COMMON SERVICE CENTRES IN MUSHEDPUR VILLAGE, HARYANA, INDIA
Mirjana Radman-Funarić, Katarina Potnik Galić	RESEARCH OF POTENTIAL CLUSTER DEVELOPMENT IN PANNONIAN CROATIA
Suleiman Obeidat, Adnan Bashir, Wisam Abu Jadayil	THE IMPORTANCE OF CLASS ATTENDANCE AND CUMULATIVE GPA FOR ACADEMIC SUCCESS IN INDUSTRIAL ENGINEERING CLASSES
Suzana Basaruddin, Haryani Haron, Siti Arpah Noodin	DEVELOPING OMS IN IHL
Rachelle Bosua, Nina Evans	SOCIAL NETWORKS AND ABSORPTIVE CAPACITY
Tamara Djurickovic MSc	FROM E-GOVERNMENT TO E-DEMOCRACY CHALLENGES AND OPPORTUNITIES FOR DEVELOPMENT IN MONTENEGRO
Abdel-Samad M. Ali	SPATIAL THINKING ISSUES: TOWARDS RURAL SOCIOLOGICAL RESEARCH AGENDA IN THE THIRD MILLENNIUM
Mona Masood, Zakiah Zain	APPRECIATING, INTERPRETING AND UNDERSTANDING POSTERS VIA LEVELS OF VISUAL LITERACY
Anastasia Katsamaki, Nikolaos Bilalis, Vassilis Dedoussis	LEAN THINKING PROCESS IN THE DETERMINATION OF DESIGN SUGGESTIONS TO OPTIMIZE TREATMENT OF WEEE

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HALL:8 SESSION:1

MODERATOR: Ana Hol

Prakash Singh	LEARNERS' VIOLENT BEHAVIOUR AND DRUG ABUSE AS MAJOR CAUSES OF TOBEPHOBIA IN SCHOOLS
Juha Kettunen	CO-AUTHORSHIP NETWORKS OF SCIENTIFIC COLLABORATION
Valeda Dent	IMPACT OF FOUR READING AND LIBRARY FACTORS ON THE GRADE AVERAGE OF UGANDAN SECONDARY SCHOOL STUDENTS: A QUANTITATIVE STUDY
Mahmoud I. Syam, Osama K. El-Hafy	THE BEST METHODS OF MOTIVATING AND ENCOURAGING THE STUDENTS TO STUDY: A CASE STUDY
Eleni Ioanna Levantinou	THE EFFECT OF ICONIC AND BEAT GESTURES ON MEMORY RECALL IN GREEK'S FIRST AND SECOND LANGUAGE
Iva Košek Bartošová	DEVELOPMENT OF ELEMENTARY LITERACY IN THE CZECH REPUBLIC
Ana Hol	STUDENTS AS GLOBAL CITIZENS: LESSONS FROM THE INTERNATIONAL STUDY TOUR
Teresa Coffman, Mary Beth Klinger	PROSPECTIVE CLASS TEACHERS- COMPUTER EXPERIENCES AND COMPUTER ATTITUDES
Nancy Jennings, Chris Collins	VIRTUAL OR VIRTUALLY U: EDUCATIONAL INSTITUTIONS IN SECOND LIFE
Glenda A. Gunter	THE EFFECTS OF THE IMPACT OF INSTRUCTIONAL IMMEDIACY ON COGNITION AND LEARNING IN ONLINE CLASSES

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HALL:9	SESSION: 1	MODERATOR: Subramaniam Chandran
Fariba Haghbin, Othman Bin Ibrahim, Mohammad Reza Attarzadeh Niaki	KNOWLEDGE RELATIONSHIP MODEL AMONG USER IN VIRTUAL COMMUNITY	
Hasimah Sapiri Anton Abdulbasah Kamil, Razman Mat Tahar, Hanafi Tumin	DYNAMICS SIMULATION APPROACH IN ANALYZING PENSION EXPENDITURE	
Norma Rodrigues Gomes	KNOWLEDGE MANAGEMENT APPLIED TO FORENSIC SCIENCES	
Amir Hossein Davami, A< li Gholami, Ebrahim Panahpour	THE USED OF ENVIRONMENTAL ETHICS IN METHODS AND TECHNIQUES OF ENVIRONMENTAL MANAGEMENT	
Asim Tanvir, Numera Rafaqat	ADOPTABILITY ISSUES OF GPS IN PUBLIC SECTOR IN PAKISTAN	
Marzieh Mokhtaripour	SYSTEMS AND SOFTWARE SAFETY AND SECURITY	
Shoureshe Kanani, Hassan Zandi	A STUDY OF THE DAMAGES TO HISTORICAL MONUMENTS DUE TO CLIMATIC FACTORS AND AIR POLLUTION AND OFFERING SOLUTIONS	
Subramaniam Chandran	HOW DO POLITICIANS RECOVER THEIR COSTS? THE POLITICAL ECONOMY OF REPRESENTATIVE DEMOCRACY IN INDIA	
Claude Alavoine	ETHICS IN NEGOTIATIONS: THE CONFRONTATION BETWEEN REPRESENTATION AND PRACTICES	
Timothy Yoonsuk Lee, Jinhwan Yu, Somi Nah	A CONFUCIANISM OBSERVED IN DISASTER FILMS OF EAST ASIA	
Dragana Bjelić, Mirela Mezak Stastny	CONSTITUTIONAL COMPLAINT AS AN INSTRUMENT OF FULFILLING THE WORKER 'S RIGHTS IN CROATIAN LEGAL SYSTEM	

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HALL:10 SESSION: 1

MODERATOR: Siavash Asadi Ghajarloo

Nancy Ling Sze Leung	The Low-fertility problem in Hong Kong: Do Mainlanders- Births Help to Rejuvenate Low-fertility Problem?
Teodora Bakardjieva Galya Gercheva	Knowledge Management and e-Learning –An Agent-Based Approach
Muhammad Wajid Tahir Rubina Kauser Majid Ali Tahir	Brain Drain of Doctors; Causes and Consequences in Pakistan
Subramaniam Chandran	From Separatism to Coalition: Variants in Language Politics and Leadership Pattern in Dravidian Movement
Mahboubeh Molaei	Knowledge Management Model for Managing Knowledge among Related Organizations
Abbas Moshref Razavi, Rodina Ahmad	Users- Motivation and Satisfaction with IS
Jamalodin Alvani Fardin Boustani, Omid Tabiee, Masoud Hashemi	The Effects of Human Activity in Yasuj Area on the Health of Stream City
Siavash Asadi Ghajarloo	Mining Implicit Knowledge to Predict Political Risk by Providing Novel Framework with Using Bayesian Network
Nor'Aini Yusof, Ismael Younis Abu-Jarad	The Organizational Innovativeness of Public-Listed Housing Develo
Tingan Tang, Kimmo Karhu, Matti Hamalainen	Community Innovation in Sustainable Development: A Cross Case Study

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HALL:11	SESSION: 1	MODERATOR: Maral Mohamadi Zanjani
Michael Lissack	WHEN EXPLANATIONS “CAUSE“ ERROR: A LOOK AT REPRESENTATIONS AND COMPRESSIONS	
Lilac Al Safadi, Rana Abu Nafesa, Regina Garcia	COURSE ADOPTION OF MS TECHNOLOGIES – CASE STUDY	
Maria Satya Rani, Fandy Tjiptono, Suyoto	INTERNET: A NEW MEDIUM TO PROMOTE TRADITIONAL DANCES IN INDONESIA	
Aida Amirazodi	IRANIAN BAZAARS: THE ILLUSTRATION OF STABLE THOUGHTS	
Zaiton Samdin, Kasimu Abdu Bakori, Hamimah Hassan	FACTORS INFLUENCING ENVIRONMENTAL MANAGEMENT PRACTICES AMONG HOTELS IN MALAYSIA	
Helen P. Greatrex	ROBUST HUMAN RIGHTS GOVERNANCE: DEVELOPING INTERNATIONAL CRITERIA	
Senian Malie, Oriah Akir	DETERMINANTS FOR SUCCESS IN EXPATRIATION OF MALAYSIAN INTERNATIONAL CORPORATIONS	
Maral Mohamadi Zanjani	ECOTOURISM, EXPANSION, ALONGSIDE WITH DOMINANT FUNCTION OF KHARK (KHARG) AND KHARKO ISLANDS	
Shafiq ur Rehman, Jane-Lisa Coughlan	DESIGN AESTHETICS OF MOBILE INTERFACE	
Yimeng Deng, Klarissa T.T. Chang	A DESIGN FRAMEWORK FOR EVENT RECOMMENDATION IN NOVICE LOW-LITERACY COMMUNITIES	
Nurmukhambetov Ardak	SOCIAL AGGRAVATIONS DURING THE PERIOD OF MEDIEVAL WARS IN EUROPE	

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HALL:12 SESSION: 1

MODERATOR: Srisawas Siriporn,

Reza Sigari Tabrizi, Yeap Peik Foong, Nazli Ebrahimi	USING INTERPRETIVE STRUCTURAL MODELING TO DETERMINE THE RELATIONSHIPS AMONG KNOWLEDGE MANAGEMENT CRITERIA INSIDE MALAYSIAN ORGANIZATIONS
Ioan Popa, Radu Lupu, Cristiana Tudor	AN INVESTIGATION INTO THE ROLE OF MARKET BETA IN ASSET PRICING: EVIDENCE FROM THE ROMANIAN STOCK MARKET
Paula Ferreira, Filipa Vieira	EVALUATION OF AN OFFSHORE WIND POWER PROJECT: ECONOMIC, STRATEGIC AND ENVIRONMENTAL VALUE
Omid Jadidi, Fatemeh Firouzi, Enzo Bagliery	TOPSIS METHOD FOR SUPPLIER SELECTION PROBLEM
Ajay Gupta, Arvind Bhardwaj, Arun Kanda	FUNDAMENTAL CONCEPTS OF THEORY OF CONSTRAINTS: AN EMERGING PHILOSOPHY
Dahir A. Ga'al, Wardah Zainal Abidin	POLICY MANAGEMENT FRAMEWORK FOR MANAGING ENTERPRISE POLICIES
Srisawas Siriporn, Rotchanakitumnuai Siriluck	SOCIAL NETWORK MANAGEMENT ENHANCES CUSTOMER RELATIONSHIP
Svetlana Saksonova	APPROACHES TO DETERMINING OPTIMAL ASSET STRUCTURE FOR A COMMERCIAL BANK
Kamila Tislerova, Marta Zambochova	MARKETING SEGMENTATION OF STUDENTS WILLING TO STUDY ABROAD BASED ON CLUSTER ANALYSIS
J. Zambujal-Oliveira	A REAL OPTIONS ANALYSIS OF FOREIGN DIRECT INVESTMENT COMPETITION IN A NEWS UNCERTAIN ENVIRONMENT

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HALL:13

SESSION: 1

MODERATOR: Ibraheem Alzahrani

Juha Kettunen	THE STRATEGY OF THE INNOVATION ALLIANCE IN HIGHER EDUCATION
Bibiana Hlebova	OTHERNESS OF ROMA IN INCLUSIVE EDUCATION OF ROMA PUPILS IN SLOVAKIA
Md Rabiul Islam, Ben Wadham	EQUITY AND DIVERSITY IN BANGLADESH'S PRIMARY EDUCATION: STRUGGLING INDIGENOUS CHILDREN
Sujit K. Basak, Simon Collin	ANALYZING THE TECHNOLOGY AFFECTING ON THE SOCIAL INTEGRATION OF STUDENTS AT UNIVERSITY
Samal Abzhanova, Saule Mussabekova	THE EFFECTIVENESS OF IMPLEMENTING INTERACTIVE TRAINING FOR TEACHING KAZAKH LANGUAGE
Simin Sadeghi-Saeb	USING METACOGNITIVE STRATEGIES IN READING COMPREHENSION BY EFL STUDENTS
Abdul Rofiq Badril Rizal Muzammil	THE INVESTMENT OF ISLAMIC EDUCATION VALUES TOWARD CHILDREN IN THE EARLY AGE THROUGH STORY-TELLING METHOD
Mustafa Jahanara	THE RELATIONSHIP OF EMOTIONAL INTELLIGENCE, PERCEIVED STRESS, RELIGIOUS COPING WITH PSYCHOLOGICAL DISTRESS AMONG AFGHAN STUDENTS
Ibraheem Alzahrani	THE ROLE OF THE CONSTRUCTIVIST LEARNING THEORY AND COLLABORATIVE LEARNING ENVIRONMENT ON WIKI CLASSROOM AND THE RELATIONSHIP BETWEEN THEM
Elena Krelja Kurelović, Jasminka Tomljanović, Vlatka Davidović	INFORMATION OVERLOAD, INFORMATION LITERACY AND USE OF TECHNOLOGY BY STUDENTS
Brandy Yee, Dianne Yee	LEADING, TEACHING AND LEARNING "IN THE MIDDLE": EXPERIENCES, BELIEFS, AND VALUES OF INSTRUCTIONAL LEADERS, TEACHERS, AND STUDENTS IN FINLAND, GERMANY, AND CANADA

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HALL: 14

SESSION: 1

MODERATOR: Surinder Deswal

Esra E. Aleisa	DEVELOPING EFFICIENT TESTING AND UNLOADING PROCEDURES FOR A LOCAL SEWAGE HOLDING PIT
Surinder Deswal, Mahesh Pal	ARTIFICIAL NEURAL NETWORK BASED MODELING OF EVAPORATION LOSSES IN RESERVOIRS
Surinder Deswal	OXYGEN TRANSFER BY MULTIPLE INCLINED PLUNGING WATER JETS
Mahmoud M. S. Albattah	OPTIMIZATION OF THE CHARACTERISTIC STRAIGHT LINE METHOD BY A “BEST ESTIMATE“ OF OBSERVED, NORMAL ORTHOMETRIC ELEVATION DIFFERENCES
Sandeep Sharma, Sarabjit Singh, Meenakshi Sharma	PERFORMANCE ANALYSIS OF LOAD BALANCING ALGORITHMS
Janhavi Inamdar, S.K. Singh	PHOTOCATALYTIC DETOXIFICATION METHOD FOR ZERO EFFLUENT DISCHARGE IN DAIRY INDUSTRY: EFFECT OF OPERATIONAL PARAMETERS
Mohammad Reza Ghasemi, Amin Ghorbani	APPLICATION OF WAVELET NEURAL NETWORKS IN OPTIMIZATION OF SKELETAL BUILDINGS UNDER FREQUENCY CONSTRAINTS
Yogesh Aggarwal	MODELING OF REINFORCEMENT IN CONCRETE BEAMS USING MACHINE LEARNING TOOLS
Ahmad Munawar	PUBLIC TRANSPORT REFORM IN INDONESIA, A CASE STUDY IN THE CITY OF YOGYAKARTA

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HALL: 1

SESSION:2

MODERATOR: Assoc. Prof. Dr. Pınar ÖZDEN CANKARA

Doktora Öğrencisi, HACER ELMACI	TÜRKİYE'DE JAPONYA ÇALIŞMALARININ KURUMASALLAŞMASI
Doktora Öğrencisi, HACER ELMACI	THE ENTHRONEMENT OF NARUHITO: EMPERORSHIP AND NATIONAL IDENTITY IN CONTEMPORARY JAPAN
Dr. Öğr. Üyesi Hakan TURAN	BİLİŞİM SUÇLARINDA ULUSLARARASI ADLİ YARDIMLAŞMA: HUKUKİ AÇIDAN TÜRKİYE ÜZERİNE BİR DEĞERLENDİRME
Cemaleddin GÜVENÇ Dr. Öğr. Üyesi Hakan TURAN	TÜRK TİPİ BAŞKANLIK SİSTEMİNDE SEÇİM HÂKİMLERİNİN BELİRLENMESİNE YÖNELİK ÖNERİLER
Doç. Dr. Kemal YAMAN	TEHLİKELİ MALLARIN ULUSLARARASI KARAYOLUYLA TAŞINMASI KONUSUNDA TÜRKİYE'NİN POLİTİKASI
Doç. Dr. Kemal YAMAN	SAĞLIKLI KENT İÇİN DAYANIKLI BİNALAR OLUŞTURMADA 4708 SAYILI KANUNUN ÖNEMİ
Assoc. Prof. Dr. Pınar ÖZDEN CANKARA	DEPRIVATION: SOCIO-ECONOMIC PROBLEMS FACED BY THE PALESTINIAN PEOPLE IN THE COVID 19 PANDEMIC
Assoc. Prof. Dr. Yavuz CANKARA	SOCIO-ECONOMIC PROBLEMS IN COVID- 19 EPIDEMICS IN IRAN
Doktora Öğrencisi, Duygu Aksu Doç. Dr., Elvettin Akman	METVERSE VE SANAL KENT YÖNETİMİ
Doktora Öğrencisi, Duygu Aksu Doç. Dr., Elvettin Akman	DİJİTAL VERİLERİN KORUNMASINDA SİBER ORTAKLARIN ROLÜ: SİBER GÜVENLİK ŞİRKETLERİ ÜZERİNE BİR ARAŞTIRMA
Dr. Öğr. Üyesi ÖMER ŞEN	AKILLI KENT KAVRAMI VE TÜRKİYE KENT COĞRAFYASINDAKİ YANSIMALARI

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HALL: 2	SESSION:2	MODERATOR: Assoc. Prof. Dr. Meral EKİM,
K.R.Padma K.R.Don	STRATEGIES FOR SUSTAINABILITY MANAGEMENT IN THE COVID-19 PANDEMIC: DISRUPTION OF EDUCATIONAL SYSTEM	
K.R.Padma K.R.Don	HIGHER LEARNING INSTITUTES STARTED IMPLEMENTATION OF NEP2020-A NEW HOPE FOR EDUCATION	
Dr.Haqverdiyev Bəxtiyar David oğlu Dr. Kərimova Rəna Cabbar kızı	MECHANISM OF FORMATION OF ACUTE INTESTINAL OBSTRUCTION OF NON-TUMOR ORIGIN IN PEOPLE AGED 62 YEARS AND OLDER AND METHOD OF SURGICAL REMOVAL OF PATHOLOGY	
Dr. Kərimova Rəna Cabbar kızı Şahməmmədova Sevinc Osman kızı Əzizova Əsmət Nizami kızı Cəfərova Zəmfira İbrahim kızı Yusufova Xədicə Cəmil kızı Bayramov Adil Allahyar oğlu	PATHOLOGICAL CHANGES IN THE LIVER CAUSED BY HARMFUL SUBSTANCES USED IN HOUSEHOLDS AND LABORATORIES, IRON DEFICIENCY ANEMIA AND CORRELATION WITH THE ENDOCRINE SYSTEM	
Uzman Doktor Ela ERTEN	PEDİATRİK ABDOMİNAL CERRAHİ GEÇİREN 2 OLGUMUZDA USG EŞLİĞİNDE M-TAPA BLOK TECRÜBEMİZ	
Uzm.Dr. Esra Özsoy Kayaokay	DİYABETİK AYAK OLGULARININDA AMPUTASYON ORANININ TEK MERKEZLİ İNCELENMESİ	
Assoc. Prof. Dr. Meral EKİM, Prof. Dr. Hasan EKİM	THE IMPORTANCE OF SLOWING AGING	
Assoc. Prof. Dr. Meral EKİM, Prof. Dr. Hasan EKİM	AN IMPORTANT ANTIOXIDANT: ALPHA LIPOIC ACID	
Aynur ALİYEVA Hasibe VURAL Sona EMİNOVA Hatice Gül DURSUN	CHRYSOPHANOL EXHIBITS ANTICANCER EFFECT BY REGULATING EXPRESSION OF WNT/B-CATENIN SIGNALING PATHWAY GENES IN NEUROBLASTOMA CELLS	

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HALL: 3

SESSION:2

MODERATOR: Doç. Dr. Handan ÖZCAN

Sevgi ODABAŞ Doç. Dr. Handan ÖZCAN	DOĞUMDA EŞ DESTEĞİ
Sevgi ODABAŞ Doç. Dr. Handan ÖZCAN	AFETLERDE ANNE SÜTÜ BANKACILIĞININ ÖNEMİ
SENA YÖN Doç. Dr. HANDAN ÖZCAN	OBSTETRİK ŞİDDET VE ETKİLERİ
SENA YÖN Doç. Dr. HANDAN ÖZCAN	GÖÇMEN KADINLARDA SAĞLIK RİSKLERİ
Seraynur APIK Doç. Dr. HANDAN ÖZCAN	AİLE İÇİ ŞİDDET ve GEBELİK
Işıl ÇELİK Doç. Dr. HANDAN ÖZCAN	GEBELİKTE BESLENME
Işıl ÇELİK Doç. Dr. HANDAN ÖZCAN	PLANSIZ GEBELİKLER VE SONUÇLARI
Yaren KEÇECİ, Doç. Dr. HANDAN ÖZCAN	CİNSEL YOLLA BULAŞAN HASTALIKLAR ve ERKEK İNFERTİLİTESİ ÜZERİNE ETKİSİ
Enzel KÖKSALDI Doç. Dr. Handan ÖZCAN	DOĞUM SONU KANAMALARIN YÖNETİMİNDE EBELİK BAKIMININ ÖNEMİ
Enzel KÖKSALDI Doç. Dr. Handan ÖZCAN	ANNE VE BEBEK BAĞLANMASININ FETAL GELİŞİME ETKİSİ

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HALL: 4

SESSION:2

MODERATOR: Doç. Dr. EFKAN BAĞDA

Dr. Öğr. Üyesi Özge Temiz	TİTANYUM DİOKSİT NANOPARTİKÜLLERİ OREOCHROMIS NILOTICUS ÜZERİNDE NÖROTOKSİK ETKİLERİNİN BELİRLENMESİ
Dr. Öğr. Üyesi Özge Temiz	SİLİKON DİOKSİT NANOPARTİKÜL MARUZİYETİNDE <i>Oreochromis niloticus</i> 'un KARACİĞER ANTİOKSİDANT ENZİMLERİNDE OLUŞAN DEĞİŞİMLER
Efkan Bağda Ebubekir Ayhan Didem Duman Özge Göktuğ Temiz Mahmut Durmuş Esra Bağda	Cu (III) ve Ti(IV) FTALOSİYANİN BİLEŞİKLERİNİN <i>S. aureus</i> ve MRSA için ANTİBAKTERİYAL FOTODİNAMİK TERAPİ ETKİSİNİN DEĞERLENDİRİLMESİ
Doç. Dr. EFKAN BAĞDA	BAŞ ve BOYUN KANSERLERİNDE FOTODİNAMİK KEMOTERAPİ: IŞIĞIN GÜCÜ
Prof. Dr. Fatma Taş Arslan Arş. Gör. Adalet Yücel Prof. Dr. Sibel Küçükkoğlu	COVID-19 PANDEMİ SÜRECİNDE UYGULANAN UZAKTAN EĞİTİM SİSTEMİNE YÖNELİK HEMŞİRELİK ÖĞRETİM ELEMANLARININ GÖRÜŞLERİ
Dr. Öğr. Üyesi, Tuba ÇATAK Öğr. Gör. Gizem AÇIKGÖZ	ZORUNLU UZAKTAN EĞİTİMİN HEMŞİRELİK ÖĞRENCİLERİNİN MESLEKİ KİMLİK GELİŞTİRME SÜRECİNE ETKİSİ: BİR GÖZDEN GEÇİRME

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HALL: 5	SESSION:2	MODERATOR: Assoc. Prof. Dr. Nihat PAMUK
Assoc. Prof. Dr. Nihat PAMUK	CALCULATION AND MEASUREMENT OF MECHANICAL STRESS IN POWER DISTRIBUTION TRANSFORMER CORE USING FINITE ELEMENT METHOD	
Assoc. Prof. Dr. Nihat PAMUK	CONSTRUCTION AND COST ANALYSIS OF ULUS-BARTIN INDUSTRIAL TREATMENT PLANT GENERATING ELECTRIC ENERGY WITH PHOTOVOLTAIC PANELS	
Doktor Öğretim Üyesi, Salih Berkan AYDEMİR	GRADYAN TABANLI SLİME MOULD ALGORİTMASI	
Doktor Öğretim Üyesi, Funda KUTLU ONAY	0-1 SIRT ÇANTASI PROBLEMİNİN CEYLAN OPTİMİZASYON ALGORİTMASI İLE ÇÖZÜMÜ	
Researcher Ozgun Ahmet Efeturk Asst. Prof. Dr. Hamid Asadi Dereshgi Asst. Prof. Dr. Gizem Turgut	THE IMPACT OF EMOTIONAL FACES ON EXECUTIVE CONTROL OF ATTENTION: A STUDY	
HASAN KELEŞ	ON ROW CO-DIVISORS IN REGULAR MATRICES	
HASAN KELEŞ	ON THE OPERATION OF DIVISION AND LINEAR MAPPING	
BİRAND ALBOĞA HAYATİ MAMUR	EVALUATION OF THE ELECTRICAL ENERGY EFFICIENCY PRODUCED BY THE HARMANDALI LANDFILL FACILITY DURING THE COVID 19 PANDEMIC PERIOD	
ONUR EMRE GÖLEN MEHMET ALİ ÜSTÜNER HAYATİ MAMUR	TERMOELEKTRİK JENERATÖRLERDE MAKSİMUM GÜÇ NOKTASI İZLEMEK İÇİN GÜÇ ÖLÇÜM İZLEME SİSTEMİ TASARIMI VE UYGULAMASI	
Dr. Şakir Parlakyıldız	FAULTS IN LED LAMPS AND SOLUTIONS	
Murat Altın Veysel Yılmaz Erkan Arı	THE EFFECT OF ENVIRONMENTAL CONCERN AND INCENTIVE LEVEL ON WASTE SEPARATION ATTITUDES BY PARTIAL LEAST SQUARES STRUCTURAL EQUATION MODELING (PLS-SEM)	
Erkan Arı Recep Kılıç Veysel Yılmaz	E-WASTE RECYCLING BEHAVIORS EXAMINATION WITH PLANNED BEHAVIOR THEORY	
Assist. Prof., EMEL KIZILOK KARA Res. Assist., TUĞBA AKTAŞ	ACTUARIAL APPLICATIONS ON CANADIAN INSURANCE DATA USING THE COPULA APPROACH	

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HALL:6

SESSION: 2

MODERATOR: Doç. Dr. LATİFE CEYDA İRKİN

Dr. Öğr. Üyesi, İMRAN GARİP	EFFECTS Of 6-PPD- QUINON ON AQUATIC CREATURES
Res. Asst. Aytan Zeynalova Prof.Dr. Sait Engindeniz	AN EVALUATION ON THE SUSTAINABILITY OF COTTON GROWING IN AZERBAIJAN
Doç. Dr. Mustafa Hakkı AYDOĞDU Zir. Müh. Gülistan VURGUN	ŞANLIURFA-SURUÇ OVASINDA BAZI TARLA BİTKİLERİNİN EKİM ALANLARI YÖNÜNDEN ANALİZİ, TÜRKİYE
Doç. Dr. Mustafa Hakkı AYDOĞDU Zir. Müh. Gülistan VURGUN	ŞANLIURFA-SURUÇ OVASINDA SULAMALARIN SEBZE VE MEYVE ALANLARI ÜZERİNE OLAN ETKİSİNİN GENEL DEĞERLENDİRMESİ, TÜRKİYE
Dr. Öğr. Üyesi Mine KÖKTÜRK Dr. Ekrem SULUKAN	PROPAQUIZAFOP HERBICIDE CAUSES HIGH MORTALITY IN EARLY LIFE STAGE OF ZEBRAFISH (DANIO RERIO)
Doç. Dr. LATİFE CEYDA İRKİN Öğr. Gör. Dr. Şamil ÖZTÜRK	AQUAPONIC SYSTEMS
Doç. Dr. LATİFE CEYDA İRKİN	THE IMPORTANCE OF PROBIOTICS IN AQUACULTURE
Dr. ZEYNEP KÜÇÜK BAYKAN Dr. ESMA SÖYLEMEZ Dr. EYLEM FUNDA GÖKTAŞ	LABORATORY PRACTICE IN ONE HEALTH
Bülent BUDAK Şükrü Sezgi ÖZKAN Behçet KIR Gülcan DEMİROĞLU TOPÇU Ali SALMAN	THE EFFECTS OF DIFFERENT SEED RATES ON THE FORAGE YIELD AND SOME YIELD PARAMETERS OF BUCKWHEAT (<i>Fagopyrum esculentum Moench</i>) IN THE MEDITERRANEAN CLIMATE
Dr.Öğr. Üyesi Hüseyin DENK	VAN İLİ BÜYÜKBAŞ HAYVANCILIĞININ MEVCUT DURUMU
Dr.Öğr. Üyesi Hüseyin DENK	VAN İLİ KÜÇÜKBAŞ HAYVANCILIĞININ MEVCUT DURUMU
Prof. Dr. Turgay TAŞKIN Prof. Dr. Sait ENGİNDENİZ Dr. Çağrı KANDEMİR	ORGANIC MILK and RED MEAT PRODUCTION in THE EUROPEAN UNION CURRENT STATUS and FUTURE

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SESSION: 2

MODERATOR: V. Komarova

A. Galashev	COMPUTER STUDY OF CLUSTER MECHANISM OF ANTI-GREENHOUSE EFFECT
Sara Zamani, Mojtaba Fazeli, Abdollah Rashidi Mehrabadi	THE POTENTIAL USE OF NANOFILTERS TO SUPPLY POTABLE WATER IN PERSIAN GULF AND OMAN SEA WATERSHED BASIN
Obaidullah Nadeem, Rizwan Hameed	A CRITICAL REVIEW OF THE ADEQUACY OF EIA REPORTS-EVIDENCE FROM PAKISTAN
Abolfazl Moeini, Elahe Alizadeh Paeenafrakaty	GROUNDWATER QUALITY AND THE SOURCES OF POLLUTION IN BAGHAN WATERSHED, IRAN
Katarzyna Strzala-Osuch	ASSESSMENT OF POLLUTION REDUCTION
Masaki Tajima, Kenji Imou, Shinya Yokoyama	ESTIMATION METHOD FOR THE CONSTRUCTION OF HYDROGEN SOCIETY WITH VARIOUS BIOMASS RESOURCES IN JAPAN-PROJECT OF COST REDUCTIONS IN BIOMASS TRANSPORT AND FEASIBILITY FOR HYDROGEN STATION WITH BIOMASS-
Thaniya Kaosol, Sirinthrar Wandee	CELLULOLYTIC MICROBIAL ACTIVATOR INFLUENCE ON DECOMPOSITION OF RUBBER FACTORY WASTE COMPOSTING
Mitsuyuki Kawakami, Kimihiro Yamanaka	A STUDY ON ENERGY-EFFICIENT TEMPERATURE CONTROL
V. Komarova	VALUING ENVIRONMENTAL IMPACT OF AIR POLLUTION IN MOSCOW WITH HEDONIC PRICES
O. I. Nkwonta, G. M. Ochieng	WATER POLLUTION IN SOSHANGUVE ENVIRONS OF SOUTH AFRICA

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SESSION: 2

MODERATOR: Frank Emmert-Streib

Valeri A. Makarov, Nazareth P. Castellanos	INFERRING THE DYNAMICS OF “HIDDEN“ NEURONS FROM ELECTROPHYSIOLOGICAL RECORDINGS
Swapnoneel Roy, Minhazur Rahman, Ashok Kumar Thakur	SORTING PRIMITIVES AND GENOME REARRANGEMENT IN BIOINFORMATICS: A UNIFIED PERSPECTIVE
Nazar Zaki, Safaai Deris	DETECTING REMOTE PROTEIN EVOLUTIONARY RELATIONSHIPS VIA STRING SCORING METHOD
Manpreet Singh, Parvinder Singh Sandhu, Basant Raj Singh	COEFFICIENT OF PARENTAGE FOR CROP HYBRIDIZATION
Usha Chouhan, K. R. Pardasani	0 A MAXIMUM PARSIMONY MODEL TO RECONSTRUCT PHYLOGENETIC NETWORK IN HONEY BEE EVOLUTION
Frank Emmert-Streib, Matthias Dehmer	FIRST STUDIES OF THE INFLUENCE OF SINGLE GENE PERTURBATIONS ON THE INFERENCE OF GENETIC NETWORKS
Helyane Bronoski Borges, Júlio Cesar Nievola	ATTRIBUTE SELECTION METHODS COMPARISON FOR CLASSIFICATION OF DIFFUSE LARGE B-CELL LYMPHOMA
Farshad Rahimpour, Mohsen Pirdashti	THE EFFECT OF GUANIDINE HYDROCHLORIDE ON PHASE DIAGRAM OF PEG- PHOSPHATE AQUEOUS TWO-PHASE SYSTEM

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HALL: 9**SESSION: 2****MODERATOR: Petia Georgieva**

Dalia Angeles-Wedler, Katrin Mackenzie, Frank-Dieter Kopinke	PALLADIUM-CATALYZED HYDRODECHLORINATION FOR WATER REMEDIATION: CATALYST DEACTIVATION AND REGENERATION
Smaali Assia, Outemzabet Ratiba, Media El Mahdi, Kadi Mohamed	OPTICAL REFLECTANCE OF PURE AND DOPED TIN OXIDE: FROM THIN FILMS TO POLY-CRYSTALLINE SILICON/THIN FILM DEVICE
Khaireyah Kh. Al-Hamad, V. Nassehi, A. R. Khan	METHANE AND OTHER HYDROCARBON GAS EMISSIONS RESULTING FROM FLARING IN KUWAIT OILFIELDS
Shilpi Kushwaha, Suparna Sodaye, P. Padmaja	EQUILIBRIUM, KINETICS AND THERMODYNAMIC STUDIES FOR ADSORPTION OF HG (II) ON PALM SHELL POWDER
Rahmatollah Rahimi, Fariba Moharrami	STUDY OF KINETICS INCORPORATION OF AG WITH TCPP
Zubair Ahmad, Muhammad Hassan Sayyad	INVESTIGATION OF THE ELECTRONIC PROPERTIES OF AU/METHYL-RED/AG SURFACE TYPE SCHOTTKY DIODE BY CURRENT-VOLTAGE METHOD
Homayon Ahmad Panahi, Hossein Sid Kalal, Ateyh Rahimi	SEPARATION OF VITAMIN B2 AND B12 BYIMPREGNATE HPTLC PLATES WITH BORIC ACID
B. Tirandazi, M. Mehrpooya, A. Vatani	EFFECT OF VALVE PRESSURE DROP IN EXERGY ANALYSIS OF C2+ RECOVERY PLANTS REFRIGERATION CYCLES
P. Manivannan, M. Rajasimman	OSMOTIC DEHYDRATION OF BEETROOT IN SALT SOLUTION: OPTIMIZATION OF PARAMETERS THROUGH STATISTICAL EXPERIMENTAL DESIGN
Petia Georgieva, Sebastião Feye de Azevedo	APPLICATION OF FEED FORWARD NEURAL NETWORKS IN MODELING AND CONTROL OF A FED-BATCH CRYSTALLIZATION PROCESS

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MODERATOR: Naoto Suzuki

Majid Mirzaei, Saeid Samiezadeh , Abbas Khodadadi, Mohammad R. Ghazavi	FINITE ELEMENT PREDICTION AND EXPERIMENTAL VERIFICATION OF THE FAILURE PATTERN OF PROXIMAL FEMUR USING QUANTITATIVE COMPUTED TOMOGRAPHY IMAGES
To-Yuan Chen, Tzu-Ching Shih, Hao-Li Liu, Kuen-Cheng Ju	UNIFORM HEATING DURING FOCUSED ULTRASOUND THERMAL THERAPY
Naoto Suzuki	BASIC RESEARCH FOR DISTINGUISHING SMALL RETINAL HEMORRHAGES FROM DUST ARTIFACT BY USING HUE, LIGHTNESS, AND SATURATION COLOR SPACE
Panos Kotsas, Tony Dodd	RIGID AND NON-RIGID REGISTRATION OF BINARY OBJECTS USING THE WEIGHTED RATIO IMAGE
Shabbar Naqvi, Jonathan M. Garibaldi	AN OVERVIEW OF THE APPLICATION OF FUZZY INFERENCE SYSTEM FOR THE AUTOMATION OF BREAST CANCER GRADING WITH SPECTRAL DATA
Dong Ming, Su Caihong	THE ROLE PLAYED BY SWIFT CHANGE OF THE STABILITY CHARACTERISTIC OF MEAN FLOW IN BYPASS TRANSITION
Nálevka Petr	SMARTPHONES FOR IN-HOME DIAGNOSTICS IN TELEMEDICINE
Benjamin Y. M. Kwan, Hon Keung Kwan	IMPULSE NOISE REDUCTION IN BRAIN MAGNETIC RESONANCE IMAGING USING FUZZY FILTERS
Natasha Hussain, Maleeha Aslam, Robina Farooq	SENSITIVITY COMPARISON BETWEEN RAPID IMMUNO-CHROMATOGRAPHIC DEVICE TEST AND ELISA IN DETECTION AND SERO-PREVALENCE OF HBSAG AND ANTI-HCV ANTIBODIES IN APPARENTLY HEALTHY BLOOD DONORS OF LAHORE, PAKISTAN

12. 03. 2023

14:30- 16:30 Time zone in Turkey (GMT+3)

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Passcode: 1012032

HALL: 11

SESSION: 2

MODERATOR: Mohamed A. Azab

A.H. Akhaveissy	2D NUMERICAL ANALYSIS OF SAO PAULO TUNNEL
Zhengyong Liu, Huiqing Ying	ELASTIC LATERAL FEATURES OF A NEW GLASS FIBER REINFORCED GYPSUM WALL
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Amin Eisazadeh, Khairul Anuar Kassim, Hadi Nur	MOLECULAR CHARACTERISTICS OF PHOSPHORIC ACID TREATED SOILS
A. H. Akhaveissy	IMPLEMENTATION OF GENERALIZED PLASTICITY IN LOAD-DEFORMATION BEHAVIOR OF FOUNDATION WITH EMPHASIS ON LOCALIZATION PROBLEM
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Mohammed Sharif, Donald Burn	DETECTION OF LINKAGES BETWEEN EXTREME FLOW MEASURES AND CLIMATE INDICES
Carlos Mendez Galindo, Toshiro Hayashikawa, Javier Gil Belda	DAMAGE EVALUATION OF CURVED STEEL BRIDGES UPGRADED WITH ISOLATION BEARINGS AND UNSEATING PREVENTION CABLE RESTRAINERS
Narayanan Sambu Potty , Mohammad Kabir B. Mohd Akram	STRUCTURAL INTEGRITY MANAGEMENT FOR FIXED OFFSHORE PLATFORMS IN MALAYSIA

12. 03. 2023

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HALL: 12

SESSION: 2

MODERATOR: Seunghwan Lee

Dimitar Karastoyanov, Vladimir Monov	AN INTELLIGENT SYSTEM FOR KNEE AND ANKLE REHABILITATION
Hsiao-Wei Wang, Jung-Tang Huang, Chun-Chiang Lin	REAL-TIME DETECTING CONCENTRATION OF MYCOBACTERIUM TUBERCULOSIS BY CNTFET BIOSENSOR
Muhammd Hassan Khalil, Xu Jiadong	DESIGN THE BOWTIE ANTENNA FOR THE DETECTION OF THE TUMOR IN MICROWAVE TOMOGRAPHY
Reza Yousefian, Michael A. Kia, Mehrddad Hosseini Zadeh	ON THE DESIGN OF SHAPE MEMORY ALLOY LOCKING MECHANISM: A NOVEL SOLUTION FOR LAPAROSCOPIC LIGATION PROCESS
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Dyah Iswantini, Trivadila, Novik Nurhidayat, Waras Nurcholis	ANTIOXIDANT BIOSENSOR USING MICROBE
Seunghwan Lee	CHARACTERIZATION OF LUBRICITY OF MUCINS AT POLYMERIC SURFACES FOR BIOMEDICAL APPLICATIONS
Mohsin T. Mohammed, Zahid A. Khan, Arshad N. Siddiquee	INFLUENCE OF MICROSTRUCTURAL FEATURES ON WEAR RESISTANCE OF BIOMEDICAL TITANIUM MATERIALS
Nor Azali Azmir, Iskhrizat Taib, Mohammed Rafiq Abdul Kadir	THE EFFECT OF PRESS FIT ON OSSEOINTEGRATION OF ACETABULAR CUP

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MODERATOR: Vrajesh Mehta,

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Benedek Kovacs, Janos Toth	ESTIMATING REACTION RATE CONSTANTS WITH NEURAL NETWORKS
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Zare Aliabadi, Hassan, Mirzaei, Somaye	USING MIXED AMINE SOLUTION FOR GAS SWEETENING
Maazuz Z. Othman, Liqiang Ding, Yi Jiao	EFFECT OF ANIONIC AND NON-IONIC SURFACTANTS ON ACTIVATED SLUDGE OXYGEN UPTAKE RATE AND NITRIFICATION
Vrajesh Mehta, Anal Chavan	PHYSICO-CHEMICAL TREATMENT OF TAR-CONTAINING WASTEWATER GENERATED FROM BIOMASS GASIFICATION PLANTS
Rudy Agustriyanto, Akbarningrum Fatmawati	MODEL OF CONTINUOUS CHEESE WHEY FERMENTATION BY CANDIDA PSEUDOTROPICALIS
Akbarningrum Fatmawati, Rudy Agustriyanto, Lindawati	KINETIC STUDY OF GLUCONIC ACID BATCH FERMENTATION BY ASPERGILLUS NIGER

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HALL: 14

SESSION: 2

MODERATOR: Akinwumi F. Olusegun

Rameswar Debnath, Haruhisa Takahashi	A COMPARISON OF SVM-BASED CRITERIA IN EVOLUTIONARY METHOD FOR GENE SELECTION AND CLASSIFICATION OF MICROARRAY DATA
Akinwumi F. Olusegun	BIOEFFICACY OF SOME OIL-MIXED PLANT DERIVATIVES AGAINST AFRICAN MUD CATFISH (CLARIAS GARIEPINUS) BEETLES, DERMESTES MACULATUS AND NECROBIA RUFIPES
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Darren C-W. Tan, Partha Roy	GLUCOSE-DEPENDENT FUNCTIONAL HETEROGENEITY IN B-TC-6 MURINE INSULINOMA
Mithilesh Singh, Rakhi Chaturvedi	AN EFFICIENT PROTOCOL FOR CYCLIC SOMATIC EMBRYOGENESIS IN NEEM (AZADIRACHTA INDICA A JUSS.)
Joan Iliopoulou-Georgudaki, Chris Theodoropoulos, Danae Venieri, Maria Lagkadinou	A MODEL PREDICTING THE MICROBIOLOGICAL QUALITY OF AQUACULTURED SEA BREAM (SPARUS AURATA) ACCORDING TO PHYSICO-CHEMICAL DATA: AN APPLICATION IN WESTERN GREECE FISH AQUACULTURE
Omar Gaci, Stefan Balev	A GENERAL MODEL FOR AMINO ACID INTERACTION NETWORKS

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MODERATOR: Zeljko Panian

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Sinnakrishnan Perumal, Nitish Pandey	PROCESS-BASED BUSINESS TRANSFORMATION THROUGH SERVICES COMPUTING
Vineet Kansal	PROPOSING ENTERPRISE WIDE INFORMATION SYSTEMS BUSINESS PERFORMANCE MODEL
Adla Bentellis, Zizette Boufaïda	CONCEPTUAL METHOD FOR FLEXIBLE BUSINESS PROCESS MODELING
Wararat Rungworawut, Twittie Senivongse	USING ONTOLOGY SEARCH IN THE DESIGN OF CLASS DIAGRAM FROM BUSINESS PROCESS MODEL
Eakong Atpitamvaree, Twittie Senivongse	A QUANTITATIVE APPROACH TO STRATEGIC DESIGN OF COMPONENT-BASED BUSINESS PROCESS MODELS
Zeljko Panian	A NEW DIMENSION OF BUSINESS INTELLIGENCE: LOCATION-BASED INTELLIGENCE
Petr Cernohorsky, Jan Voracek	COMPUTATIONAL MODELING IN STRATEGIC MARKETING
Michiko Miyamoto, Shuhei Kudo, Kayo Iizuka	MEASURING BUSINESS AND INFORMATION TECHNOLOGY VALUE IN BPR: AN EMPIRICAL STUDY IN THE JAPANESE ENTERPRISES

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Dr. Öğr. Üyesi Özlem KAYA	PAST
DR. DİDAR EZGİ ÖZDAĞ	Bekleyiş

Doç. Dr. Özcan DEMİR	Perspektif
Doç. Dr. Zuhale AKMEŞE DEMİR	Nokta
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STRATEGIES FOR SUSTAINABILITY MANAGEMENT IN THE COVID-19 PANDEMIC: DISRUPTION OF EDUCATIONAL SYSTEM

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Abstract

How can the COVID-19 pandemic be recovered from? For all domains worldwide, this continues to be the key worry. The educational system was completely destroyed by the early lockdowns, which in turn caused psychological damage among the population. Although limitations were put in place to avoid the sickness from spreading, the entire country lost its independence as a result of social alienation activities. However, the educational system and both small- and large-scale businesses are the key areas affected. Economic conditions have drastically declined, and management actions are needed to restore them. To combat the disturbance brought on by the pandemic corona virus, catastrophe demands that each nation undergo renovation. The current Covid-19 pandemic has changed how we work and live on a global scale. This essay reveals how higher education institutions have seen enormous revolutions as it focuses on the educational sphere right now. The entire educational system is now digital, and academics have received adequate training in using online platforms with the aid of various educational Apps. The educational system is changing in high schools, colleges, and universities thanks to these quick developments. Therefore, the purpose of this article is to inform the audience about the successes of this novel technology, the challenges they encountered, and lastly, the management strategies while also emphasizing potential applications in the future.

Keywords: Educational System, Educational Apps, Technology, COVID-19, Catastrophe,

HIGHER LEARNING INSTITUTES STARTED IMPLEMENTATION OF NEP2020- A NEW HOPE FOR EDUCATION

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Abstract

In 2020, the Indian government unveiled the National Educational Policy (NEP). By prioritizing action points in a comprehensive way that involves careful planning, monitoring, and collaborative implementation, timely infusion of necessary funds, and careful analyses and reviewing at multiple implementation steps, the policy seeks to achieve the set goals phase-by-phase with spirit and intent. It is planned to invest an amount equal to 6% of the nation's GDP, establish a new Higher Education Commission of India, and create a National Research Fund. In order to thrive in this dynamic world, anything must be able to change with the situation. The same is true for education; due to evolving information and communication technology (ICT) and industry requirements, our approach to learning must evolve. Additionally, the total system has undergone a paradigm shift as a result of the fast-evolving worldwide situation in education. It was crucial that India keep up with this transition, and NEP 2020 has made efforts to improve the Indian educational system in this direction. Because it only uses secondary data sources, the study is entirely qualitative. Additionally, books, journals, research articles, websites, newspapers, and various government documents are employed as secondary data sources. An attempt is made to research the policy's provisions and how they will contribute to enhancing education at the secondary and university levels. In our article, we discuss the educational system that prioritizes 21st-century abilities like critical thinking coupled with experiential learning, problem-solving and thinking etc.

Keywords: NEP2020, Higher Education Commission, Journals, Experiential Learning, Research Policy.

62 YAŞ VE ÜSTÜ KİŞİLERDE TÜMÖR KAYNAKLI OLMAYAN AKUT BARSAK TIKANIKLIĞI OLUŞUM MEKANİZMASI VE PATOLOJİNİN CERRAHI OLARAK ÇIKARILMASI YÖNTEMİ

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ÖZET

Akut bağırsak tıkanıklığı, içeriğin sindirim sisteminde distal yönde hareketinin bozulması ile karakterize edilen patolojik bir durumdur. Sızdırmazlık ayrı bir nazolojik birim değildir, çeşitli hastalıkların bir komplikasyonu olarak karşımıza çıkar. Akut barsak tıkanıklığı çok ciddi ve tehlikeli bir hastalıktır. Bu patoloji erkeklerde kadınlara göre daha sık görülür, yaşlılarda ve yaşlılarda 1-2 kat daha sık görülür. Nedeni ne olursa olsun hastalığın tipik klinik belirtileri sonrasında gelişir. bahsedilen patolojik durum ortaya çıkar. Bu açıdan bakıldığında farklı kökenlere sahip olan bağırsak tıkanıklığının tanı ve tedavi taktikleri birçok vakada aynıdır.

Anahtar Kelimeler: 62 Yaş ve üstü kişiler, Akut barsak tıkanıklığı, Cerrahi yöntem

MECHANISM OF FORMATION OF ACUTE INTESTINAL OBSTRUCTION OF NON-
TUMOR ORIGIN IN PEOPLE AGED 62 YEARS AND OLDER AND METHOD OF
SURGICAL REMOVAL OF PATHOLOGY

ABSTRACT

Acute intestinal obstruction is a pathological condition characterized by disruption of the movement of contents in the distal direction in the digestive tract. Impermeability is not a separate nasological unit, it appears as a complication of various diseases. Acute intestinal obstruction is a very serious and dangerous disease. This pathology is more common in men



than in women, and it is 1-2 times more common in elderly and elderly people. Regardless of the cause, typical clinical symptoms of the disease develop after the mentioned pathological condition occurs. From this point of view, the diagnosis and treatment tactics of intestinal obstruction, which have different origins, are the same in many cases.

Keywords: People aged 62 and over, Acute intestinal obstruction, Surgical method

**EVLERDE VE LABORATUVARLARDA KULLANILAN ZARARLI MADDELERİN
KARACİĞERDE OLUŞTURDUĞU PATOLOJİK DEĞİŞİKLİKLER, DEMİR
EKSIKLİĞİ ANEMİSİ VE ENDOKRİN SİSTEM İLE İLİŞKİSİ**

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ÖZET

Zarar verici etkisi olan ve vücudun fizyolojik fonksiyonlarını bozan kimyasal maddelere zehir denir. Bu maddeler vücutta zehirlenmelere neden olur. Zehirlenmeler, kökenlerine göre birkaç gruba ayrılır: Ev zehirlenmeleri - bunlar arasında gıda zehirlenmeleri, İlaç zehirlenmeleri - örneğin, sentetik ilaçlar ve narkotik maddelerle zehirlenmeler; Mesleki zehirlenme - örneğin kurşun, hidrojen sülfür, klorür vb. ile çalışanların neden olduğu zehirlenme. Zehirler farklı prensiplere göre gruplandırılır. İnorganik toksik maddeler - bunlar arasında alkaliler, asitler, ağır metal tuzları, fosforlu organik bileşikler; bakteri ve mantarların yaşam aktivitelerinden kaynaklanan toksik maddeler - bunlara bazı antibiyotikler, botulizm toksinleri, aflatoksin vb. dahildir. bitki kökenli zehirli maddeleri ifade eder - glikozitler, alkaloidler, saponinler, vb.;

Anahtar Kelimeler: Zararlı maddeler, Karaciğer ve demir eksikliği anemisi, Endokrin sistem

PATHOLOGICAL CHANGES IN THE LIVER CAUSED BY HARMFUL SUBSTANCES USED IN HOUSEHOLDS AND LABORATORIES, IRON DEFICIENCY ANEMIA AND CORRELATION WITH THE ENDOCRINE SYSTEM

ABSTRACT

Chemical substances that have a damaging effect and disrupt the physiological functions of the body are called poisons. These substances cause poisoning in the body. Poisonings are divided into several groups according to their origin: Household poisonings - these include food poisonings; Drug poisonings - for example, poisonings with synthetic drugs and narcotic substances; Occupational poisoning - for example, poisoning caused by those who work with lead, hydrogen sulfide, chloride, etc. Poisons are grouped according to different principles. Inorganic toxic substances - these include alkalis, acids, heavy metal salts, organic compounds with phosphorus; toxic substances resulting from the life activity of bacteria and fungi - these include some antibiotics, botulism toxins, aflatoxin, etc. refers to poisonous substances of plant origin - glycosides, alkaloids, saponins, etc.;

Keywords: Harmful substances, Liver and iron deficiency anemia, Endocrine system

PEDİATRİK ABDOMİNAL CERRAHİ GEÇİREN 2 OLGUMUZDA USG EŞLİĞİNDE M-TAPA BLOK TECRÜBEMİZ

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Giriş:

Modifiye perikondriyal yaklaşımla thoracoabdominal (M-TAPA)sinir bloğu,orta aksiller hatttan orta abdomen/sternuma kadar Th5-Th12 dermatom sahasında duyuşal blok sađlayan yeni bir interfasiyal plan blođudur. M-TAPA yüksek frekanslı (12 MHz) lineer prob ile 10. Kostakondral seviyede eksternal oblik,internal oblik ve transversus abdominis kasları ultrason(USG) eşliđinde gösterilip 22-G 80 -100mm blok iđnesi ile in-plane tekniđiyle kraniyal yönde iđne ilerletilip 10.kostal kartilajın altına lokal anestezi verilerek yapılan yeni bir bloktur.

Abdominal cerrahi geçiren 2 pediatrik olgumuzda multimodal analjezi yaklaşımlı olarak kullandıđımız M-TAPA deneyimimizi paylařmak istedik.

Olgular:

1.olgumuz apandisit ön tanısıyla laparoskopik apendektomi operasyonu planlanan 8 yařında 38 kg ASA I hasta, 2.olgumuz sađ inmemiř testis nedeniyle laparoskopik inmemiř testis ameliyatı planlanan 1 yař 10 kg erkek hasta Her 2 hastanında aileleri bilgilendirilerek sözlü ve yazılı onam alındıktan sonra ıv midazolam 1mg premedikasyon yapılarak operasyon salonuna alındı. Rutin monitorizasyon sonrası 1mcg/kg fentanyl ,2 mg/kg propofol ,0,6 mg/kg rokuronyum ile indüksiyonu sonrası 8 yař hasta 6 numara endotrakeal tüp ile,1 yař hasta 4.5 numara endotrakeal tüp ile sorunsuz entübe edildi. Anestezi idameleri %50 : %50 O2-hava karıřımında 2 MAC sevofluran ile kombine edilen 0.3-0,6 mcg/kg/dk remifentanil infüzyonu ile sađlandı.

Laparoskopik apendektomi operasyonu 35 dakika,laparoskopik inmemiř testis operasyonu 40 dakika sürdü.Operasyon sonunda her 2 hastaya da 1mg/kg ıv parasetamol yapıldı.Hastalar uyandırılmadan önce bilateral M-TAPA blok USG eşliđinde yapılarak 8 yařında ki hastaya her 2 tarafa 12ml %0.25 bupivakain ,1 yařında ki hastaya da her 2 tarafa 5ml %0.25 bupivakain uygulandı.

Hastalar bloklar yapıldıktan sonra kas gevřeticinin etkisi 2mg/kg sugamadeks ile geri çevrilerek sorunsuz řekilde ekstübe edilip uyandırma servisine alındı.

8 yařında ki hastanın ađrı deđerlendirilmesi Numerik sayısal skorlama(NRS) ile yapıldı ve 1.saat ađrı skoru dinlenme halinde 3 ,hareket halinde 4 olarak ölçülen hastanın kliniđine gönderildikten sonra 2 ve 4. Saatlerde ki ađrı skorları ve ek analjezik ihtiyaçları yönünden takip

edildi. NRS skorları düşük olan hastaya ilk 8 saatte herhangi bir ek analjezik yapılmadı ve bir komplikasyonla karşılaşılmadı. Bir yaşında ki hasta sözlü iletişimle ağrı değerlendirilmesi yapılamamak kadar küçük olduğu için FLACC Skalası: yüz, bacak hareketliliği, aktivite, ağlama, teselli edilebilirlik Skalası ile ağrısı değerlendirildi. 1. saatte hafif rahatsızlık olarak değerlendirilen hasta kliniğe gönderildikten sonra da ağrısı olmayıp 6 saat boyunca ek bir analjezik uygulanmadı.

Sonuç:

Bu 2 olguluk serimizde abdomen cerrahisi geçiren pediatrik vakalarda ultrason eşliğinde yaptığımız M-TAPA blokların postoperatif dönemde etkin analjezi sağladığını ve ek analjezik kullanımını azalttığını gözlemledik.

M-TAPA bloğun batın cerrahisi geçirecek pediatrik vakalarda kullanımıyla ilgili daha fazla araştırma yapılması gerektiğini düşünüyoruz.

Anahtar kelime; pediatrik cerrahi, M-TAPA, analjezi

ÖNEMLİ BİR ANTİOKSİDAN: ALFA LİPOİK ASİT AN IMPORTANT ANTIOXIDANT: ALPHA LIPOIC ACID

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ÖZET

Alfa-lipoik asit (ALA) ilk olarak 1950’de sığır karaciğerinden izole edilmiştir. Asimetrik karbon atomunun varlığından dolayı, optik olarak aktif bir bileşiktir. Son yıllarda lipoik aside olan ilginin artmasının en önemli sebebi lipoik asidin benzersiz indirgeyici gücünden kaynaklanmaktadır. İndirgenmiş lipoik asit reaktif oksijen türlerini nötrleştiren reaksiyonlara da katılmaktadır. ALA’nın yağda ve suda da çözünmesi onu benzersiz bir antioksidan yapar. ALA’nın glutasyon döngüsü üzerinde glutasyon redüktazı etkileyerek ve sistini sisteine indirgeyerek hücrel glutasyonu yükseltebileceği ve koruyabileceği önemli etkileri vardır. Düşük redox potansiyeli ve eşsiz indirgeme kapasitesi nedeniyle, ALA hem reaktif oksijen türleri (ROS) yakalaması hem de diğer antioksidanların oksitlenmiş formlarının azaltılmasından sorumlu olduğu için antioksidanların antioksidanı olarak tanımlanır. Bu özelliği sebebiyle prelinik çalışmalarda ve AIDS, renal litiyazis, etanol zehirlenmesi, diyabetik nöropati katarakt ve radyasyon hasarı gibi hastalıkların tedavisinde de kullanılmaktadır. ALA, karbonhidratların, protein ve yağların enerji metabolizması için temel bir substrattır. İnsan dokuları tarafında doğal olarak üretilen ALA’nın toplam vücut havuzundaki oranı düşük seviyelerdedir. Günde, 600- 2400 mg dozların güvenli olduğu bildirilmiştir. ALA, hemen hemen tüm yiyeceklerde çok düşük miktarlarda bulunur ve diyet takviyesi ve farmosotik ajan olarak kullanılır. Kan beyin bariyerini geçebilir. Antioksidan etkilerine ek olarak, indirgenmiş formu olan dihidrolipoat (DHLLA) demirin indirgenmesiyle prooksidan etki gösterebilir. Profllaktik ve terapötik amaçlar için kullanılan dozlarda toksik etki göstermez. Düzenleyici proteinler ve normal büyüme ve metabolizmada yer alan genler üzerinde etkilerinin olabileceğine dair kanıtlar vardır. Bu özellikleri nedeniyle diyabet, iskemi-reperfüzyon hasarı, katarakt, nörodejeneratif hastalıklarda terapötik bir madde olarak kullanıldığı deneysel ve klinik çalışmalarda mevcuttur. ALA’nın nitrik oksit (NO) sentezinde ve

endotel fonksiyon iyileşmesinde rol oynadığı belirtilmiştir. Lipoik asidin kullanım alanlarının fazlalığı, bu alanda yapılacak daha fazla deneysel ve klinik çalışmaya ihtiyaç duymaktadır.

Anahtar kelimeler: alfa-lipoik asit, antioksidan, reaktif oksijen türleri

ABSTRACT

Alpha-lipoic acid (ALA) was first isolated from bovine liver in 1950. Due to the presence of the asymmetric carbon atom, it is an optically active compound. The most important reason for the increasing interest in lipoic acid in recent years is due to the unique reducing power of lipoic acid. Reduced lipoic acid also participates in reactions that neutralize reactive oxygen species. ALA is also soluble in fat and water, making it a unique antioxidant. ALA has important effects on the glutathione cycle, where it can elevate and protect cellular glutathione by affecting glutathione reductase and reducing cystine to cysteine. Due to its low redox potential and unique reducing capacity, ALA is described as an antioxidant of antioxidants, as it is responsible for both the capture of reactive oxygen species (ROS) and the reduction of oxidized forms of other antioxidants. Due to this feature, it is also used in preclinical studies and in the treatment of diseases such as AIDS, renal lithiasis, ethanol poisoning, diabetic neuropathy, cataract and radiation damage. ALA is an essential substrate for the energy metabolism of carbohydrates, protein and fats. The ratio of ALA, which is naturally produced by human tissues, in the total body pool is at low levels. Doses of 600 to 2400 mg per day have been reported to be safe. ALA is found in very low amounts in almost all foods and is used as a dietary supplement and pharmaceutical agent. It can cross the blood brain barrier. In addition to its antioxidant effects, its reduced form dihydrolipoate (DHLA) may have a pro-oxidant effect by reducing iron. It does not show toxic effects at doses used for prophylactic and therapeutic purposes. There is evidence that they may have effects on regulatory proteins and genes involved in normal growth and metabolism. Due to these properties, there are experimental and clinical studies in which it is used as a therapeutic agent in diabetes, ischemia-reperfusion injury, cataract, neurodegenerative diseases. It has been stated that ALA plays a role in nitric oxide (NO) synthesis and endothelial function improvement. The abundance of usage areas of lipoic acid requires more experimental and clinical studies to be conducted in this area.

Keywords: alpha-lipoic acid, antioxidant, reactive oxygen species

YAŞLANMANIN YAVAŞLATILMASININ ÖNEMİ THE IMPORTANCE OF SLOWING AGING

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ÖZET

Yaşlanma, strese uyum cevabında azalmaya neden olan ve diyabet, kardiyovasküler hastalık ve Alzheimer hastalığı gibi yaşla ilgili hastalıkların riskinin arttığı çeşitli dejeneratif bozukluklara yol açabilen ilerleyici bir fizyolojik fonksiyon kaybıdır. Oksitlenmiş proteinler, DNA eklentileri, lipid peroksitleri gibi oksidatif olarak indüklenen ürünler de dahil olmak üzere hasarlı moleküllerin birikmesi ile karakterizedir. Yaşlanmayı yavaşlatmanın tanımı, hücre bileşenlerinde zamanla meydana gelen hasarı azaltmak ve doku bakımını iyileştirmek anlamına gelir. Kronolojik yaş basitçe kaç yaşında olduğumuzdur. Ancak biyolojik yaşı (fizyolojik yaş) ölçmenin bir yolu, moleküler yaşı tahmin etmek için DNA metilasyon seviyelerini kullanan epigenetik saattir. Bir süre önce sistemik yaşlanma ile hipotalamusta inflamasyon ve hormon salgılanması arasında bir bağlantı olduğunu gösteren bir ilke kanıtı sunuldu.

Beslenme ve bazı zararlı alışkanlıklar da yaşlanmada olumsuz rol oynamaktadır. Tütünde bulunan nikotin kan damarlarını daraltarak cilde daha az oksijen ve besin verilmesine neden olur. Sigara dumanında bulunan diğer bileşikler, zararlı serbest radikaller üretir. Sağlıklı yaşam stilinin belirlenmesinin yaşlanmanın yavaşlatılmasına etkisine baktığımızda, özellikle şeker alımı, kollajen liflerinin çapraz bağlanmasını desteklediği için yaşlanma belirtilerini hızlandırabilir.

Ekzojen antioksidanlar oksitlenmiş moleküllerin birikimini azaltabilseler bile, yaşam süresini uzatıp uzatamayacakları henüz belli değildir. Antioksidan takviyesi, orta yaşta başladığında ömrü uzatmak pek olası görünmese de, yaşamın erken döneminde başladığında daha etkili olabilir. Umut vadeden bir terapötik modalite olan kök hücre tedavileri kavramı, önümüzdeki

yıllar içinde sağlık kalitesinin önemli ölçüde artmasına olanak tanıyacak ve muhtemelen ortalama insan yaşam beklentisini daha da artıracaktır.

Fizyolojik bir süreç olan yaşlanma tüm organları etkilemekle birlikte, bayanlarda cilt yaşlanması estetik bir sorun olarak daha ön plana çıkmaktadır. Cilt yaşlanması postmenopozal dönemde bir hızlanma gösterir. Sigara içen hanımlarda cildin yaşlanma süreci daha hızlı seyreder. Ayrıca yaşlanma ile birlikte kronik hastalıklara yol açan risk faktörleri de ciddi bir problem oluşturmaktadır. Estetik sorunların yanında hipertansiyon, diyabet ve dislipidemi gibi risk faktörleriyle mücadele etmekte gerekmektedir. Bunun için besin gereksinimimizi koruyarak, kalori kısıtlamasına gitmek, sebze ve meyve ağırlıklı akdeniz diyeti uygulamak, orta düzeyde fiziksel aktivite yapmak ve zararlı bileşiklerle alışkanlıklardan uzak durmak önemlidir. Böylece yaşlanmayı yavaşlatarak daha sağlıklı ve uzun bir ömür geçirmemiz mümkün olabilir.

Anahtar Kelimler: Antioksidan, Yaşlanmanın Yavaşlatılması, Biyolojik Yaş.

ABSTRACT

Aging is a progressive loss of physiological function that can lead to a variety of degenerative disorders that result in a reduced adaptive response to stress and an increased risk of age-related diseases such as diabetes, cardiovascular disease, and Alzheimer's disease. It is characterized by the accumulation of damaged molecules, including oxidatively induced products such as oxidized proteins, DNA adducts, lipid peroxides. The definition of slowing down aging means reducing damage to cell components over time and improving tissue maintenance. Chronological age is simply how old we are. But one way to measure biological age (physiological age) is the epigenetic clock, which uses DNA methylation levels to estimate molecular age. A proof of principle was presented some time ago showing a link between systemic aging and inflammation and hormone secretion in the hypothalamus.

Nutrition and some harmful habits also play a negative role in aging. The nicotine in tobacco constricts blood vessels, causing less oxygen and nutrients to be delivered to the skin. Other compounds found in cigarette smoke produce harmful free radicals. When we look at the effect of determining a healthy lifestyle on slowing down aging, especially sugar intake can accelerate the signs of aging as it supports the cross-linking of collagen fibers.

Although exogenous antioxidants can reduce the accumulation of oxidized molecules, it is not yet clear whether they can prolong lifespan. While antioxidant supplementation seems unlikely to prolong life when started in middle age, it may be more effective when started early in life. The concept of stem cell therapies, a promising therapeutic modality, will allow to significantly improving the quality of health over the coming years, possibly further increasing the average human life expectancy.

Although aging, which is a physiological process, affects all organs, skin aging in women comes to the forefront as an aesthetic problem. Skin aging shows an acceleration in the postmenopausal period. The aging process of the skin is faster in women who smoke. In addition, risk factors that lead to chronic diseases with aging are also a serious problem. In addition to aesthetic problems, it is necessary to combat risk factors such as hypertension, diabetes and dyslipidemia. Therefore, it is important to maintain our nutritional needs, to restrict calories, to prefer a diet rich in vegetables and fruits (Mediterranean diet), to moderate physical activity and to stay away from harmful compounds and habits. Thus, it may be possible for us to have a healthier and longer life by slowing down aging.

Keywords: Antioxidant, Slowing Aging, Biological Age.

CHRYSOPHANOL EXHIBITS ANTICANCER EFFECT BY REGULATING EXPRESSION OF WNT/B-CATENIN SIGNALING PATHWAY GENES IN NEUROBLASTOMA CELLS

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ABSTRACT

Neuroblastoma is an extremely aggressive type of cancer originating from the sympathetic nervous system. In the early stages of the disease, especially in the treatment of small tumors, surgical resection is applied. In advanced tumors, chemotherapy is used in addition to surgical resection. Although current treatments increase survival rate, they cause serious side effects. For this reason, it has become very important to investigate anticancer effects of natural products in recent years. Chrysophanol is a 1,8-dihydroxy-3-methyl derivative of the 9,10-anthracenedione ring. This compound is widely distributed in several organisms, including plants, microorganisms, and insects. It is also known that chrysophanol, which has various biological activities such as neuroprotection, anticancer, antibacterial, antiviral, antioxidation, can cause anticancer effects. The aim of this study is to evaluate possible anticancer activity of chrysophanol in SH-SY5Y neuroblastoma cells. The cytotoxic effect of Chrysophanol applied at different doses and times on SH-SY5Y cells was evaluated by XTT analysis and the IC₅₀ dose of chrysophanol, which inhibited cell viability by 50%, was determined. RNA isolation was performed from control group and dose group treated with chrysophanol at IC₅₀ dose, and cDNA was synthesized. cDNAs were used in qRT-PCR analysis. *CASP-3*, *-7*, *-8*, *-9*, *GSK3A*, *GSK3B*, *CSNK1A1*, *CTNNB1*, *LRP5*, *LRP6*, *DVL1*, *DVL2*, *TCF7*, *LEF1* and *c-Myc* gene expression differences between cells of control and dose group were determined. According to XTT analysis, chrysophanol inhibited SH-SY5Y proliferation in a dose and time dependent manner. The IC₅₀ dose of chrysophanol was found to be 25 µM for 24 hours. According to the results of qRT-PCR analysis, chrysophanol treatment in SH-

SH-SY5Y cells significantly decreased the expression levels of *CTNNB1*, *LRP5*, *LRP6*, *DVL1*, *DVL2*, *TCF7*, *LEF1*, ve *c-Myc* genes, while significantly increased the expression levels of *CASP-3* and *CASP-9* genes. Chrysophanol inhibits proliferation in SH-SY5Y cells and exerts anticancer effect by regulating the expression of Wnt/ β -catenin signaling pathway genes and caspase genes.

Keywords: Chrysophanol, SH-SY5Y, Wnt/ β -catenin signaling pathway

CHRYSOPHANOL NÖROBLASTOMA HÜCRELERİNDE WNT/B-KATENİN SİNYAL YOLAĞI GENLERİNİN EKSPRESYONUNU DÜZENLEYEREK ANTİKANSER ETKİ GÖSTERİR

ÖZET

Nöroblastoma, sempatik sinir sisteminden köken alan son derece agresif karaktere sahip bir kanser türüdür. Hastalığın erken evrelerinde, özellikle yayılmamış küçük tümörlerin tedavisinde cerrahi rezeksiyon uygulanmaktadır. İleri evre tümörlerin tedavisinde ise cerrahi rezeksiyonun yanında kemoterapi de kullanılmaktadır. Mevcut tedavi yaklaşımları sağkalım oranını artırmada yardımcı olsa da, ciddi yan etkilere neden olmaktadır. Bu nedenle son yıllarda daha az yan etkiye sahip doğal ürünlerin antikanser etkilerinin araştırılması oldukça önem kazanmıştır. Chrysophanol 9,10-antrasedion halkasının 1,8-dihidroksi-3-metil türevidir. Bu bileşik bitkiler, mikroorganizmalar ve böcekler dahil olmak üzere çeşitli organizmalarda yaygın olarak bulunmaktadır. Nöroproteksiyon, antikanser, antibakteriyel, antiviral, antioksidasyon gibi çeşitli biyolojik aktivitelere sahip olan chrysophanolün antikanser etkilere neden olabileceği de bilinmektedir. Çalışmada chrysophanolün SH-SY5Y insan nöroblastoma hücrelerinde olası antikanser etkinliğinin değerlendirilmesi amaçlanmıştır. Farklı doz ve sürelerle uygulanan Chrysophanolün SH-SY5Y hücrelerindeki sitotoksik etkisi XTT analizi ile değerlendirilmiş ve hücre canlılığını %50 oranında inhibe eden chrysophanol dozu (IC50) belirlenmiştir. Ardından kontrol grubu ve chrysophanolün IC50 dozu ile muamele edilmiş doz grubu hücrelerinden RNA izolasyonu gerçekleştirilmiş ve cDNA sentezlenmiştir. Elde edilen cDNA'lar qRT-PCR analizinde kullanılmış ve chrysophanol uygulaması sonrası *CASP-3*, *-7*, *-8*, *-9*, *GSK3A*, *GSK3B*, *CSNK1A1*, *CTNNB1*, *LRP5*, *LRP6*, *DVL1*, *DVL2*, *TCF7*, *LEF1*, *c-Myc* genlerinin ekspresyon seviyelerindeki farklılıklar belirlenmiştir. XTT analiz sonuçlarına göre chrysophanol SH-SY5Y hücre proliferasyonunu doz ve zaman bağımlı olarak inhibe etmiştir.

Chrysophanol SH-SY5Y hücrelerinde IC50dozu ise 24 saat için 25µM olarak bulunmuştur. qRT-PCR analizi sonuçlarına göre, SH-SY5Y hücrelerinde chrysophanol muamelesi kontrol grubuna kıyasla *CTNNB1*, *LRP5*, *LRP6*, *DVL1*, *DVL2*, *TCF7*, *LEF1*, ve *c-Myc* genlerinin ekspresyon seviyelerini anlamlı şekilde azaltırken, *CASP-3* ve *CASP-9* genlerinin ekspresyon seviyelerini anlamlı şekilde artırmıştır.

Sonuç: Chrysophanol SH-SY5Y hücrelerinde proliferasyonu inhibe eder, Wnt/β-katenin sinyal yolağı ve kaspaz genlerinin ekspresyonlarını düzenleyerek antikanser etki gösterir.

Anahtar Kelimeler: Chrysophanol, SH-SY5Y, Wnt/β-katenin sinyal yolağı

DOĞUMDA EŞ DESTEĞİ

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ÖZET

Doğum desteği; doğum öncesi, doğum sırası ve doğum sonrası dönemde kadınlara sağlık çalışanı, ailesi, eşi ya da kadının istediği bir kişi tarafından verilen destekleyici bakımdır. Doğumda bakım kalitesini etkileyen önemli faktörlerden biridir. İnsanlığın varoluşundan itibaren doğum yapan kişiye çevresindeki kişilerin yardımcı olduğu, kadını bu süreçte yalnız bırakmadığı görülmektedir.

Doğum sırasında eş desteği; eşin doğum sırasında kadına sağladığı duygusal ve fiziksel desteği ifade eder. Doğum sırasında eşler tarafından sağlanan destek, kültürel ve kişisel tercihlere bağlı olarak değişir. Eş desteği, doğum yapan kadının ihtiyaç ve tercihlerine bağlı olarak da birçok şekilde olabilir. Bu destek masaj, el ele tutuşma, cesaretlendirme, duygusal destek, güven verici sözler, olumlu onaylamalar ve fiziksel teması içerir.

Eş desteğinin hem doğum yapan kadın hem de eşi için birçok faydası vardır. Doğum sırasında annenin elini tutarak, onu cesaretlendirerek ve rahatlamasına yardımcı olarak duygusal destek sağlanmaktadır. Bunun sonucunda doğum süreci daha olumlu geçer. Destek sağlayan eşler, doğum sürecine daha fazla dâhil olur, eşlerine ve bebeklerine daha bağlı hissederler. Aile bağları güçlenir, anne kendini daha güvende hisseder, stres ve doğum korkusu azalır. Eşleri ihtiyaçlarını açıkça ifade edemiyorsa, doğum sırasında annenin istek ve tercihlerini savunurlar. Bu tür bir destek, kaygıyı azaltmaya, rahatlık sağlamaya ve güven duygusunu artırmaya yardımcı olacağından, sağlık çalışanları için de fayda sağlar. Eşlerin bu dönemde birbirlerine nasıl daha iyi destek olabileceklerini belirlemek, destekleyici ve olumlu bir doğum deneyimi için yardımcı olmak ve birlikte çalışabilmeleri için doğum yapan kişi ve sağlık çalışanları ile iletişim kurması önemlidir. Sağlık çalışanlarının da bu süreçte aileye destek olmaları ve katılım için de desteklemeleri önemlidir. Hatta bu anlamda destekleyici politikaların yürütülmesi de süreci kolaylaştırabilmektedir.

Eş desteği doğum memnuniyeti, doğum süresi ve ağrı ile baş etmede oldukça önemlidir. Bu nedenle doğum süresince kadınların yalnız bırakılmamaları, eş desteği almaları sağlanmalı ve desteklenmelidirler.

Anahtar Kelimeler: Eş desteği, Doğum, Memnuniyet

SPOUSE SUPPORT AT BIRTH

ABSTRACT

Birth support; It is the supportive care given to the woman in the antenatal, perinatal and postnatal period by a health worker, family, spouse or person of her choice. It is one of the important factors that affect the quality of care given at birth. Since the existence of humanity, it is seen that the people around her have helped the person giving birth and did not leave the woman alone in this process.

Spousal support during birth; It refers to the emotional and physical support provided by the spouse to the woman during childbirth. The support provided by spouses during childbirth varies depending on cultural and personal preferences. Spousal support can also take many forms, depending on the needs and preferences of the woman giving birth. This support includes massage, holding hands, encouragement, emotional support, reassuring words, positive affirmations, and physical contact.

Spousal support has many benefits for both the woman in labor and her partner. Emotional support is provided by holding the mother's hand during delivery, encouraging her and helping her relax. As a result, the birth process goes more positively. Supportive spouses are more involved in the birthing process and feel more connected to their partner and their baby. Family ties are strengthened, the mother feels more secure, stress and fear of childbirth are reduced. If the spouses can not express their needs clearly, they defend the wishes and preferences of the mother during childbirth. This type of support is also beneficial for health care professionals, as it helps reduce anxiety, provide comfort and increase confidence. It is important for spouses to communicate with the person giving birth and health professionals in order to determine how they can better support each other during this period, to help them have a supportive and positive birth experience, and to work together. It is important for health professionals to support the family in this process and to support them for participation. In this sense, the implementation of supportive policies can also facilitate the process.

Spousal support is very important in terms of delivery satisfaction, delivery time and coping with pain. For this reason, women should not be left alone during childbirth, they should be provided with spousal support and they should be supported.

Keywords: Spousal support, Birth, Satisfaction

AFETLERDE ANNE SÜTÜ BANKACILIĞININ ÖNEMİ

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ÖZET

Anne sütü yenidoğanın büyüme, gelişme ve hastalıklardan korunması için en ideal içeriğe sahip doğal besindir. Anne sütü bankası; anne sütünü toplayan, belli ortamlarda muhafaza ederek ihtiyaç sahibi bebeklere dağıtan kurumlara denir. Anne sütüne erişimin yetersiz olduğu veya mümkün olmadığı durumlarda, bebeğin beslenme ihtiyacının anne sütü bankalarından karşılanması amaçlanmaktadır. Süt bankalarında bağışlanan anne sütünün toplanması, işlenmesi, depolanması ve ihtiyacı olan bebeklere dağıtılması süreci afet durumlarında da önemli bir kaynaktır. Doğal afet durumlarında anneler, bebeklerine güvenli ve yeterli anne sütü sağlama konusunda zorluklar yaşayabilir, afetler sırasında stres, mahremiyet eksikliği veya diğer faktörler nedeniyle de emzirme zorlaşabilir. Süt bankaları sayesinde kendi annelerinden süt alamayan bebeklere anne sütü sağlanarak bu ihtiyacın giderilmesi sağlanmış olur.

Bebekler, acil durumlarda en savunmasız gruplardan biridir. Enfeksiyonlara ve hastalıklara karşı daha hassastırlar ve beslenme düzenleri bozulabilmektedir. Süt bankaları, annelerinden ayrılan, stres veya hastalık nedeniyle emziremeyen bebeklere güvenli ve besleyici olarak anne sütü sağlanabilir. Afet sırasında yiyecek ve su kaynakları kıtlaşabilir veya kirlenebilir bu da yetersiz beslenmeye veya hastalıklara yol açabilir. Süt bankaları sayesinde önceden enfeksiyon ve bulaş riskleri açısından kontrol edilen sütler güvenilir bir şekilde ihtiyacı olan ailelere verilebilir. Böylelikle süt bankaları sayesinde kendi annelerinden süt alamayan bebekler için güvenli bir beslenme kaynağı sağlanarak, bebek ölümlerinin azaltılması sağlanır. Yetim kalan, ailelerinden ayrı düşen veya mülteci kamplarında yaşayan bebekler ve küçük çocuklar için de süt bankaları hayati bir besin kaynağıdır.

Özellikle afet, savaş, salgın hastalıklar gibi annelerin bebeklerini emzirmelerine engel olabilecek durumlarda alternatif bir seçenek olarak süt bankalarının kurulması, bireylerin bu konuda farkındalıklarının sağlanması önemlidir.

Anahtar Kelimeler: Süt bankacılığı, emzirme, bebek sağlığı

THE IMPORTANCE OF MILK BANKING IN DISEASTERS

ABSTRACT

Breast milk is the natural food that has the most ideal content for the growth, development and protection of the newborn from diseases. breast milk bank; Institutions that collect breast milk, store it in certain environments and distribute it to babies in need are called.

In cases where access to breast milk is insufficient or not possible, it is aimed to meet the nutritional needs of the baby from breast milk banks. The process of collecting, processing, storing and distributing breast milk donated in milk banks to babies in need is also an important resource in disaster situations. In natural disaster situations, mothers may have difficulties in providing safe and adequate breast milk to their babies, and breastfeeding may be difficult during disasters due to stress, lack of privacy or other factors. Thanks to the milk banks, this need is met by providing breast milk to the babies who cannot get milk from their own mothers.

Babies are one of the most vulnerable groups in emergency situations. They are more susceptible to infections and diseases and their diets may be disrupted. Milk banks can provide safe and nutritious breast milk to babies who are separated from their mothers and cannot be breastfed due to stress or illness. During a disaster, food and water supplies can become scarce or contaminated, leading to malnutrition or disease. Thanks to the milk banks, the milk that has been checked beforehand in terms of infection and contamination risks can be safely given to families in need. Thus, thanks to milk banks, a safe source of nutrition is provided for babies who cannot get milk from their own mothers, and infant mortality is reduced. Milk banks are also a vital source of nutrition for babies and young children who are orphaned, separated from their families, or living in refugee camps.

It is important to establish milk banks as an alternative option, especially in situations such as disasters, wars, epidemics, which may prevent mothers from breast-feeding their babies, and to raise awareness of individuals on this issue.

AİLE İÇİ ŞİDDET ve GEBELİK

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ÖZET

Aile içi şiddetin psikolojik nedenleri; kişinin mutsuz olması, kendini değerli hissetmemesi olarak söylenebilir. Aile içi şiddet çoğunlukla kapalı kapılar ardında kalan; aşağılama, zorlama, öfke kusma gibi eylemlerden oluşan; bir aile bireyinin diğer aile birey veya bireyelerine gösterdiği şiddet içeren davranışlardır. Aile içi şiddeti birincil olarak yaşayan bireyler kadınlardır. Kadının her türlü şiddete maruz kalması ise gebeliğe uyumu olumsuz yönde etkileyebilir. Planlanmış gebelik olsun ya da olmasın gebenin şiddete maruz kalması, doğum öncesi bakımı istememesine neden olur ve gebelikte yaşanacak değişikliklere olan uyumunu zorlaştırır. Gebelikte yaşanan psikolojik şiddet gebede maternal depresyon, anksiyete gibi ruh sağlığı sorunlarına neden olur. Ayrıca stres kaynaklı psikolojik şiddet fetüsün büyüme ve gelişmesini de olumsuz etkilemektedir. Gebelikte şiddet uygulanmasının hem gebeler hem de fetüs için tekrarlayan düşükler, kanama, erken membran rüptürü, erken doğum, erken plasental ayrılma ve düşük doğum ağırlığı gibi olumsuz sonuçları vardır. Diğer sonuçlar ise hamile kadınlar için stres, bazı zararlı bağımlılıklar, intihar girişimleri, depresyon ve obstetrik-jinekolojik komplikasyonlardır.

Ciddi sağlık sorunlarına yol açan aile içi şiddetin erken dönemde tespit edilip, önlemlerin alınması çok önemlidir. Şiddetin önlenmesinde; toplum farkındalığının artırılması için etkinlikler yapılması, kurumlar arası iş birliklerinin yapılması, yeni stratejilerin geliştirilmesi önerilmektedir.

Anahtar Kelimeler: Aile içi şiddet, gebelik, kadın

GEBELİKTE BESLENME

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ÖZET

Gebelikte beslenme anne ve fetus sağlığı açısından çok önemlidir. Gebelik süresince alınan besin öğeleri ve miktarları, beslenme şekilleri, maternal morbidite ve mortalite oranlarının azaltılması için elzemdir. Gebelik planlanmadan önce anne adayının beslenme şekli değerlendirilmelidir. Olası eksiklikler tamamlanmalı ve anneye uygun danışmanlık yapılmalıdır. Bu durum sağlanırsa gebelik sağlıklı bir şekilde ilerler ve anne adayının süreci sağlıklı bir şekilde tamamlanması sağlanır. Gebelikte meydana gelen değişimlere bağlı olarak anne ve fetusun gelişimi için mineral ve vitamin ihtiyacı artar. Sağlıklı bir nesil için gebeliğin sağlıklı bir şekilde geçirilmesi gereklidir. Hamilelik dönemi süresince annenin yeme alışkanlıkları, yaşam tarzı ve beslenme şekli hem kendisi hem de doğuracağı bebek açısından önem taşır. Gebelikte yeterli beslenmenin amacı bebeğin büyüme ve gelişmesine yardımcı olan enerji miktarını sağlamanın yanında annenin depolarını korumaktır. Kadınların yeterli ve dengeli beslenmesi halk sağlığı açısından da önem taşımaktadır.

Yetersiz ve dengeli olmayan beslenme sonucunda; annede preeklamsi, diyabet vb. Gibi riskli durumlar ile, bebekte ölü doğumlar, doğumsal anomali, motor gelişim ve koordinasyonda bozulma, büyüme gelişme geriliği ve prematüre gibi komplikasyonlar gelişmektedir. Özellikle gebelik sürecinde yeterli besin ve enerji alımının arttırılmasının sağlanması, fetusun sağlıklı bir yaşama tutunması, yetişkinlik çağında hastalıkların önlenmesinde koruyuculuk görevi yapar.

Anahtar kelimeler: gebelik, maternal-fetal sağlık, beslenme, anne

PLANSIZ GEBELIKLER VE SONUÇLARI

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ÖZET

Sağlıklı bir gebelik süreci için gebeliklerin planlı olması hem anne hem de bebeğin sağlığı açısından önemlidir. Plansız gebelikler, sosyal, tıbbi ve toplum sağlığı açısından önemli bir sağlık sorunudur. İstenmeyen ya da plansız gebeliklerin nedenleri arasında bireysel veya dini inançlar, kadının kendi kararlarını verememesi, kontraseptif yöntemlere ulaşmada yetersizlik, gebeliğin risklerine yönelik yetersiz bilgi, kontraseptif yöntemleri etkili ve doğru kullanmada başarısızlık, kontraseptif yöntemlerin hiç kullanılmaması gibi sorunlar yer almaktadır. Ayrıca kondomun doğru kullanılmaması, tecavüz gibi durumlar nedenler sebebiyle de birçok kadın istemediği bir gebelik yaşayabilmektedir. Plansız gebelikler toplumun her kesiminde görülebilir. Ancak yapılan çalışmaya göre bazı grupların daha riskli oldukları belirtilmektedir. Plansız gebelikler genellikle sosyo-ekonomik düzeyi ve eğitim seviyesi düşük olan kadınlarda görülmektedir. Plansız gebeliklerde anne kendisinin ve bebeğinin sağlığına özen gösteremez ve sonucunda olumsuz sağlık davranışları görülebilir. Gebeliğin bireylerin isteği dışında ya da plansız gerçekleşmesi gebelik ve ebeveynlik rolüne uyumu da zorlaştırmaktadır. Annelik rolüne hazır, bebeğini isteyerek dünyaya getirmiş, ihtiyaçlarını anlayan, bebeğini seven, anne bebeğiyle pozitif bir bağ oluşturabilir. Gebelerin gebelikleri boyunca anneliği kabullenmesi, doğum sonu dönemde yenidoğan-anne arasındaki güvenli bağlanma açısından önemlidir. Yetersiz bağlanma riski taşıyan kadınlarda anksiyete ve depresyon, ruhsal hastalıklar, fetal istismar olasılığında artma ve fetüsten rahatsızlık duyma gibi problemler bildirilmiştir. Gebelikte güvensiz ve düşük düzeyde bağlanma sonucunda fetüste duygusal, fiziksel, sosyal, zihinsel ve dil gelişimi problemleri görülmektedir. Bu nedenle, gebelik döneminde bakım şartlarının iyileştirilmesi, olumsuz koşulların en aza indirilmesi ve maternal-fetal bağlanmanın daha da güçlendirilmesi sağlanmalıdır. İstenmeyen gebeliklerin önlenmesi için aile planlaması hizmetlerinden tüm bireylerin yararlanabilmeleri ve uygun aile planlaması yöntemlerini kullanabilmeleri sağlanmalıdır.

Anahtar kelimeler: aile planlaması, sağlık, güven

CİNSEL YOLLA BULAŞAN HASTALIKLAR ve ERKEK İNFERTİLİTESİ ÜZERİNE ETKİSİ

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ÖZET

Cinsel yolla bulaşan hastalıklar (CYBH); bireylerin sağlıklarını olumsuz etkilemesi ve hızlı yayılması ile toplumun sağlığı için risk oluşturmaktadır. Dünya Sağlık Örgütü (DSÖ/WHO) tedavi edilebilir CYBH'lara bağlı her gün ortalama 1 milyon yeni olgunun ortaya çıktığını bildirmektedir. CYBH'ların çoğu akut semptomlar göstererek belirti vermeden başlar. Daha sonrasında semptomlar kronikleşerek bireyin sağlık durumunu bozar. Her iki cinste de görülen, etkenin hangi CYBH olursa olsun en çok rastlanılan üç bulgusu; genital ülser, mukopürülan akıntı ve siğillerdir. Bu bulgular haricinde oral bölgede ülserizasyon, boğazda şişkinlik ve kızarıklık, idrar yaparken yanma ve ağrı, kasıkta lenfadenopati gibi semptomlar da görülebilir.

CYBH'ın erkek üreme sistemi üzerinde birçok infertil etkisi vardır. Hastalık yapan mikroorganizmalar sperm parametrelerini ve fonksiyonlarını etkiler. Veziküler bezlerdeki ve üretral enfeksiyondaki hastalığa neden olan mikroorganizmaların semene geçişi de olabilir. CYBH etkenleri, semen enfeksiyonu ve infertilite arasında ilişkiyi analiz eden birden fazla yüksek sensitif moleküler metod vardır. Klamidya, gonore, sifiliz, HSV, human sitomegalovirus, HIV, HPV Hepatit B, Hepatit C, gibi ajanlar ve sperm kalitesinin bozulması, motolitesinin azalması arasında ilişki kurulmuştur.

CYBH infertilite gibi birçok semptom ve hastalığa sebep olmaktadır. Bireylerin yaşam kalitesini düşürmekte, sağlık maliyetini artırmakta ve önemli bir halk sağlığı sorunu olarak karşımıza çıkmaktadır. Toplumun ve özellikle genç bireylerin farkındalıklarının artırılması, konuyla ilgili uygun danışmanlıkların yapılması, erken dönemde tespit edilip tedaviye başlanması önemlidir. Süreçte en önemli faktör korunmak olup sağlık ve önleme hizmetlerinin sürdürülebilir, kesintisiz ve herkes için eşit olacak şekilde devam ettirilmesi önerilmektedir.

Anahtar Kelimeler: Cinsel yolla bulaşan hastalıklar, erkekler, infertilite

ANNE VE BEBEK BAĞLANMASININ FETAL GELİŞİME ETKİSİ

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ÖZET

Bağlanma, yaşam için gerekli olan duygusal-etkileşimsel ilişki yapısı olup pek çok karmaşık faktörden etkilenen ve süreklilik gösteren bir dönemdir. Anne ve bebek bağlanması ise gebeliğin planlanması ile başlayan gebeliğin istenilen zamanda olması ve gebelik döneminde ve sonrasında da devam eden bireylerin hayatları boyunca etkisi altında kalacağı, soyut bir kavramdır. Anne bebek bağlanması; gebenin vücudu gebelik süresince değiştikçe, uterus büyüdükçe ve fetal hareketleri hissettikçe artar ve güçlenir. Annenin ilgisi genellikle bebeğe, onun sağlığına ve onun hareketlerine yönelir, böylece anne ile fetüs arasında bağlılık gelişir. Çalışmada, anne ve bebek bağlanmasının fetal gelişime etkilerinin önemi ve anne bebek bağlanmasında önemli rol oynayan davranışların vurgulanması amaçlanmıştır. Bu çalışma da annenin bebeği ile kurduğu iletişim ve etkileşim ne kadar erken ve sağlıklı ise anne bebek bağlanması da o kadar kuvvetli olacağından önem taşımaktadır. Araştırmada literatür taraması yöntemi kullanılmıştır. Prenatal dönemde güvenli bağlanmanın olması, postnatal dönemde devam eden bağlanma davranışı için de önem arz etmektedir. Güvenli bağlanmanın sağlanamaması bebeğin ileriki hayatında fiziksel ve ruhsal birtakım sorunlara yol açabilir. Maternal bağlanma sadece bebeğin yeni hayatındaki güven duygusunun olması için değil, eş zamanlı olarak annelerin, annelik rolünün gelişmesi üzerinde de etkili olan önemli bir bağlanma çeşididir. Çalışmalar; ebeveynin fetüse ve yenidoğana bağlılığı, gebelik için istekli olma, gebeliğin istenilen zamanda ve planlanmış bir şekilde olması, yoga ve meditasyon, sosyal destek alma, gebelik sırasında tütün-alkol kullanmama, doğum öncesi bakım alma, sağlıklı beslenme ve uyku alışkanlıkları, yeterli egzersiz yapma gibi etkileşimlerin anne bebek bağlanmasında önemli rol oynadığını göstermektedir. Bebeğine zayıf maternal bağlanma olasılığına sahip olan annelere yönelik uygun süreçlerin başlatılması ve bebeklerine yönelik bağlanmada kayıtsız davranışlarda bulunan annelerin motive edilmesi önemlidir. Çünkü, anne-bebek bağının kurulamaması çocuğun bilişsel, sosyal ve duygusal gelişimini, fiziksel sağlığını ve kişiler arası ilişkilerini etkileyerek uzun vadede ortaya çıkabilecek sorunlara sebep olabilmektedir. Dolayısıyla ebelerin, kadın sağlığı alanında çalışan hemşirelerin ve diğer sağlık çalışanlarının anneleri konu ile ilgili bilgilendirmeleri önemlidir.

Anahtar Kelimeler: Anne-bebek bağlanması, fetal gelişim, maternal bağlanma

SUMMARY

Attachment is an emotional-interactive relationship structure necessary for life and is a period that is affected by many complex factors and shows continuity. Mother and infant attachment is an abstract concept that starts with the planning of pregnancy and continues during and after

pregnancy, which individuals will be under the influence of throughout their lives. Mother-baby attachment increases and strengthens as the pregnant woman's body changes during pregnancy, as the uterus grows and as she feels fetal movements. The mother's attention is usually directed towards the baby, its health and its movements, thus developing attachment between mother and foetus. In this study, it was aimed to emphasise the importance of the effects of mother-infant attachment on fetal development and the behaviours that play an important role in mother-infant attachment. In this study, the earlier and healthier the mother's communication and interaction with her baby, the stronger the mother-infant attachment will be. Literature review method was used in the study. Having secure attachment in the prenatal period is also important for the attachment behaviour that continues in the postnatal period. Failure to provide secure attachment may lead to some physical and psychological problems in the baby's future life. Maternal attachment is an important type of attachment that is effective not only for the baby's sense of security in the new life of the baby, but also on the development of the mother's role as a mother. Studies show that interactions such as parental attachment to the foetus and newborn, willingness for pregnancy, pregnancy at the desired time and in a planned manner, yoga and meditation, receiving social support, not using tobacco-alcohol during pregnancy, receiving prenatal care, healthy eating and sleeping habits, and adequate exercise play an important role in mother-infant attachment. It is important to initiate appropriate processes for mothers who have the possibility of poor maternal attachment to their infants and to motivate mothers who have indifferent behaviours in attachment towards their infants. Because, failure to establish the mother-infant bond may cause long-term problems by affecting the child's cognitive, social and emotional development, physical health and interpersonal relationships. Therefore, it is important that midwives, nurses working in the field of women's health and other health professionals inform mothers about the subject.

Keywords: Mother-infant attachment, fetal development, maternal attachment

DOĞUM SONU KANAMALARIN YÖNETİMİNDE EBELİK BAKIMININ ÖNEMİ

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ÖZET

Doğum sonu dönem plasentanın doğumu ile başlayan ve doğum sonrası 6-8 haftalık süreyi kapsayan bir dönemdir, bu süreçte risk faktörlerinin bilinmesi önemlidir. Bu risk faktörlerinden doğum sonu kanama: hem dünyada hem ülkemizde anne ölümlerinin başlıca nedenlerinden biri arasında gelmektedir. Doğum sonu kanama, vajinal doğum sonrası 500 ml veya sezaryen sonrası 1000 ml kan kaybı olarak tanımlanır. Doğum sonrası dönemde kanamanın periyodik olarak değerlendirilmesi ebelerin en önemli görev ve sorumluluklarındandır.

Çalışmada doğum sonu kanamaların önlenmesinde ve takibinde ebelik bakımının öneminin vurgulanması amaçlanmıştır. Bu çalışma, ebelerin kanamanın önlenmesi için risk faktörlerini bilmesi, uygun önlemleri alması ve semptomları kısa sürede tespit ederek zamanında müdahalede bulunmaları açısından önem taşımaktadır. Araştırmada literatür taraması yöntemi kullanılmıştır.

Doğum sonu kanamanın önlenmesi ve tedavisinde WHO'nun önerdiği uterotoniklerin kullanılması, kontrollü kord traksiyonu, uterus masajı, plasentaya yönelik girişimlere ve uterusu yönelik girişimlere ilişkin kanıta dayalı uygulamalar yer almaktadır. Ebelerin doğumun 3.evresinde verdiği ebelik bakımı kanamayı önleme açısından oldukça önemlidir. Ülkemizde, T.C. Sağlık Bakanlığı gebeler için özel doğum sonrası bakım kılavuzları hazırlamıştır. Bu kılavuzlar ebelik bakım ve girişimlerinin etkin kullanımı için gereklidir ve ebeler de doğum sonu kanamanın fark edilmesi ve tedavisi için korumanın merkezindedirler, doğum sonrası bakımın etkinliğinin sağlanması için bu kılavuzları kullanmalıdırlar. Önlenebilir anne ölüm nedenlerinin başında gelen doğum sonu kanamanın önlenmesinde, fark edilmesinde ve yönetiminde kilit nokta ebelerdir. Ebeler kanamaya ilişkin riskli durumları hem travay sürecinde saptamalı hem de doğumdan sonra uterus, perine, batın, varsa epizyotomi ve laserasyonları iyi gözlemlmeli ve değerlendirmeli, riskli durumlarda hekime haber vermelidir. Dolayısıyla ebelerin, farkındalığının artırılması, annelerin doğum sonu dönemde dikkatli bir şekilde değerlendirilmesi, kanama riski taşıyan gebe var ise daha dikkatli izlenmesi ve risk saptanan annelere uygun girişim ve bakımda bulunulması önemlidir.

Anahtar Kelimeler: Doğum sonu kanamalar, ebelik bakımı, doğum sonu dönem

ABSTRACT

The postnatal period is a period that starts with the birth of the placenta and covers a period of 6-8 weeks after birth, and it is important to know the risk factors in this process. Among these risk factors, postpartum haemorrhage is one of the main causes of maternal mortality both in the world and in our country. Postpartum haemorrhage is defined as blood loss of 500 ml after vaginal delivery or 1000 ml after caesarean section. Periodic evaluation of bleeding in the postnatal period is one of the most important duties and responsibilities of midwives.

In this study, it was aimed to emphasise the importance of midwifery care in the prevention and follow-up of postpartum haemorrhage. This study is important for midwives to know the risk factors for the prevention of haemorrhage, to take appropriate precautions and to intervene in a timely manner by detecting the symptoms in a short time. Literature review method was used in the study.

In the prevention and treatment of postpartum haemorrhage, there are evidence-based practices related to the use of uterotonics, controlled cord traction, uterine massage, placental interventions and uterine interventions recommended by WHO. Midwifery care provided by midwives in the third stage of labour is very important in terms of preventing bleeding. In our country, the Ministry of Health has prepared special postnatal care guidelines for pregnant women. These guidelines are necessary for the effective use of midwifery care and interventions, and midwives are at the centre of protection for the recognition and treatment of postpartum haemorrhage and should use these guidelines to ensure the effectiveness of postnatal care. Midwives are the key to the prevention, recognition and management of postnatal haemorrhage, which is one of the leading preventable causes of maternal mortality. Midwives should detect risky situations related to haemorrhage both during the trauma process and after delivery, they should observe and evaluate the uterus, perineum, abdomen, episiotomy and lacerations, if any, and inform the physician in risky situations. Therefore, it is important to increase the awareness of midwives, to evaluate mothers carefully in the postnatal period, to follow up more carefully if there is a pregnant woman at risk of bleeding and to provide appropriate intervention and care to mothers with risk.

Keywords: Postnatal haemorrhage, midwifery care, postnatal period

SİLİKON DİOKSİT NANOPARTİKÜL MARUZİYETİNDE *OREOCHROMIS NILOTICUS*'UN KARACİĞER ANTİOKSİDANT ENZİMLERİNDE OLUŞAN DEĞİŞİMLER

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ÖZET

Ekolojik ve halk sağlığı ile ilgili yapılan araştırmalarda çevre kirliliği önemli bir sorun oluşturduğu belirlenmiştir. Gelişen teknolojiyle birlikte ağır metaller nano boyutta birçok alanda kullanımıyla toksikolojik risk açısından insan ve doğal yaşam için en kötü tehlikelerden biridir. Çalışmada *Oreochromis niloticus*'un 7 gün sürede 5 ppm ve 10 ppm Silikon dioksit nanopartikül (SiO₂ NP) maruziyetinde karaciğer dokusunda antioksidant sistem enzimleri olan süperoksit dismutaz (SOD) ve katalaz (CAT) enzim aktivitelerinde olan değişimler araştırıldı.

7 gün sonunda *Oreochromis niloticus*'un karaciğer dokusunda kontrole göre yüzde değişimleri SOD ve CAT enzim aktivitelerinde sırasıyla 5 ppm (%20 ve %14) ve 10 ppm (%52 ve %23) artış göstermiştir. SiO₂ NP maruziyetinde oluşan toksik etki sonucu SOD ve CAT enzim aktivitelerinde belirlenen artış oksidatif hasar oluşumunu gösteren önemli biyokimyasal parametrelerdir.

Anahtar Kelimeler: *Oreochromis niloticus*, Silikon dioksit Nanopartikül, Karaciğer

TİTANYUM DİOKSİT NANOPARTİKÜLLERİ *Oreochromis niloticus* ÜZERİNDE NÖROTOKSİK ETKİLERİNİN BELİRLENMESİ

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ÖZET

Titanyum dioksit nanopartikülleri (TiO₂ NP), kimyasal ve fizyolojik özellikleriyle dünya çapında büyük kozmetik, ilaç gibi büyük birçok sektörde ilgi görmüştür. Aynı zamanda TiO₂ NP, kolaylıkla temin edilmesi, ucuz oluşu ve düşük toksisite özellikleriyle ön planda kullanıma sahiptir. Bu çalışma, *Oreochromis niloticus*'un 24 saat ve 14 gün sürede 2 ppm ve 4 ppm TiO₂ NP maruziyetinde beyin dokusunda katalaz (CAT) süperoksit dismutaz (SOD) enzim aktivitelerine etkileri araştırıldı.

Oreochromis niloticus'un beyin dokusunda SOD enzim aktiviteleri 24 saat sürede SOD enzim aktivitesi 2 ppm (%24) ve 4 ppm (%51) azalma, CAT enzim aktivitelerinde 2 ppm (%33) ve 4 ppm (%69) azalma belirlenmiştir. 14 gün sürede SOD enzim aktivitesi 2 ppm (%45) ve 4 ppm (%78) azalma, CAT enzim aktivitelerinde 2 ppm (%12) ve 4 ppm (%35) azalma belirlenmiştir. Çalışmada kısa ve uzun süre TiO₂ NP maruziyetinde antioksidant sistem savunma elemanları SOD ve CAT enzim aktivitelerinde oluşan önemli değişimler nörotoksik etkinin oluştuğunu göstermiştir.

Anahtar Kelimeler: *Oreochromis niloticus*, SOD, CAT

Cu (III) ve Ti(IV) FTALOSİYANİN BİLEŞİKLERİNİN *S. aureus* ve MRSA için ANTİBAKTERİYAL FOTODİNAMİK TERAPİ ETKİSİNİN DEĞERLENDİRİLMESİ

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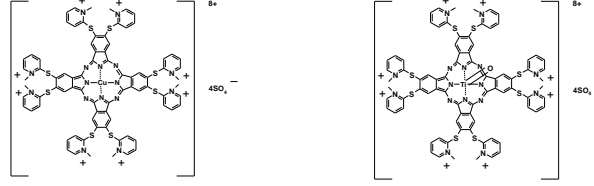
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ÖZET

S. aureus, klinik uygulamadaki en önemli bakteriyel patojenlerden biridir. Çevresel dağılıma da sahip *S. aureus* herhangi bir zamanda insan popülasyonunun üçte ikisine kadar cilt ve mukoza zarlarında (çoğunlukla burun bölgesi) kommensal olarak bulunurlar. Ancak, *S. aureus*, insanlarda en sık görülen bakteriyel enfeksiyonlardan biridir ve bakteriyemi, enfektif endokardit, deri ve yumuşak doku enfeksiyonları, osteomyelit, septik artrit, prostetik cihaz enfeksiyonları, pulmoner enfeksiyonlar, gastroenterit, menenjit, toksik şok sendromu ve idrar yolu enfeksiyonları gibi hastalıklara yol açarlar (Taylor ve Unakal, 2022). Dünya üzerinde görülen, bir patojene bağlı ölümlerin önemli bir kısmından da sorumlu olan *S. aureus* antibiyotiklere kolayca direnç kazanabilir ve MRSA (Metisilin Dirençli *S. aureus*) gibi çoklu ilaca dirençli suşların sıklıkla ortaya çıkması nedeniyle de antibiyotik ile tedavisi zorlaşmaktadır (Aryee ve Edgeworth, 2017). Artan antibiyotik dirençliliğine bağlı olarak alternatif tedavi arayışları gün geçtikçe artmaktadır.

Fotodinamik terapi (FDT), toksik olmayan fotoduyarlaştırıcı molekülün hedef hücrelerde birikmesi ve maksimum absorpsiyon bandıyla uyumlu bir ışıkla uyarılarak reaktif oksijen türleri (ROT) üretmesiyle ve ardından hücrelerin ölümü üzerine kuruludur. Açığa çıkan reaktif oksijen türleri oluştukları yerde bulunan biyomoleküllerle etkileşerek sitotoksik etki gösterirler. Hücre tipine bağlı olmayan sitotoksik etki FDT yöntemini mikrobiyal ve viral enfeksiyonlara kadar geniş bir hastalık grubu ile mücadelede kullanışlı kılar.

Yapılan bu çalışma ile; suda çözünen, okta merkaptopiridin süstitüye bakır (II) (**CuFs**) ftalosiyanın ile oksotitanyum (IV) ftalosiyanın (**TiFs**) bileşiklerinin antibakteriyal FDT etkinliği, *S. aureus* (29213, ATCC) ve MRSA (43300, ATCC) suşları için NCCLS (National Committee for Clinical Laboratory Standards) tarafından önerilen broth mikro seyreltme yöntemi kullanılarak minimum inhibisyon konsantrasyon (MİK) değeri ve logaritmik azalmadan belirlendi.



CuFs: 2,3,9,10,16,17,23,24-Oktakis-[(N-metil-2-merkaptopiridin)ftalosiyaninato] bakır (II) sülfat

TiFs: 2,3,9,10,16,17,23,24-Oktakis-[(N-metil-2-merkaptopiridin)ftalosiyaninato] oksotitanyum (IV) sülfat

Şekil 1. FDT çalışmalarında kullanılan **CuFs** ve **TiFs** bileşikleri.

FDT uygulamaları 250 ila 1,9 μM arasında değişen **Fs** derişimlerinde ve diyot lazer ışığı varlığında 8,2 J/cm² (635 nm) olacak şekilde gerçekleştirildi. Elde edilen bulgulara göre, **TiFs** bileşğinin düşük MİK değeri ve yüksek logaritmik azalma ile *S. aureus*'a nazaran MRSA için daha seçici ve fotositotoksik olduğu belirlenmiştir.

Anahtar kelimeler: Fotodinamik Terapi, Antibakteriyal, *S. aureus*, MRSA, Ftalosiyanin.

BAŞ ve BOYUN KANSERLERİNDE FOTODİNAMİK KEMOTERAPİ:

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ÖZET

Baş ve boyun maligniteleri oral kavite, nazofarenks, orofarenks, larenks, hipofarenks, nazal kavite ve paranasal sinüslerde görülen, geniş bir heterojen hastalık yelpazesini kapsar. Yaklaşık %90'ı çok katlı skuamöz epitel hücrelerinden kaynaklanan skuamöz hücreli karsinomdur (HNSCC). HNSCC, GLOBOCAN 2020 yılı tahminlerine göre yıllık 932.000 yeni vaka ve 467.000 ölüm ile tüm kanserlerin %4,2'si ve tüm kanser ölümlerinin %3,9'unu oluşturarak en yaygın altıncı kanser türü olmaya ve toplum sağlığını tehdit etmeye devam etmektedir (Sung, 2021). Erken evre skuamöz karsinomlarında konvansiyonel yöntemlerle tedavide başarı şansı yüksek olmakla birlikte, hastalığın klinik teşhisi sıklıkla geç evrelere denk gelmektedir. Bu nedenle konvansiyel yöntemlerle tedavide 5 yıllık sağ kalım oranı düşüktür. Ayrıca farklı birçok yan etkinin de eşlik ettiği geleneksel tedavi süreci, hasta için yaşam kalitesi ve kozmetik açıdan da sıkıntılıdır.

Geleneksel tedavi yöntemlerinin başarısız ve/veya yetersiz olduğu durumlarda yan etkisi az, hedefli, tekrarlanabilir, diğer tedavi yöntemleri ile kombine edilebilir, ucuz ve etkili tedavi yöntemlerinin geliştirilmesi bilimsel ilginin odağını oluşturur. Mevcut klinik uygulamalara da yansıyan başarısı ile fotodinamik terapi (PDT) umut verici alternatif bir kanser tedavi yöntemidir.

Fotodinamik terapi, oksijen varlığında ışığa duyarlaştırıcı molekülün (PD) ışık kullanılarak aktive edilmesi ile lokal doku yıkımının başlatıldığı bir tedavi yöntemidir. PDT'nin başarılı bir şekilde uygulanması için moleküler oksijen, fotoduyarlaştırıcı ajan ve uygun dalga boyunda ışık kaynağı gereklidir.

Baş ve boyun kanserlerinde, kanserli dokunun bulunduğu yer ile büyüklüğü ve yaygınlığının cerrahi müdahaleye izin vermediği durumlar için minimal invaziv müdahale sunan PDT iyi bir alternatiftir ve birçok vakada cerrahi tedaviden daha iyi terapötik etki sağlandığı rapor edilmiştir. Çeyrek asırdan uzun bir süredir, dünyanın birçok farklı kliniğinde baş ve boyun malignitelerini tedavi etmek için çok sayıda PD [porfimer sodyum, temoporfın, δ -aminolevulinik asit (ALA) ve fimaporfın] bileşiği kullanılmaktadır. PDT'nin en önemli klinik uygulaması, ağız boşluğu, farenks ve larinksin yüzeysel alan karsinomlarında görülür ve rutin tedavi yöntemi olarak uygulanır.

Anahtar Kelimeler: Baş ve Boyun Kanserleri, Fotodinamik Kemoterapi, Fotoduyarlaştırıcı, ROT.

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COVID-19 PANDEMİ SÜRECİNDE UYGULANAN UZAKTAN EĞİTİM SİSTEMİNE YÖNELİK HEMŞİRELİK ÖĞRETİM ELEMANLARININ GÖRÜŞLERİ

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ÖZET

Bu çalışma COVID-19 pandemi sürecinde hemşirelik öğretim elemanlarının uzaktan eğitim sistemine yönelik görüşlerini belirlemek amacıyla yapıldı. Tanımlayıcı tasarımda olan çalışmanın örneklemini Temmuz 2020-Şubat 2021 tarihlerinde Türkiye’de hemşirelik bölümünde çalışan ve uzaktan eğitim sistemini aktif şekilde kullanan 127 öğretim elemanı oluşturdu. Çalışma verileri araştırmacılar tarafından geliştirilen “Bilgi Formu” ve “Öğretim Elemanlarının Uzaktan Eğitime Yönelik Görüş Formu” ile online platformlar üzerinden toplandı. Çalışma verilerinin değerlendirilmesinde ortalama, standart sapma ve yüzdelik dağılım kullanıldı. Araştırmaya katılan öğretim elemanlarının yaş ortalaması 40,63±7,32 ve %96.9’u kadındı. Öğretim elemanlarının %96.1’i devlet üniversitesinde görev yapmaktaydı. Öğretim elemanlarının büyük çoğunluğunun pandemi öncesi uzaktan eğitimi kullanmadığı ve uzaktan eğitimin kullanılmasına yönelik eğitim almadığı belirlendi. Katılımcıların büyük çoğunluğu uzaktan eğitim sisteminin eğitimde tek başına etkin bir yöntem olmadığını, nitelikli sağlık personeli yetiştirilmesini olumsuz etkileyeceği düşüncesindeydi. Bu nedenle derslerin telafisinin yapılmasını düşünen öğretim elemanları çoğunlukta idi. Öğretim elemanlarının yarıdan fazlası uzaktan eğitimle ders anlatmaktan zevk olmadığını belirtti ve genel olarak uzaktan eğitime yönelik memnuniyet düzeyi düşüktü. Öğretim elemanlarının uzaktan sisteme yönelik en sık yaşadığı sorunlar arasında öğrencilerle yeterli iletişim sağlayamama ve altyapı kaynaklı sorunlar yer almaktaydı. Ayrıca yanıtlara göre uzaktan eğitim sistemine yönelik eğitici eğitimine ihtiyaç olduğu görüldü. Sonuç olarak uzaktan eğitim sisteminde öğrencilerin performansını ve öğretim elemanı ile öğrenci etkileşimini artıracak girişimlerin yapılması, kurumların sisteme yönelik sorunları saptayarak iyileştirmelerin planlanması gereklidir. Bu doğrultuda eğitici eğitimlerinin yapılması, altyapı sistemlerinin güçlendirilmesi, öğrencinin katılımını arttırmak amacıyla derslerin senkron şekilde yapılmalıdır. Bu çalışma pandeminin erken dönemlerinde yapılması nedeniyle ilerleyen süreçlerde öğretim elemanlarının uzaktan eğitim sistemine yönelik memnuniyet, görüş ve yaşadığı sorunları belirlemeye yönelik çalışmaların yapılması önerilir.

Anahtar Kelimeler: Covid, Hemşirelik, Öğretim Elemanı, Uzaktan Eğitim.

ZORUNLU UZAKTAN EĞİTİMİN HEMŞİRELİK ÖĞRENCİLERİNİN MESLEKİ KİMLİK GELİŞTİRME SÜRECİNE ETKİSİ: BİR GÖZDEN GEÇİRME

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ÖZET

Hemşirelik doğası gereği uygulamalı bir bilimdir ve müfredat konuları uygulamayla bağlantılıdır. Bu nedenle öğrencilere bilişsel, duyuşsal ve psikomotor alanlarda kazanmaları gereken yeterlilikleri kazandırmak için hemşirelik eğitimi geleneksel yüz yüze sınıflarda verilmektedir. Hemşirelik öğrencileri okul, laboratuvar ve uygulama ortamlarında aldıkları eğitim doğrultusunda mesleğin değer, inanç, beklenti ve uygulamalarını içselleştirerek mesleki kimliklerini kazanmaya ve geliştirmeye başlarlar. Ancak Türkiye'deki hemşirelik öğrencileri son dört yılda iki kez alınan zorunlu uzaktan eğitim kararı doğrultusunda eğitimlerine uzaktan devam etmek zorunda kalmıştır. Bu kararlardan ilki COVID-19 küresel salgın nedeniyle, ikinci ise Dünya Sağlık Örgütü'nün 3. seviye acil durum ilan ettiği Türkiye'de 10 ili etkileyen depremler nedeni ile alınmıştır. Alınan son kararda derslerin teorik kısmının uzaktan eğitim yöntemi ile yapılacağı uygulama kısmının ise bu yılın Nisan ayından sonraya bırakılacağı belirtilmiştir. COVID-19 küresel salgını sürecinde uygulamalı derslerin uzaktan eğitim modeliyle yürütülmesinde sorunlar yaşandığı ve uygulanan zorunlu uzaktan eğitimin öğrencilerin mesleki kimlik gelişimini büyük ölçüde olumsuz etkilediği bilinmektedir. Bu doğrultuda özellikle bu yıl 3 ve 4. sınıflarda bulunan ve eğitimleri sürecinde ikinci kez zorunlu uzaktan eğitim alan hemşirelik öğrencilerinin mesleki gelişimleri endişe kaynağı olmaktadır. Derlemenin amacı, zorunlu uzaktan eğitimin hemşirelik öğrencilerinin mesleki kimlik geliştirme süreçlerine etkisini değerlendirmek ve hemşirelik eğitimine nasıl devam edilebileceği konusundaki belirsizlik hakkında literatür doğrultusunda çıkarımlarda ve önerilerde bulunmaktır.

Anahtar Kelimeler: Uzaktan Eğitim, Hemşirelik Eğitimi, Hemşirelik Öğrencisi, Mesleki Kimlik

ABSTRACT

Nursing is an applied science by nature, and curriculum topics are linked to practice. For this reason, nursing education is given in traditional face-to-face classes in order to provide students with the competencies they need to gain in cognitive, affective and psychomotor areas. Nursing students begin to gain and develop their professional identity by internalizing the values, beliefs, expectations and practices of the profession in line with the education they receive in school, laboratory and practice environments. However, nursing students in Türkiye had to continue their education remotely in line with the compulsory distance education decision taken twice in the last four years. The first of these decisions was taken because of the COVID-19 global epidemic, and the second because of the earthquakes that affected 10 provinces in Türkiye, which the World Health Organization declared as a level 3 emergency. In the final decision, it was stated that the theoretical part of the courses will be done with the distance education method, and the practical part will be left after April of this year. It is known that during the COVID-19 global epidemic, there are problems in the conduct of applied courses with the distance education model, and the compulsory distance education applied greatly negatively affects the professional identity development of students. In this direction, the professional development of nursing students, who are in the 3rd and 4th grades this year and who are receiving compulsory distance education for the second time during their education process, is a source of concern. The aim of the review is to evaluate the effect of compulsory distance education on the professional identity development process of nursing students and to make inferences and suggestions in the light of the literature about the uncertainty about how to continue nursing education.

Key Words: Distance Education, Nursing Education, Nursing Student, Professional Identity

CALCULATION AND MEASUREMENT OF MECHANICAL STRESS IN POWER DISTRIBUTION TRANSFORMER CORE USING FINITE ELEMENT METHOD

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ABSTRACT

High-efficiency distribution transformers must be used in the transformer manufacturing sector due to the unavoidable increases in customer costs in the recent competitive market climate. This situation constitutes the purpose of the design optimization of the distribution transformer. Researchers want to achieve lower size, weight, and cost and higher operating performance by economically using existing materials in distribution transformers. For this purpose, the characteristics of all components of distribution transformers should be examined in detail. In this study, short circuit analysis of the power distribution transformers, from the aspect of winding deformation as a result of mechanical stress, and electromagnetic forces. First, the leakage inductance of the windings is measured, and then the numerical calculation of electromagnetic forces of a short circuit is determined. This is done in order to determine if there are any significant changes in the geometry of the windings as a result of the electromagnetic forces. The results of the calculation test obtained using the finite element method are presented graphically. The analysis of mechanical deformations caused by electromagnetic forces in the core of the distribution transformer was carried out.

Keywords: Distribution transformer, Mechanical stress, Electromagnetic force, Finite element method.

FOTOVOLTAİK PANELLER İLE ELEKTRİK ENERJİSİ ÜRETEN ULUS-BARTIN ENDÜSTRİYEL ARITMA TESİSİNİN KURULUMU VE MALİYET ANALİZİ

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ÖZET

Elektrik enerjisi, üretim sektöründeki verimliliği arttıran temel unsurlardan biridir. Özellikle son yıllarda artan tüketim değerleri ve buna bağlı olarak üretim oranının yükselmesi nedeniyle insanların elektrik enerjisine olan ihtiyacı da giderek artmaktadır. Bu artış neticesinde elektrik enerjisi üretim-tüketim dengesi arasındaki fark da giderek artmaktadır. Son yıllarda gelişmekte olan ülkelerde üretim-tüketim dengesi arasındaki açığı kapatmak, azalan kaynaklar karşısında ekonomik büyümeyi devam ettirmek ve gelişmişlik düzeyini artırmak amacıyla birincil enerji kaynaklarının kullanımı teşvik edilmektedir. Birincil enerji kaynakları doğada bulunan ve herhangi bir enerji dönüşümüne uğramamış olan, yenilenebilir kaynakları ve fosil yakıtları kapsayan enerji türüdür. Bu çalışmada, yenilenebilir enerji kaynakları incelenerek, Türkiye'deki enerji üretim payları hakkında bilgiler verilmiştir. Yenilenebilir bir enerji kaynağı olan güneş enerjisi ile ilgili bilgiler verilerek, Türkiye'deki güneş enerjisi potansiyeli ve fotovoltaik sistem teknolojisi, fotovoltaik panel yapıları ve çalışma prensipleri anlatılmıştır. İller Bankası A.Ş. bünyesinde gerçekleştirilen Bartın iline ait "Ulus Endüstriyel Arıtma Tesisi'nin" enerji ihtiyacı için fotovoltaik paneller kullanılarak sistem tasarımı gerçekleştirilmiştir. Sistemin fizibilite çalışması ve maliyet hesapları PVSOL Expert 6.0 ve Lynx Planner 1.1 programları kullanılarak hazırlanmıştır. Özellikle belediyeler açısından, fotovoltaik sistemlerin kullanılmasına yönelik mevcut ve örnek projeler bu çalışma kapsamında detaylı olarak incelenerek maliyet analizleri gerçekleştirilmiştir.

Anahtar Kelimeler: Fotovoltaik panel, Endüstriyel arıtma tesisi, Elektrik enerjisi üretimi.

CONSTRUCTION AND COST ANALYSIS OF ULUS-BARTIN INDUSTRIAL TREATMENT PLANT GENERATING ELECTRIC ENERGY WITH PHOTOVOLTAIC PANELS

ABSTRACT

Electrical energy is one of the basic elements that increase efficiency in the production sector. Especially in recent years, people's need for electrical energy is increasing due to the increasing consumption values and the corresponding increase in the production rate. As a result of this

increase, the difference between the electricity energy production-consumption balance is also increasing. In recent years, the use of primary energy resources has been encouraged in developing countries in order to close the gap between production-consumption balance, maintain economic growth in the face of diminishing resources, and increase the level of development. Primary energy sources are energy types that are found in nature and have not undergone any energy transformation and include renewable resources and fossil fuels. In this study, renewable energy sources are examined and information about the share of energy generation is given in Turkey. By giving information about solar energy, which is a renewable energy source, solar energy potential, and photovoltaic system technology in Turkey, photovoltaic panel structures and working principles are explained. The system design was carried out using photovoltaic panels for the energy needs of the “Ulus Industrial Treatment Plant” of the province of Bartın, which was realized within the body of Iller Bank. The feasibility study and cost calculations of the system were prepared using PVSOL Expert 6.0 and Lynx Planner 1.1 programs. Existing and exemplary projects for the use of photovoltaic systems, especially for municipalities, were examined in detail within the scope of this study and cost analyzes were carried out.

Keywords: Photovoltaic panel, Industrial treatment plant, Electrical power generation.

GRADYAN TABANLI SLİME MOULD ALGORİTMASI

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ÖZET

Gradyan tabanlı optimizasyon algoritması (GTOA), gradyan arama mekanizması ve yerel optimum noktadan kaçış kabiliyeti ile etkili bir meta sezgisel algoritmadır. GTOA, Newton'un gradyan-tabanlı metodundan esinlenen bir metasezgiseldir. Diğer yandan Slime mould algoritması (SMA), doğadaki slime topluluğunun salınımdan esinlenen ve sömürü ve keşif aşaması arasındaki dengeyi başarılı bir şekilde kontrol eden stokastik bir optimizasyon algoritmasıdır. Bu çalışmada her iki optimizasyon algoritmasının avantajları birleştirilerek yeni bir hibrit meta sezgisel Gradyan Tabanlı Slime Mould algoritması (GSMA) önerilmektedir. GSMA, hem SMA'nın salınım özelliğinden ve arama stratejisinden hem de GTOA'nın yerel optimumdan kaçış stratejisinden yararlanır. Karşılaştırılan yöntemler için tek modlu ve çok modlu kıyaslama problemleri üzerinde, 30 bağımsız çalıştırma sonucunda ortalama, en iyi ve standart sapma değerleri raporlandı. Yakınsama eğrileri de 30 bağımsız çalıştırmanın ortalaması ile çizdirildi. Yakınsama eğrileri, GSMA'nın başarılı bir yakınsama performansı gösterdiğini doğrulamaktadır. Ayrıca GSMA'nın, kıyaslama problemleri üzerindeki yakınsama performansı, literatürdeki iyi bilinen; balina optimizasyon algoritması, gri kurt algoritması, güve alevi algoritması, salp sürüsü algoritması, sinüs-cosinüs algoritması, diferansiyel evrim algoritması ve parçacık sürüsü optimizasyonu ile karşılaştırılmıştır. Yakınsama eğrileri, GSMA'nın hem erken yakınsama hem de yerel optimumda kaçış kabiliyetlerinin diğer yöntemlerden daha iyi olduğunu göstermektedir. Karşılaştırılan yöntemler, box-plot olarak da görselleştirilmiş ve ortalama, en iyi ve standart sapma değerleri yorumlanmıştır. Ayrıca GSMA'nın diğer yöntemler ile arasında Wilcoxon işaret sıralama istatistiksel testi uygulanmış ve GSMA'nın diğer yöntemlerden önemli ölçüde, %5 anlamlılık düzeyinde farklı olduğu görülmüştür. İstatistiksel sonuçlar ve yakınsama eğrileri göz önüne alınırsa, GSMA'nın meta sezgisel algoritmalar içerisinde umut vadeden sonuçlar verdiği görülmektedir.

Anahtar Kelimeler: Gradyan tabanlı optimizasyon algoritması, Slime mould algoritması, Meta sezgisel algoritmalar, kıyaslama problemleri.

0-1 SIRT ÇANTASI PROBLEMİNİN CEYLAN OPTİMİZASYON ALGORİTMASI İLE ÇÖZÜMÜ

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ÖZET

Sırt çantası problemi, geleneksel bir kombinatoriyal optimizasyon problemidir. Bu problemde amaç, çantanın kapasitesini aşmadan taşıma yükünü maksimize etmektir. Çanta kapasitesi veya materyal sayısı arttırıldığında, problemin karmaşıklığı da önemli ölçüde artmaktadır. Bu çalışmada, 0-1 sırt çantası probleminin çözümü için güncel bir metasezgisel algoritma olan ceylan optimizasyon algoritması (COA) kullanılmıştır. S ve V şekilli transfer fonksiyonları kullanılarak ikili forma getirilen COA ile küçük ve orta seviyeli problem örneklerinin çözümleri elde edilmiş ve literatürdeki yöntemlerle çalışma zamanı ve iterasyon sayıları bakımından karşılaştırmalar yapılmıştır. Buna göre COA'nın diğer yöntemler gibi optimum değere ulaştığı veya çok yakın bir değere yakınsadığı sonucuna varılmıştır. COA'nın bazı algoritmalarından daha kısa sürede yakınsama eğilimi gösterdiği de problemin sonuçları arasındadır.

Anahtar Kelimeler: 0-1 sırt çantası problemi, ceylan optimizasyon algoritması, transfer fonksiyonu, metasezgisel algoritmalar.

THE IMPACT OF EMOTIONAL FACES ON EXECUTIVE CONTROL OF ATTENTION: A STUDY

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ABSTRACT

In persons with elevated anxiety or depression, there is a heightened focus on negative or threatening stimuli. Therefore, the ability to measure attentional bias is crucial for diagnosing and treating various psychopathological disorders. The effect of the three subcomponents of the Attention Network Theory of positive and negative emotional expressions on alerting, orientation, and executive control will be analyzed in this study. The Attention Network Task prepared by Fan et al. (2022) will be utilized to investigate the effect of emotional expressions on attentional bias. Emotional expressions such as angry face or smiling face will substitute some of the stimuli in the test. The test will involve the simultaneous and separate display of two different spatial facial expressions in different positions of the screen, each for 250ms. Next, the participant will be prompted to respond to the congruent - incongruent stimuli, which are presented as ordered triangular shapes pointing towards the right and left. The scores and reaction times of the participants as well as their orientation and executive control processes will be assessed. The orientation towards positive statements will be enhanced through the use of positive reinforcement methods based on operant conditioning. The level of orientation towards positive expressions will be determined by calculating the response given to congruent and neutral stimuli associated with positive expressions. Participants' anxiety and depression levels will be assessed before the test and divided into three groups based on the scores: high anxiety, high depression, and normal anxiety-depression. The purpose of this method is to increase positive selection in attention tendencies by retraining endogenous covert orienting and improving the correct response rate of individuals with high anxiety and depression to compatible stimuli corresponding to positive stimuli through positive reinforcement.

Keywords: Attention Network, Attentional Bias, Emotion, Anxiety, Depression

ON THE OPERATION OF DIVISION AND LINEAR MAPPING

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ABSTRACT

In this study, linear transformations with division operation in matrices are investigated. Most of the linear transformations in the literature are done with vector. Examples are given over the field of real numbers. In the study, regular matrices are used instead of vectors. Known property, lemma, theorems of linear transformations are discussed. Different situations are identified. New approaches are demonstrated. The contribution of this situation to new theorems, lemmas and properties is observed. Emphasis is placed on the symmetrical reflections. Attention is drawn to the relation of some conserved fundamental functions on transformations in matrix algebra with the division operation. Also, in this study, the main relationship between linear transformations and division is given. Some examples of linear transformation types are given. Some known concepts in matrix theory are compared with transformation. This expression between two vector spaces defined on an object is examined in the regular matrix structure given on a field. Some of the concepts in vector spaces are covered in the structure. Derivative definition of returns given in real-valued functions, simple transfer for linear transformations is provided. New results are followed on the samples. Some results for non-linear structures are presented. The obtained results are compared. In addition, how regular matrices that provide the poloid structure interact with linear transformations is discussed. The variation of some properties in the poloid structure under linear transformation is investigated. Some new results are obtained.

Linear transformations are given over binary systems. The new concepts obtained are transferred. The comparison of the concepts is examined in detail. New approaches are demonstrated.

Anahtar Kelimeler : linear mapping, division, operation, transformation

ON ROW CO-DIVISORS IN REGULAR MATRICES

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ABSTRACT

This study is about the solution of the equation $XA=B$, similar to the matrix division revealed by obtaining the solution of the matrix equation $AX=B$ in 2010. This study is about the solution of the equation $XA=B$, similar to the matrix division revealed by obtaining the solution of the matrix equation $AX=B$ in 2010. The solution of the $AX=B$ equation is based on the displacement of the columns. Taking this into account, the definition of division in matrices is made. The definition of division is not contradict with matrix multiplication. This provided many benefits. For example, the solution of n -times systems of type $m \times n$ is easily obtained. Taking this gain into account, the solution of $m \times n$, n -times system of equations in the form of $XA=B$ is investigated in study. As it turns out, this solution is based on the displacement of rows. The theoretical expression of this approach is given. The features between the previously given partition and the partition were examined. Necessary comparisons were made. The rapid results are obtained in the local and even holistic comparison of the matrices obtained from the systems. Therefore, The row co-divisor is expected to make a significant contribution to the comparison of technological solutions. On the contrary, this approach allows observing mass solutions, variation between local solutions. Also, the link between the transpose, the determinant, division, and row change of a matrix is obtained in the study. This study is introduced definitions, features, and lemmas to the new literature.

Anahtar Kelimeler : row co-divisor, column co-divisor, solution equations, division.

EVALUATION OF THE ELECTRICAL ENERGY EFFICIENCY PRODUCED BY THE HARMANDALI LANDFILL FACILITY DURING THE COVID 19 PANDEMIC PERIOD

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* Yazışma Yazarı:

ABSTRACT

The methane gas generated during the disposal of solid wastes should be evaluated in the best way possible. With this evaluation, while the pollution caused by the wastes to the environment is eliminated, electrical energy is produced at the same time. Using the data of the 39.69 MW Harmandalı Regular Waste Storage Facility (RWSF), which has 27 gas generators of 1.47 MW in İzmir province, the evaluation of energy efficiency and efficiency improvement methods was made with the multiple regression method. In addition, the amount of methane gas currently stored and to be stored and the components of the landfill gas were determined with the Landfill Gas Emissions Model (LandGEM). Afterwards, in the study carried out by the Harmandalı RWSF, it was determined that one ton of garbage creates approximately 50-240 m³ of methane gas. It has been observed that 1 m³ of methane gas produces approximately 2 kW of electrical energy. With the study carried out, it is predicted that the efficiency of electrical energy production from biogas will increase by about 5%-10%.

Keywords: Renewable Energy, Solid Waste, Multiple Regression Analysis, Energy Efficiency.

TERMÖELEKTRİK JENERATÖRLERDE MAKSİMUM GÜÇ NOKTASI İZLEMEK İÇİN GÜÇ ÖLÇÜM İZLEME SİSTEMİ TASARIMI VE UYGULAMASI

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ÖZET

Termoelektrik jeneratörler (TEG) atık ısının geri kazandırılmasında kullanılırlar ve verimleri oldukça düşüktür. Bu nedenle maksimum güçte çalıştırılmaları istenir. Bu çalışmada, TEG'lerde maksimum güç noktası izleme (MPPT) algoritmalarının mikrodenetleyiciler (MCU) ile çalıştırılması için gerekli olan akım ve gerilim izleme sistemi tasarlanmış ve gerçekleştirilmiştir. Akım, gerilim, TEG çıkış gücü, DC-DC çevirici çıkış gücü ve metal oksit yarıiletken alan etkili transistörün (MOSFET) görev çevrimi verileri ince-film transistör sıvı kristal gösterge (TFT LCD) ile görselleştirilmiş ve anlık olarak izlenmiştir. MPPT için kullanılan TEG çıkış gücünün belirlenmesinde yüksek taraf akım ve gerilim algılayan INA219 sensörü kullanılmıştır. Bu akım ve gerilim değerleri MPPT algoritmaları için dijitalleştirilmiştir. DC-DC çeviricinin çıkışına bağlanan yükten geçen akım değerinin belirlenmesi için düşük taraf akım sensörü INA169 ile algılama yapılmıştır. Yükün gerilimi için bir gerilim bölücü kullanılarak 50 V DC'ye kadar gerilimler algılanmıştır. INA169 akım bilgisi ve gerilim bölücünün gerilim bilgisi ATmega 2560 MCU'nun analog girişlerine iletilerek on bitlik analog dijital çevrim (ADC) yapılmıştır. Böylece tüm veriler ATmega 2560 MCU üzerinde toplanarak hem TEG çıkışının hem de yükseltilen DC-DC çeviricinin çıkış verileri görselleştirilmiş, kayıt altına alınmış ve dijitalleştirilmiştir. Sonuçta bu veriler rahatlıkla MPPT algoritmalarının girişlerinde kullanılacak bir duruma getirilmiştir.

Anahtar Kelimeler: MPPT, TEG, Konvertör, Akım Algılama, Gerilim Algılama, TFT LCD.

KİSMİ EN KÜÇÜK KARELER YAPISAL EŞİTLİK MODELLEMESİYLE ÇEVRESEL KAYGI VE TEŞVİK DÜZEYİNİN ATIK AYIRMA TUTUMLARINA ETKİSİ

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Özet

Evsel atıkların ayrıştırılması doğal kaynakların korunması, temiz bir çevrede yaşama imkânı oluşturması ve enerji tasarrufu nedeniyle ekonomiye katkı sağlaması açısından son derece önemlidir. Bu çalışmada, Ajzen'in Planlı Davranış Teorisi (PDT) modeli temel alınarak modele evsel atık ayırma bilgisi, çevresel kaygı, suçluluk hissi, evsel atık ayırmaya yönelik teşvik ve evsel atık ayırma bilgisini ölçmek için oluşturulan bilgi olmak üzere 4 faktör ilave edilerek, bireylerin atık ayırmaya yönelik davranışlarını araştırmak amacıyla Genişletilmiş Atık Ayırma Modeli (GAAM) önerilmiştir. Önerilen model kısmi en küçük kareler yapısal eşitlik modellemesi (PLS-SEM) kullanılarak test edilmiş ve modelin uygunluğu çeşitli uyum ölçütlerine göre değerlendirilmiştir.

Anahtar Kelimeler: Evsel Atık Ayırma, Planlı Davranış Teorisi, Çevresel Kaygı, Suçluluk Hissi, Evsel Atık Ayırmaya Yönelik Teşvik

The Effect of Environmental Concern and Incentive Level on Waste Separation Attitudes by Partial Least Squares Structural Equation Modeling (PLS-SEM)

Abstract

Separation of household waste is extremely important in terms of protecting natural resources, creating the opportunity to live in a clean environment and contributing to the economy due to energy savings. In this study, based on Ajzen's Theory of Planned Behavior (TPB) model, 4 factors were added to the model, namely, knowledge of household waste sorting, environmental concern, feeling of guilt, incentives for household waste sorting, and knowledge formed to measure household waste sorting knowledge. The Extended Waste Separation Model (EWSM)

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has been proposed to investigate individuals behavior towards waste separation. The proposed model was tested using partial least squares structural equation modeling and the fit of the model was evaluated according to various fit criteria.

Keywords: Household Waste Separation, Theory of Planned Behaviour, Environmental Concern, Feeling of Guilt, Incentives for Household Waste Separation

E-ATIK GERİ DÖNÜŞÜM DAVRANIŞLARININ PLANLANLI DAVRANIŞ TEORİSİYLE İNCELENMESİ

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ÖZET

Son teknolojik gelişmeler kısa bir kullanım süresi içinde birçok elektronik cihazı atığa dönüştürmüştür. Teknolojik gelişmişlerin hızı ve üretilen cihaz sayılarındaki artış elektronik atık (e-atık) küresel bir sorun haline gelmiştir. Bu nedenle e-atıkların çevre ve insan sağlığı üzerindeki olumsuz etkileri, etkili bir düzenleyici sistem toplum ve iş sektörleri tarafından bertaraf edilen e-atıkların toplanması ve arıtılmasına büyük ihtiyaç duyulmaktadır. Bu araştırmanın amacı; Planlanan Davranış Teorisi yardımıyla bireylerin e-atık geri dönüşüm olgusuna ilişkin davranışlarını incelemektir. Öncelikle literatür taramasıyla model ve veri toplama aracı geliştirilmiştir. Veriler online olarak gönüllülük esasına göre toplanmıştır. Model uyumu ve hipotezlerin testi kısmi en küçük kareler yapısal eşitlik modellemesi (PLS-SEM) ile yapılmıştır.

Anahtar Kelimeler: Geri dönüşüm, Elektronik atık, Planlanan Davranış Teorisi (PDT)

E-WASTE RECYCLING BEHAVIORS EXAMINATION WITH PLANNED BEHAVIOR THEORY

ABSTRACT

Recent technological developments have turned many electronic devices into waste in a short period of use. The speed of technological advances and the increase in the number of devices produced electronic waste (e-waste) has become a global problem. Therefore, there is a great need for the collection and treatment of e-waste, which is disposed of by the negative effects of e-waste on the environment and human health, an effective regulatory system, society and business sectors. The purpose of this research; With the help of Planned Behavior Theory, it is to examine the behavior of individuals regarding the e-waste recycling phenomenon. First of all, a model and data collection tool was developed through literature review. Data were collected online on a voluntary basis. Model fit and hypothesis testing were done with partial least squares structural equation modeling (PLS-SEM).

Keywords: Recycling, Electronic waste, Theory of Planned Behavior (TPB)

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ACTUARIAL APPLICATIONS ON CANADIAN INSURANCE DATA USING THE COPULA APPROACH

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ABSTRACT

In actuarial science, it is important to determine the distribution of future lifetimes in the pricing of annuity and insurance products. In practice, these products are created for single and multiple lives. It is usually assumed that the future lifetimes of individuals in multiple live cases are independent of each other. However, this assumption, which provides simplicity in actuarial calculations, does not coincide with actual insurance data. Married couples may be exposed to similar risks because they have the same life circumstances. Therefore, the future lifetimes of individuals affect each other. The Canadian insurance dataset¹, where joint lives are highly correlated, is a good example. This case requires an assessment of the dependency structure in calculating insurance products.

In our study, we examine the dependency structure of joint lives using Archimedean copulas, which are also suitable for the Canadian insurance dataset and frequently preferred in the literature. We then analytically analyzed the pricing of various annuities and insurance products at different age groups for copula parameters corresponding to various correlations. Firstly, the survival probabilities are calculated for certain ages of single lives with the Gompertz mortality model. Then, joint survival probabilities are obtained by assuming that the future lifetimes of individuals in the multiple live cases are dependent and independent. Finally, the effect of dependence is measured on the net single premium amounts of annuities and insurance products. As a result, differences are found in net annual premiums evaluated according to dependency or independence assumptions.

Keywords : Multiple live, Dependence, Copula, Actuarial Premium

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EFFECTS OF 6-PPD- QUINON ON AQUATIC CREATURES

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ÖZET

Dünyada kullanılan kara taşıtlarının sayısı 2 milyara yaklaşmaktadır. Bu araçların büyük çoğunluğunda, lastik tekerlek kullanılmaktadır. Motorlu araçların fosil yakıt kullanımından kaynaklı çevre kirliliği, elektrik motorlarının kullanımıyla petrol ürünlerinin yanmasıyla doğaya bırakılan eksoz gazlarının çevresel zararlı etkilerinin azaltılması amaçlanmaktadır. Ancak araç lastiklerinin ömrünü uzatmak, performansını arttırmak amacıyla, lastik ağırlığının %5-10'u oranında kimyasal katkıları ilave edilmektedir. Lastik üretiminde, lastiği doğal ozondan koruma amaçlı olarak %0,5 -2 oranında 6-PPD ilave edilmektedir. 6-PPD, ozonla reaksiyona girer ve 6-PPD quinon maddesini oluşturur. 6-PPD maddesi çok reaktif bir bileşiktir ve suda çözünürlüğü düşüktür. Sulu ortamda yarı ömrünün, distile suda bile sadece birkaç saat olduğu bildirilmektedir. Oysa PPD-quinon ise suda çözünürlüğü iyi, stabil ve daha toksik bir maddedir. Dünya çapında yaygın olarak kullanılan bir lastik kauçuk antioksidanı olan 6-PPD'nin ozonla reaksiyonundan meydana gelen 6-PPD quinon sular vasıtasıyla tüm gıda ağında toksisiteye neden olan, yeni keşfedilen ve her yerde bulunabilen bir kirlenmedir. Yakın zamanda yapılan bir çalışmada, 6PPD quinon maddesinin koho somonunun toplu ölümlerinden sorumlu olduğu bildirilmiştir. Pasifik Okyanusunda yaşayan bu balıkların, yumurtlamak için geldikleri, işlek yollara yakın kentsel derelere geldiği sırada, yağın yağmurlardan sonra öldüğü görülmüş ve yapılan incelemelerde bunun lastiği ozon etkisinden koruyan 6-PPD maddesinin ozonla birleşmesi sonucu meydana gelen 6-PPD quinon maddesinin sebebi olduğu öne sürülmüştür. Lastik aşınmasıyla yollara dökülen bu bileşik yağmur sularıyla asfalttan yıkanıp dere ve nehirlere ulaşarak burada su canlılarının vücudunda birikmektedir. Kritik seviyeyi aştığında canlıların ölümüne sebep olmaktadır. Sudaki 1 mikrogram/litre oranı somon balıkları için kritik seviyedir. Bu miktarın üzerine çıktığında zehirlenmeye sebep olmaktadır. Ülkemizde lastik tekerlekli araçların artışına paralel olarak artan karayolu ağı su kaynaklarının kirlenmesinde, dolayısıyla sucul canlılar vasıtasıyla gıda zincirine karışıp, karışmadığıyla ilgili araştırmalara ihtiyaç vardır.

Anahtar Kelimeler: 6-PPD-Quinon, Su canlıları, Karayolu, Lastik koruyucu

AN EVALUATION ON THE SUSTAINABILITY OF COTTON GROWING IN AZERBAIJAN

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ABSTRACT

According to the data of the State Statistical Committee of the Republic of Azerbaijan, while the cotton growing area in Azerbaijan was 42,829 hectares in 2011, it increased to 100,590 hectares in 2021. In the last ten years, the growing area has reached 136,413 hectares in 2017 and 132,512 hectares in 2018. In 2021, 40.1% of cotton growing areas were located in Mil-Mughan region, 27.7% in Karabakh region, 21.7% in Shirvan-Salyan region, 7.9% in Central Aran region and 2.6% in Ganja-Dashkasan region.

While 66,406 tons of cotton was produced in Azerbaijan in 2011, cotton production was 287,041 tons in 2021. In the last ten years, the highest cotton production was reached in 2020 with 336,792 tons. In 2021, 38.4% of cotton production was from Mil-Mughan region, 28.3% from Karabakh region, 23.5% from Shirvan-Salyan region, 7.2% from Central Aran region and 2.6% from Ganja-Dashkasan region. While the cotton yield in Azerbaijan was 1,550 kg/ha in 2011, it was 3,358 kg/ha in 2020 and 2,854 kg/ha in 2021.

According to the data of the International Cotton Advisory Committee (ICAC), Azerbaijan ranks 30th in the world in terms of cotton (lint) production. According to ICAC data, 68,000 tons of cotton (lint) were produced in Azerbaijan in 2021, 30,000 tons of this was reserved for domestic use and 38,000 tons were exported.

The aim of this study is to examine the developments in cotton production of Azerbaijan in the period of 2011-2021, to evaluate them in terms of ensuring sustainable production and to make some suggestions. The main material of the study consists of the data obtained from FAO, ICAC, The State Statistical Committee of the Republic of Azerbaijan, The Ministry of Agriculture of the Republic of Azerbaijan and the results obtained from previous researches on the subject. The collected statistical data were arranged in the form of tables and figures and interpreted by making percentage and index calculations.

Keywords: cotton growing, cotton marketing, cotton use, sustainable production.

ŞANLIURFA-SURUÇ OVASINDA BAZI TARLA BİTKİLERİNİN EKİM ALANLARI YÖNÜNDEN ANALİZİ, TÜRKİYE

ANALYSIS OF SOME FIELD CROPS IN ŞANLIURFA-SURUÇ PLAIN IN TERMS OF CULTIVATION AREAS IN TÜRKİYE

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ÖZET

Suruç Ovası, Şanlıurfa iline bağlı olup, Güneydoğu Anadolu Projesi (GAP) kapsamında yer almaktadır. Tarihte Yukarı Mezopotamya ve İpek yolu üzerinde yer alması nedeniyle birçok medeniyete ev sahipliği yapmış bir alandır. İklim açısından yarı kurak sayılabilecek bir özelliğe sahiptir. Tarımsal üretim her ülke için stratejik öneme sahip olup, en önemli girdilerinden birisi de sudur. Ovada, GAP kapsamında sulamalar 2015 yılından itibaren başlamıştır. Bu çalışmanın amacı Şanlıurfa-Suruç Ovasında, arpa, buğday, mercimek ve nohut bitkilerinin sulamanın başlamasıyla birlikte ekim alanlarında meydana gelen değişimlerinin analizinin yapılmasıdır. Çalışmada ikincil veriler kullanılmıştır. Sulama öncesi araştırmaya konu olan ürünlerin toplam ekim alanları 42.655 hektar iken, sulama sonrası 17.212 hektara gerilemiştir. Tarla bitkileri ekim alanları içinde arpa alanları azalma eğiliminde olup, regresyon katsayısı %24,79'dir. Buğday alanları artan ve azalan dalgalı bir yapı da olup, genelde azalma eğiliminde olup, regresyon katsayısı %35,54'dür. Mercimek ekim alanları azalan ve artan dalgalı bir görünümde olup, azalma eğiliminde olup, regresyon katsayısı %21,91'dir. Nohut ekim alanları azalma eğiliminde olup, regresyon katsayısı %34,09'dur. Bu ürünlerin ekim alanlarının daralmasının temel nedenleri, sulama nedeniyle, ovaya verilen su miktarına bağlı olarak pamuk ve mısır bitkilerinin ekim alanlarının artmasıdır. Diğer taraftan bu ürünler kendi içlerinde değerlendirildiklerinde sulama öncesi en yüksek ekim oranına sahip olan buğdayın, sulama sonrasında grup içinde ekim alanları artmıştır. Mercimek ekim alanları son dönemlerde artmıştır. Arpa ve nohut ekim alanları ise azalmıştır. Son dönemlerde küresel olarak çeşitli nedenlerden dolayı tarımsal üretim alanları azalmakta olup, bu da ülkeleri dışa bağımlı hale getirmektedir. Bundan dolayı tarımsal üretim alanlarının, ülke ihtiyaçlarına göre planlanması gerekmektedir. Burada belirleyici olan tatminkâr bir tarımsal gelirdir. Buda kamu tarımsal politikalar, desteklemeler ve teşvikler yoluyla sağlanabilecektir.

Anahtar Kelimeler: Şanlıurfa-Suruç Ovası, Tarımsal Üretim, Tarla Bitkileri, Ekim Alanları, Türkiye.

ABSTRACT

Suruç Plain is connected to Şanlıurfa province and is included in the Southeastern Anatolia Project (GAP). It is an area that has hosted many civilizations due to its location on the Upper Mesopotamia and Silk Road in history. It has a characteristic that can be considered semi-arid in terms of climate. Agricultural production has strategic importance for every country and one of its most important inputs is water. In the plain, irrigation started in 2015 within the scope of the GAP. The aim of this study is to analyze the changes in the cultivation areas of barley, wheat, lentil and chickpea plants in Şanlıurfa-Suruç Plain with the start of irrigation. Secondary data were used in the study. While the total cultivation area of the crops subject to the study was 42.655 hectares before irrigation, it decreased to 17.212 hectares after irrigation. Barley areas in field crops cultivation areas tend to decrease, and the regression coefficient is 24.79%. Wheat fields have an increasing and decreasing undulating structure, tending to decrease in general, and the regression coefficient is 35.54%. Lentil cultivation areas have a decreasing and increasing wavy appearance, tending to decrease, and the regression coefficient is 21.91%. Chickpea cultivation areas tend to decrease and the regression coefficient is 34.09%. The main reasons for the narrowing of the cultivation areas of these products are the increase in the cultivation areas of cotton and corn plants depending on the amount of water given to the plain due to irrigation. On the other hand, when these products are evaluated within themselves, the cultivation areas of wheat, which had the highest cultivating rate before irrigation, increased within the group after irrigation. Lentil cultivation areas have increased in recent years. Barley and chickpea cultivation areas have decreased. Recently, agricultural production areas have been decreasing due to various reasons globally, which makes countries dependent on foreign sources. Therefore, agricultural production areas should be planned according to the needs of the country. The decisive factor here is a satisfactory agricultural income. This will be achieved through public agricultural policies, supports and incentives.

Keywords: Şanlıurfa-Suruç Plain, Agricultural Production, Field Crops, Cultivating Areas, Turkey.

ŞANLIURFA-SURUÇ OVASINDA SULAMALARIN SEBZE VE MEYVE ALANLARI ÜZERİNE OLAN ETKİSİNİN GENEL DEĞERLENDİRMESİ, TÜRKİYE

GENERAL EVALUATION OF THE EFFECT OF IRRIGATIONS ON VEGETABLE AND FRUIT FIELDS IN SANLIURFA-SURUÇ PLAIN IN TÜRKİYE

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ÖZET

Şanlıurfa-Suruç Ovasında, Güneydoğu Anadolu Projesi (GAP) kapsamında tarımsal sulamalar, 2015 yılından itibaren 5.445 hektarlık bir alanda başlamış olup, günümüzde 56.295 hektarlık bir alan sulanmakta ve proje kapsamında 94.814 hektar tarım arazinin sulanması planlanmıştır. Tarımsal üretim, ulusların gıda güvencesinin sağlanmasının yanı sıra dengeli ve yeterli beslenme açısından da hayati bir öneme sahiptir. Bu çalışmanın amacı Şanlıurfa-Suruç Ovasında sulamaların sebze ve meyve ekim alanları üzerine olan etkisinin genel değerlendirmesinin yapılmasıdır. Yeterli seviyede sebze ve meyve tüketimi bireylerin sağlıklı gelişimleri açısından önemlidir. Çalışmada ikincil veriler kullanılmıştır. Sebzelerin büyük bir kısmı yetiştirilmesi için suya ihtiyaç duyar. Çalışma sahasında sebze grubu ağırlıklı olarak acur, banya, biber, domates, fasulye, hıyar, kabak, karpuz, kavun, patlıcan, patates, sarımsak ve soğan gibi ürünlerden oluşmaktadır. Sulama öncesi bunları ekim alanları 480 dekar iken, sulamayla birlikte ortalama 3.245 dekara yükselmiştir. Yıllara bağlı olarak artan ve azalan bir dalgalanma gösteren sebze üretimi, genel olarak artan bir eğilime sahip olup, regresyon katsayısı %36,99'dır. Meyve üretimi, antepfıstığı, zeytin ve badem gibi, kurak alanlarda yapılabilmekle birlikte, sulamanın verim üzerine olan olumlu etkisi nedeniyle, sulama alanlarında da ürün deseni içinde yer almaktadırlar. Çalışma sahasında antepfıstığı, armut, badem, ceviz, elma, erik, kayısı, nar ve zeytin ekim alanlarında yıllar itibariyle artış olduğu görülmektedir. Sulama öncesi 44.420 dekar olan meyve alanları, sulamayla birlikte ortalama 74.350 dekara yükselmiştir. Dönem içinde sürekli bir artan eğilim göstermekte olup, regresyon katsayısı %88,66'dır. Son dönemlerde küresel olarak çeşitli nedenlerden dolayı tarımsal üretim alanları azalmakta olup, bu da ülkeleri dengeli ve yeterli beslenme açısından dışa bağımlı hale getirmektedir. Bundan dolayı tarımsal üretim alanlarının, ülke ihtiyaçlarına göre planlanması gerekmektedir. Burada belirleyici olan tatminkâr bir tarımsal gelirdir. Buda kamu tarımsal politikalar, desteklemeler ve teşvikler yoluyla sağlanabilecektir. Tarımsal desteklemeler ağırlıklı olarak tarla bitkilerine verilmekte olup, sebze ve meyve üretimine verilen desteklemelerin artırılması gerekmektedir.

Anahtar Kelimeler: Suruç Ovası Sulamaları, Tarımsal Üretim, Sebze ve Meyve, Ekim Alanları, Şanlıurfa-Türkiye.

ABSTRACT

Agricultural irrigation in Şanlıurfa-Suruç Plain, within the scope of the Southeastern Anatolia Project (GAP), started on an area of 5,445 hectares since 2015, and an area of 56,295 hectares is irrigated today and it is planned to irrigate 94,814 hectares of agricultural land within the scope of the project. Agricultural production has a vital importance in terms of balanced and adequate nutrition as well as ensuring the food security of nations. The aim of this study is to make a general evaluation of the effect of irrigation on vegetable and fruit cultivation areas in Şanlıurfa-Suruç Plain. Adequate consumption of vegetables and fruits is important for the healthy development of individuals. Secondary data were used in the study. Most vegetables need water to grow. The vegetable group in the study area mainly consists of products such as gherkin, okra, pepper, tomato, bean, cucumber, zucchini, watermelon, melon, eggplant, potato, garlic and onion. While their cultivation area was 4,80 hectares before irrigation, it increased to 324,5 hectares with irrigation on yearly average. Vegetable production, which shows an increasing and decreasing fluctuation depending on the years, has an increasing trend in general and the regression coefficient is 36.99%. Although fruit production can be done in arid areas such as pistachios, olives and almonds, it is also included in the crop pattern in irrigation areas due to the positive effect of irrigation on yield. It is observed that there has been an increase in pistachio, pear, almond, walnut, apple, and plum, apricot, pomegranate and olive cultivation areas over the years in the study area. The fruit areas, which were 4.442 hectares before irrigation, increased to an average of 7.435 hectares with irrigation. It shows an increasing trend throughout the period and the regression coefficient is 88.66%. Recently, agricultural production areas have been decreasing due to various reasons globally, which makes countries dependent on foreign sources in terms of balanced and adequate nutrition. Therefore, agricultural production areas should be planned according to the needs of the country. The decisive factor here is a satisfactory agricultural income. This will be achieved through public agricultural policies, supports and incentives. Agricultural supports are mainly given to field crops, and the support given to vegetable and fruit production should be increased.

Keywords: Suruç Plain Irrigation, Agricultural Production, Vegetables and Fruits, Planting Areas, Şanlıurfa-Türkiye.

PROPAQUIZAFOP HERBICIDE CAUSES HIGH MORTALITY IN EARLY LIFE STAGE OF ZEBRAFISH (*DANIO RERIO*)

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ABSTRACT

Propaquizafop, a member of the aryloxyphenoxypropionate (APP) chemical family, is widely used in the control of weeds in the world, especially in Europe, to protect some plants with high commercial value. The toxic effects of the herbicide propaquizafop at early development in zebrafish are unknown. In our study, zebrafish embryos were semi-statically exposed to different concentrations (0.25, 0.5 and 1 ppm) of propaquizafop until 96 hours after fertilization. In the study, it was observed that propaquizafop had serious toxic effects when the survival rate, hatchability rate and morphological changes were examined in the early developmental stages. Significant reduction was detected in the treatment groups (0.25 ppm: 60.8%, 0.5 ppm: 43.3%, 1 ppm: 34.2%) when the survival rate was compared with the control (98.3%) at 96 hours. Similarly, when the hatchability rate was compared with the control (38.3%), it was observed that there was a delay in exit from the chorion in all propaquizafop application groups (0.25 ppm: 9.2%, 0.5 ppm:0.0%, 1 ppm:0.0%), especially at the 48th hour. Propaquizafop herbicide was determined to trigger morphological abnormalities in zebrafish embryos and larvae, and the total morphological abnormality rate was 63.4% in the 1 ppm application group. Our study showed that propaquizafop herbicide caused significant toxic effects in early developmental stages of zebrafish even in low application groups. Propaquizafop, which is still used in agricultural areas today, is likely to reach aquatic systems easily, so serious toxic effects should be considered and new regulations should be made in the use of propaquizafop.

Keywords: Zebrafish, Propaquizafop, Morphological abnormality, Survival rate

PROBİYOTİKLERİN AKUAKÜLTÜRDE ÖNEMİ

THE IMPORTANCE OF PROBIOTICS IN AQUACULTURE

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ÖZET

Akuakültürde en önemli basamak beslemedir. İyi yapılmış bir beslemede temel amaç, maliyeti düşük ve kaliteli yemlerle optimal verim sağlamaktır. Bu sebeple yetiştiricilikte kullanılacak türlerin kalitesini attırmak için farklı hammadde ve katkı maddelerinin kullanımının önemi her geçen gün artmaktadır. Bu katkı maddelerinin içerisinde son yıllarda popüleritesi oldukça artan probiyotikler karşımıza çıkmaktadır. Probiyotikler; enfeksiyona ve hastalıklara sebep olan bakterilerin aksine, sindirim sistemi ve deri başta olmak üzere çeşitli vücut sistemlerinin dengeli biçimde çalışmasına yardımcı olan yararlı bakteri ve mayalardır. Su ürünleri yetiştiriciliğinde ise probiyotikler özellikle üretimi arttırmak için sudaki patojenlerin engellenmesi ve su kalitesinin iyileştirilmesi için kullanılmaktadır. Bu çalışmada, genel anlamda probiyotikler ve akuakültürdeki probiyotik uygulamalarının önemi hakkında bilgilere yer verilmiştir.

Anahtar Kelimeler: Su ürünleri, probiyotik, hastalık, su kalitesi, besleme.

ABSTRACT

The most important step in aquaculture is feeding. The main purpose of a well-made feeding is to provide optimal yield with low cost and high quality feeds. For this reason, the importance of the use of different raw materials and additives is increasing day by day in order to increase the quality of the species to be used in aquaculture. Among these additives, we come across probiotics, whose popularity has increased considerably in recent years. Probiotics, unlike bacteria that cause infections and diseases, they are beneficial bacteria and yeasts that help various body systems, especially the digestive system and skin, work in a balanced way. In aquaculture, probiotics are used to prevent pathogens in water and improve water quality, especially to increase production. In this study, information about probiotics and the importance of probiotic applications in aquaculture are given.

Keywords: Aquaculture, probiotic, disease, water quality, feeding.

AKUAPONİK SİSTEMLER

AQUAPONIC SYSTEMS

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ÖZET

Dünya nüfusunun hızlı artışıyla sağlıklı gıda üretimi yerini endüstriyel üretime bırakmaya başlamıştır. Endüstriyel üretimde ise pestisitler, ilaçlar, koruyucu maddelerin kullanımı artmaktadır. Artan gıda talebine karşılık kullanılan gübre ve kimyasallar toprak, su, canlıları dolayısıyla tüm ekosistemi olumsuz yönde etkilemektedir. Gıda üretiminde sürdürülebilir alternatif üretim modelleri oluşturmak için yeni üretim modelleri araştırılmaktadır. Günümüzde hızla gelişmekte olan modellerin başında Akuaponik sistemler gelmektedir. Akuaponik, aquaculture ve hydroponics kelimelerinden türetilen kontrollü balık yetiştiriciliği ile topraksız tarımın bir arada yapılabildiği faaliyetlerdir. Akuaponikte kullanılan kapalı devre sistemlerle balık yetiştiriciliği ve tarım yapılmaktadır. Bitki yetiştiriciliğinde gerekli olan besin maddeleri, yetiştirilen balık türlerinin dışkılarından karşılanmaktadır. Akuaponikte kullanılan su bu yöntemle yeniden kullanılabilir. Bu çalışma, sürdürülebilir uygulamanın bir çeşidi olan akuaponik sistemlerin üretim modelleri ve avantajlarını içermektedir.

Anahtar Kelimeler: Sürdürülebilirlik, bitki, balık yetiştiriciliği, tarım.

ABSTRACT

With the rapid increase in the world population, healthy food production has started to leave its place to industrial production. In industrial production, the use of pesticides, drugs and preservatives is increasing. The fertilizers and chemicals used in response to the increasing food demand negatively affect the soil, water, living things, and thus the entire ecosystem. New production models are being researched to create sustainable alternative production models in food production. Aquaponic systems are at the forefront of rapidly developing models today. Aquaponics, aquaculture and hydroponics derived from the words controlled fish farming and soilless agriculture are activities that can be done together. Fish farming and agriculture are carried out with closed circuit systems used in aquaponics. The nutrients required in plant cultivation are met from the feces of the fish species grown. The water used in aquaponics can



be used repeatedly with this method. This study consists of production models, advantages and disadvantages of aquaponic systems, which is an example of sustainable production.

Keywords: Sustainability, plant, fish farming, agriculture.

MAXIMUM POWER POINT TRACKING BASED ON ESTIMATED POWER FOR PV ENERGY CONVERSION SYSTEM

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Abstract:

In this paper, a method for maximum power point tracking of a photovoltaic energy conversion system is presented. This method is based on using the difference between the power from the solar panel and an estimated power value to control the DC-DC converter of the photovoltaic system. The difference is continuously compared with a preset error permitted value. If the power difference is more than the error, the estimated power is multiplied by a factor and the operation is repeated until the difference is less or equal to the threshold error. The difference in power will be used to trigger a DC-DC boost converter in order to raise the voltage to where the maximum power point is achieved. The proposed method was experimentally verified through a PV energy conversion system driven by the OPAL-RT real time controller. The method was tested on varying radiation conditions and load requirements, and the Photovoltaic Panel was operated at its maximum power in different conditions of irradiation.

Keywords: Control system, power error, solar panel, MPPT.

EFFECT OF COLLECTOR ASPECT RATIO ON THE THERMAL PERFORMANCE OF WAVY FINNED ABSORBER SOLAR AIR HEATER

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Abstract:

A theoretical investigation on the effect of collector aspect ratio on the thermal performance of wavy finned absorber solar air heaters has been performed. For the constant collector area, the various performance parameters have been calculated for plane and wavy finned solar air heaters. It has been found that the performance of wavy finned solar air heater improved with the increase in the collector aspect ratio. The performance of wavy finned solar air heater has been found 30 percent higher than those of plane solar air heater. The obtained results for wavy fin solar air heaters are compared with the available experimental data of most common type solar air heaters.

Keywords: Wavy fin, aspect ratio, solar air heater, thermal efficiency, collector efficiency factor, temperature rise.

SIMILITUDE FOR THERMAL SCALE-UP OF A MULTIPHASE THERMOLYSIS REACTOR IN THE CU-CL CYCLE OF A HYDROGEN PRODUCTION

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Abstract:

The thermochemical copper-chlorine (Cu-Cl) cycle is considered as a sustainable and efficient technology for a hydrogen production, when linked with clean-energy systems such as nuclear reactors or solar thermal plants. In the Cu-Cl cycle, water is decomposed thermally into hydrogen and oxygen through a series of intermediate reactions. This paper investigates the thermal scale up analysis of the three phase oxygen production reactor in the Cu-Cl cycle, where the reaction is endothermic and the temperature is about 530 °C. The paper focuses on examining the size and number of oxygen reactors required to provide enough heat input for different rates of hydrogen production. The type of the multiphase reactor used in this paper is the continuous stirred tank reactor (CSTR) that is heated by a half pipe jacket. The thermal resistance of each section in the jacketed reactor system is studied to examine its effect on the heat balance of the reactor. It is found that the dominant contribution to the system thermal resistance is from the reactor wall. In the analysis, the Cu-Cl cycle is assumed to be driven by a nuclear reactor where two types of nuclear reactors are examined as the heat source to the oxygen reactor. These types are the CANDU Super Critical Water Reactor (CANDU-SCWR) and High Temperature Gas Reactor (HTGR). It is concluded that a better heat transfer rate has to be provided for CANDU-SCWR by 3-4 times than HTGR. The effect of the reactor aspect ratio is also examined in this paper and is found that increasing the aspect ratio decreases the number of reactors and the rate of decrease in the number of reactors decreases by increasing the aspect ratio. Finally, a comparison between the results of heat balance and existing results of mass balance is performed and is found that the size of the oxygen reactor is dominated by the heat balance rather than the material balance.

Keywords: Clean energy, Cu-Cl cycle, heat transfer, sustainable energy.

ENHANCEMENT OF THERMAL PERFORMANCE OF LATENT HEAT SOLAR STORAGE SYSTEM

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Abstract:

Solar energy is available abundantly in the world, but it is not continuous and its intensity also varies with time. Due to above reason the acceptability and reliability of solar based thermal system is lower than conventional systems. A properly designed heat storage system increases the reliability of solar thermal systems by bridging the gap between the energy demand and availability. In the present work, two dimensional numerical simulation of the melting of heat storage material is presented in the horizontal annulus of double pipe latent heat storage system. Longitudinal fins were used as a thermal conductivity enhancement. Paraffin wax was used as a heat-storage or phase change material (PCM). Constant wall temperature is applied to heat transfer tube. Presented two-dimensional numerical analysis shows the movement of melting front in the finned cylindrical annulus for analyzing the thermal behavior of the system during melting.

Keywords: Latent heat, numerical study, phase change material, solar energy.

TECHNICAL ANALYSIS OF COMBINED SOLAR WATER HEATING SYSTEMS FOR COLD CLIMATE REGIONS

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Abstract:

Renewable energy resources, which can supplement space and water heating for residential buildings, can have a noticeable impact on natural gas consumption and air pollution. This study considers a technical analysis of a combined solar water heating system with evacuated tube solar collectors for different solar coverage, ranging from 20% to 100% of the total roof area of a typical residential building located in Edmonton, Alberta, Canada. The alternative heating systems were conventional (non-condensing) and condensing tankless water heaters and condensing boilers that were coupled to solar water heating systems. The performance of the alternative heating systems was compared to a traditional heating system, consisting of a conventional boiler, applied to houses of various gross floor areas. A comparison among the annual natural gas consumption, carbon dioxide (CO₂) mitigation, and emissions for the various house sizes indicated that the combined solar heating system can reduce the natural gas consumption and CO₂ emissions, and increase CO₂ mitigation for all the systems that were studied. The results suggest that solar water heating systems are potentially beneficial for residential heating system applications in terms of energy savings and CO₂ mitigation.

Keywords: CO₂ emissions, CO₂ mitigation, natural gas consumption, solar water heating system, tankless water heater.

AN EXPERIMENTAL STUDY ON EVACUATED TUBE SOLAR COLLECTOR FOR STEAM GENERATION IN INDIA

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Abstract:

An evacuated tube solar collector is experimentally studied for steam generation. When the solar radiation falls on evacuated tubes, this energy is absorbed by the tubes and transferred to water with natural conduction and convection. A natural circulation of water occurs due to the inclination in tubes and header. In this experimental study, the efficiency of collector has been calculated. The result shows that the collector attains the maximum efficiency of 46.26% during 14:00 to 15:00h. Steam has been generated for two hours from 13:30 to 15:30 h on a winter day. Maximum solar intensity and maximum ambient temperatures are 795W/m^2 and 19°C respectively on this day.

Keywords: Evacuated tube, solar collector, hot water, steam generation.

COUPLING HEAT AND MASS TRANSFER FOR HYDROGEN-ASSISTED SELF-IGNITION BEHAVIORS OF PROPANE-AIR MIXTURES IN CATALYTIC MICRO-CHANNELS

Junjie Chen, Deguang Xu

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Abstract:

Transient simulation of the hydrogen-assisted self-ignition of propane-air mixtures were carried out in platinum-coated micro-channels from ambient cold-start conditions, using a two-dimensional model with reduced-order reaction schemes, heat conduction in the solid walls, convection and surface radiation heat transfer. The self-ignition behavior of hydrogen-propane mixed fuel is analyzed and compared with the heated feed case. Simulations indicate that hydrogen can successfully cause self-ignition of propane-air mixtures in catalytic micro-channels with a 0.2 mm gap size, eliminating the need for startup devices. The minimum hydrogen composition for propane self-ignition is found to be in the range of 0.8-2.8% (on a molar basis), and increases with increasing wall thermal conductivity, and decreasing inlet velocity or propane composition. Higher propane-air ratio results in earlier ignition. The ignition characteristics of hydrogen-assisted propane qualitatively resemble the selectively inlet feed preheating mode. Transient response of the mixed hydrogen- propane fuel reveals sequential ignition of propane followed by hydrogen. Front-end propane ignition is observed in all cases. Low wall thermal conductivities cause earlier ignition of the mixed hydrogen-propane fuel, subsequently resulting in low exit temperatures. The transient-state behavior of this micro-scale system is described, and the startup time and minimization of hydrogen usage are discussed.

Keywords: Micro-combustion, Self-ignition, Hydrogen addition, Heat transfer, Catalytic combustion, Transient simulation.

TECHNO-ECONOMIC PROSPECTS OF HIGH WIND ENERGY SHARE IN REMOTE VS. INTERCONNECTED ISLAND GRIDS

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Abstract:

On the basis of comparative analysis of alternative “development scenarios” for electricity generation, the main objective of the present study is to investigate the techno-economic viability of high wind energy (WE) use at the local (island) level. An integrated theoretical model is developed based on first principles assuming two main possible scenarios for covering future electrification needs of a medium-sized Greek island, i.e. Lesbos. The first scenario (S1), assumes that the island will keep using oil products as the main source for electricity generation. The second scenario (S2) involves the interconnection of the island with the mainland grid to satisfy part of the electricity demand, while remarkable WE penetration is also achieved. The economic feasibility of the above solutions is investigated in terms of determining their Levelized Cost of Energy (LCOE) for the time-period 2020-2045, including also a sensitivity analysis on the worst/reference/best Cases. According to the results obtained, interconnection of Lesbos Island with the mainland grid (S2) presents considerable economic interest in comparison to autonomous development (S1) with WE having a prominent role to this effect.

Keywords: Electricity generation cost, levelized cost of energy, mainland, wind energy surplus.

RENEWABLE ENERGY TRENDS ANALYSIS: A PATENTS STUDY

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Abstract:

This article explains the elements and considerations taken into account when implementing and applying patent evaluation and scientometric study in the identifications of technology trends, and the tools that led to the implementation of a software application for patent revision. Univariate analysis helped recognize the technological leaders in the field of energy, and steered the way for a multivariate analysis of this sample, which allowed for a graphical description of the techniques of mature technologies, as well as the detection of emerging technologies. This article ends with a validation of the methodology as applied to the case of fuel cells.

Keywords: Energy, technology mapping, patents.

A COMPARISON OF SVM-BASED CRITERIA IN EVOLUTIONARY METHOD FOR GENE SELECTION AND CLASSIFICATION OF MICROARRAY DATA

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Abstract:

An evolutionary method whose selection and recombination operations are based on generalization error-bounds of support vector machine (SVM) can select a subset of potentially informative genes for SVM classifier very efficiently [7]. In this paper, we will use the derivative of error-bound (first-order criteria) to select and recombine gene features in the evolutionary process, and compare the performance of the derivative of error-bound with the error-bound itself (zero-order) in the evolutionary process. We also investigate several error-bounds and their derivatives to compare the performance, and find the best criteria for gene selection and classification. We use 7 cancer-related human gene expression datasets to evaluate the performance of the zero-order and first-order criteria of error-bounds. Though both criteria have the same strategy in theoretically, experimental results demonstrate the best criterion for microarray gene expression data.

Keywords: support vector machine, generalization error-bound, feature selection, evolutionary algorithm, microarray data

BIOEFFICACY OF SOME OIL-MIXED PLANT DERIVATIVES AGAINST AFRICAN MUD CATFISH (*CLARIAS GARIEPINUS*) BEETLES, *DERMESTES MACULATUS* AND *NECROBIA RUFIPES*

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Abstract:

The efficacy of the separate mixing of four tropical spicy and medicinal plant products: *Dennettia tripetala* Baker (pepper fruit), *Eugenia aromatica* Hook (clove), *Piper guineense* (Schum and Thonn) (black pepper) and *Monodora myristica* (Dunal) (African nut-meg) with a household vegetable oil was evaluated under tropical storage conditions for the control and reproductive performance of *Dermestes maculatus* (De Geer) (hide beetle) and *Necroba rufipes* (De Geer) (copra beetle) on African catfish, *Clarias gariepinus* (Burchell). Each of the plant materials was pulverized into powder and applied as a mix of 1ml of oil and plant powder at 2.5, 5.0, 7.5 and 10.0g per 100g of dried fish, and allowed to dry for 6h. Each of the four oil-mixed powder treatments evoked significant ($P < 0.05$) mortalities of the two insects compared with the control (oil only) at 1, 3 and 7 days post treatment. The oil-powder mixture dosages did not prevent insect egg hatchability but while the emergent larvae on the treated samples died, the emergent larvae in the control survived into adults. The application of oil-mixed powders effectively suppressed the emergence of the larvae of the beetles. Similarly, each of the oil-powder mixtures significantly reduced weight loss in smoked fish that were exposed to *D. maculatus* and *N. rufipes* when compared to the control ($P < 0.05$). The results of this study suggest that the plant powders rather than the domestic oil demonstrated protective ability against the fish beetles and confirm the efficacy of the plant products as pest control agents.

Keywords: Catfish, Fish beetles, Fish preservation, Oil-powder mix, Plant products.

THE ROLE OF IMMUNOGENIC ADHESIN VIBRIO ALGINOLYTICUS 49 K DA TO MOLECULE EXPRESSION OF MAJOR HISTOCOMPATIBILITY COMPLEX ON RECEPTORS OF HUMPBACK GROUPE CRONILEPTES ALTIVELIS

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Abstract:

The purpose of research was to know the role of immunogenic protein of 49 kDa from *V.alginolyticus* which capable to initiate molecule expression of MHC Class II in receptor of *Cromileptes altivelis*. The method used was in vivo experimental research through testing of immunogenic protein 49 kDa from *V.alginolyticus* at *Cromileptes altivelis* (size of 250 - 300 grams) using 3 times booster by injecting an immunogenic protein in a intramuscular manner. Response of expressed MHC molecule was shown using immunocytochemistry method and SEM. Results indicated that adhesin *V.alginolyticus* 49 kDa which have immunogenic character could trigger expression of MHC class II on receptor of grouper and has been proven by staining using immunocytochemistry and SEM with labeling using antibody anti MHC (anti mouse). This visible expression based on binding between epitopes antigen and antibody anti MHC in the receptor. Using immunocytochemistry, intracellular response of MHC to in vivo induction of immunogenic adhesin from *V.alginolyticus* was shown.

Keywords: *C.altivelis*, immunogenic, MHC, *V.alginolyticus*.

IDENTIFICATION CHARACTERIZATION AND PRODUCTION OF PHYTASE FROM ENDOPHYTIC FUNGI

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Abstract:

Phytases are acid phosphatase enzymes, which efficiently cleave phosphate moieties from phytic acid, thereby generating myo-inositol and inorganic phosphate. Thirty four isolates of endophytic fungi to produce of phytases were isolated from leaf, stem and root fragments of soybean. Screening of 34 isolates of endophytic fungi identified the phytases produced by *Rhizoctonia* sp. and *Fusarium verticillioides* . The phytase production were the best induced by phytic acid and rice bran compared the others inducer in submerged fermentation medium used. The phytase produced by both *Rhizoctonia* sp. and *F. verticillioides* have pH optimum at 4.0 and 5.0 respectively. The characterization of phytase from *Fusarium verticillioides* showed that temperature optimum was 50°C and stability until 60°C, the pH optimum 5.0 and pH stability was 2.5 – 6.0, and substrate specificity were rice bran>soybean meal>corn> coconut cake, respectively.

Keywords: endophytic fungus, phytase, soybean, *Rhizoctonia* sp., *Fusarium verticillioides*,

DIRECT AND INDIRECT SOMATIC EMBRYOGENESIS FROM PETIOLE AND LEAF EXPLANTS OF PURPLE FAN FLOWER (SCAEVOLA AEMULA R. BR. CV. 'PURPLE FANFARE')

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Open University of Sri Lanka,

Abstract:

Direct and indirect somatic embryogenesis (SE) from petiole and leaf explants of *Scaevola aemula* R. Br. cv. 'Purple Fanfare' was achieved. High frequency of somatic embryos was obtained directly from petiole and leaf explants using an inductive plant growth regulator signal thidiazuron (TDZ). Petiole explants were more responsive to SE than leaves. Plants derived from somatic embryos of petiole explants germinated more readily into plants. SE occurred more efficiently in half-strength Murashige and Skoog (MS) medium than in full-strength MS medium. Non-embryogenic callus induced by 2, 4-dichlorophenoxyacetic acid was used to investigate the feasibility of obtaining SE with TDZ as a secondary inductive plant growth regulator (PGR) signal. Non-embryogenic callus of *S. aemula* was able to convert into an "embryogenic competent mode" with PGR signal. Protocol developed for induction of direct and indirect somatic embryogenesis in *S. aemula* can improve the large scale propagation system of the plant in future.

Keywords: Petiole and leaf explants, *Scaevola aemula*, Somatic embryogenesis

STRUCTURAL BASIS OF RESISTANCE OF HELICOBACTER PYLORI DnaK TO ANTIMICROBIAL PEPTIDE PYRRHOCORICIN

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Abstract:

Bacterial molecular chaperone DnaK plays an essential role in protein folding, stress response and transmembrane targeting of proteins. DnaKs from many bacterial species, including *Escherichia coli*, *Salmonella typhimurium* and *Haemophilus influenzae* are the molecular targets for the insect-derived antimicrobial peptide pyrrohocoricin. Pyrrohocoricin-like peptides bind in the substrate recognition tunnel. Despite the high degree of crossspecies sequence conservation in the substrate-binding tunnel, some bacteria are not sensitive to pyrrohocoricin. This work addresses the molecular mechanism of resistance of *Helicobacter pylori* DnaK to pyrrohocoricin. Homology modelling, structural and sequence analysis identify a single aminoacid substitution at the interface between the lid and the β -sandwich subdomains of the DnaK substrate-binding domain as the major determinant for its resistance.

Keywords: *Helicobacter pylori*, molecular chaperone DnaK, pyrrohocoricin, structural biology.

COMMUNITIES OF AMMONIA-OXIDIZING ARCHAEA AND BACTERIA IN ENRICHED NITRIFYING ACTIVATED SLUDGE

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Abstract:

In this study, communities of ammonia-oxidizing archaea (AOA) and ammonia-oxidizing bacteria (AOB) in nitrifying activated sludge (NAS) prepared by enriching sludge from a municipal wastewater treatment plant in three continuous-flow reactors receiving an inorganic medium containing different ammonium concentrations of 2, 10, and 30 mM NH_4^+-N (NAS2, NAS10, and NAS30, respectively) were investigated using molecular analysis. Results suggested that almost all AOA clones from NAS2, NAS10, and NAS30 fell into the same AOA cluster and AOA communities in NAS2 and NAS10 were more diverse than those of NAS30. In contrast to AOA, AOB communities obviously shifted from the seed sludge to enriched NASs and in each enriched NAS, communities of AOB varied particularly. The seed sludge contained members of *N. communis* cluster and *N. oligotropha* cluster. After it was enriched under various ammonium loads, members of *N. communis* cluster disappeared from all enriched NASs. AOB with high affinity to ammonia presented in NAS 2, AOB with low affinity to ammonia presented in NAS 30, and both types of AOB survived in NAS 10. These demonstrated that ammonium load significantly influenced AOB communities, but not AOA communities in enriched NASs.

Keywords: ammonia-oxidizing bacteria, ammonia-oxidizing archaea, nitrifying activated sludge.

HUMAN ELASTIN-DERIVED BIOMIMETIC COATING SURFACE TO SUPPORT CELL GROWTH

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Abstract:

A new sythetic gene coding for a Human Elastin-Like Polypeptide was constructed and expressed. The recombinant product was tested as coating agent to realize a surface suitable for cell growth. Coatings showed peculiar features and different human cell lines were seeded and cultured. All cell lines tested showed to adhere and proliferate on this substrate that has been shown also to exert a specific effect on cells, depending on cell type.

Keywords: elastin, recombinant protein, coating, cell adhesion.

A REPORT ON OCCURRENCE AND PARASITE-HOST OF *LIGULA INTESTINALIS* IN SATTARKHAN LAKE (EAST AZERBAIJAN-IRAN)

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Abstract:

Ligula intestinalis is a three-host life-cycle Pseudophyllidean Cestode which in its plerocercoid stage infests a range of fresh water species. The objective of the present study was the worm occurrence within planctonic copepods, fishes and piscivorous birds and examine of parasite-hosts samples in the Lake of Sattarkhan Dam (near the city of Ahar, East Azerbaijan, Iran). Fish sample were collected with fyke and gill nets and the abdominal cavity was examined for the presence of ligula. Zooplanktons were captured using a planktonic net and occurrence of parasitic larval form in the body cavity was determined. Piscivorous birds were selected by telescope, they hunted and dissected for presence of parasite eggs in their gut. Results indicated that prevalence of infection was 16% for cyclopid copepoda and majority of infected cyclopid were female Cyclops. Investigation of 310 fishes specimens were indicated to infection of five species of cyprinid fishes. In addition, results indicated to manipulation of six species of migratory aquatic and semi aquatic birds by ligula. Obtained results are in agreement by previous studies. Its definite in this study that all of fishes in Sattarkhan Lake capable to infection, its important for health because they capture by native people and it is documented that ligula can be introduce as a zoonose. It's seemed that to prevent from disperses of parasite and restricted of infection, biological elimination can be effective and it's necessary to inform native people about sanitation.

Keywords: *Ligula intestinalis*, parasite-host, Sattarkhan Lake, Iran.

VOCAL COMMUNICATION IN SOOTY-HEADED BULBUL; PYCNONOTUS AURIGASTER

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Abstract:

Studies of vocal communication in Sooty-headed Bulbul were carried out from January to December 2011. Vocal recordings and behavioral observations were made in their natural habitats at some localities of Lampang, Thailand. After editing, cuts of high quality recordings were analyzed with the help of Avisoft- SASLab Pro (version 4.40) software. More than one thousand element repertoires in five groups were found within two vocal structures. The two structures were short sounds with single element and phrases composed of elements, the frequency ranged from 1-10 kHz. Most phrases were composed of 2 to 5 elements that were often dissimilar in structure, however, these phrases were not as complex as song phrases. The elements and phrases were combined to form many patterns. The species used ten types of calls; i.e. alert, alarm, aggressive, begging, contact, courtship, distress, exciting, flying and invitation. Alert and contact calls were used more frequently than other calls. Aggressive, alarm and distress calls could be used for interspecific communication among some other bird species in the same habitats.

Keywords: Vocal communication, Call, Bird, Sooty-headed Bulbul

LABORATORY PRACTICE IN ONE HEALTH

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The variability in land use and animal/vector populations due to the rapid increase in world population has increased the use of all natural resources, with the added impact of the climate crisis. With this increase, complex and uncontrollable risks have emerged in the globalizing world that disrupt the healthy functioning of the ecosystem and threaten human, animal, and environmental health. In combating these risks, OneHealth is an approach that addresses human health as well as species protection, animal health, and environmental health as a whole. OneHealth approach has become a policy priority in designing disease prevention, control strategies and ensuring preparedness against possible future pandemics.

Interdisciplinary cooperation is at the heart of the OneHealth approach. This approach requires a system of joint effort, thinking, and cooperation on a local, national, regional, and global scale. An ideal public health is possible only if the order of all living things with their environment is preserved and continues to function systematically. Identifying chemical and biological agents that threaten humans, animals, and the environment, their toxic and pathogenic effects, and addressing the potential crises they may cause require a multidisciplinary approach. Accordingly, it becomes important for interdisciplinary fields and professional groups to work together for OneHealth. Interest in laboratory work as part of the OneHealth system has increased in recent years. Laboratory practices, including the type and quality of qualitative and quantitative analyses performed in laboratories, state-of-the-art analyzers, experienced and qualified personnel, constitute an important element of the OneHealth approach.

This paper will focus on the work of OneHealth laboratories established in response the regional and global health crises in recent years as well as the importance of interdisciplinary cooperation. In addition, it will present the contributions of laboratories, devices, methods, and applications to this approach with technological developments and suggestions for the functioning of laboratory studies.

Key Words: One Health, Laboratory practice, Multidisciplinary approach

TEK SAĞLIKTA LABORATUVAR UYGULAMALARI

Dünya nüfusunun hızlı artışına bağlı olarak arazi kullanımındaki ve hayvan/vektör popülasyonlarındaki değişkenlik, iklim krizinin de etkisiyle tüm doğal kaynakların kullanımını arttırmıştır. Bu artış ile birlikte globalleşen dünyada ekosistemin sağlıklı işleyişini bozan, insan, hayvan ve çevre sağlığını tehdit eden, karmaşık ve kontrol edilemez riskler oluşmuştur. Bu risklerle mücadelede Tek Sağlık; insan sağlığıyla birlikte türlerin korunması, hayvan ve çevre sağlığını bir bütün olarak ele alan bir yaklaşımdır. Tek Sağlık Yaklaşımı; hastalık önleme ve kontrol stratejilerinin tasarlanmasında, gelecekteki olası pandemilere karşı hazırlığın sağlanmasında bir politika önceliği haline gelmiştir.

Disiplinler arası işbirliği, Tek Sağlık yaklaşımının merkezinde yer alır. Bu yaklaşım yerel, ulusal, bölgesel ve küresel ölçekte ortak çaba, düşünce ve işbirliği sistemini gerektirir. İdeal bir toplum sağlığı, tüm canlıların çevreleriyle olan düzenin korunmasına ve sistematik olarak işlemeye devam etmesi ile mümkün olmaktadır. İnsan, hayvan ve çevreyi tehdit eden kimyasal ve biyolojik ajanların belirlenmesi, bunların toksik, patojenik etkileri ve sebep olacağı olası krizlere yönelik çalışmalar multidisipliner bir yaklaşımı gerektirir. Buna bağlı olarak Tek Sağlık için disiplinler arası alanlar ve meslek gruplarının bir arada çalışmasının önemi ortaya çıkmaktadır. Tek sağlık sisteminin bir parçası olan laboratuvar çalışmalarına karşı ilgi son yıllarda artmıştır. Laboratuvarlarda uygulanan kalitatif ve kantitatif analizlerin çeşidi ve niteliğini, kullanılan son teknoloji analiz cihazları, tecrübeli ve kalifiye personeli kapsayan laboratuvar uygulamaları Tek Sağlık yaklaşımının önemli bir unsurunu oluşturmaktadır.

Bu bildiriye, son yıllarda yaşanan bölgesel ve küresel sağlık krizlerine karşı kurulmuş olan Tek sağlık laboratuvarlarının çalışmalarına ve disiplinler arası işbirliğinin önemine dikkat çekilecektir. Bunun yanı sıra teknolojik gelişmelerle birlikte laboratuvar, cihaz, metot ve uygulamalarının bu yaklaşıma sağlayacağı katkılar ile laboratuvar çalışmalarının işleyişine yönelik öneriler sunulacaktır.

Anahtar Kelimeler: Tek Sağlık, Laboratuvar uygulamaları, Multidisipliner yaklaşım

**THE EFFECTS OF DIFFERENT SEED RATES ON THE FORAGE YIELD AND
SOME YIELD PARAMETERS OF BUCKWHEAT (*Fagopyrum esculentum* Moench)
IN THE MEDITERRANEAN CLIMATE**

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ABSTRACT

Buckwheat (*Fagopyrum esculentum* Moench) contains high levels of protein, dietary fiber, vitamins, minerals, essential polyunsaturated fatty acids, and antioxidants such as rutin and quercetin. Due to its high nutritional quality, buckwheat is an important food raw material with significant potential for the functional food industry. It is also grown as a forage crop, cover crop, green manure and soil conditioner, bee forage plant, and medicinal plant. This research aimed to determine the effects of different seed rates (6-8-10 kg da⁻¹) on green forage yield and some yield parameters of buckwheat (*Fagopyrum esculentum* Moench), which has many different uses besides human and animal nutrition. The trial was carried out in 2016 and 2017 at the experimental areas of the Ödemiş Vocational School, Ege University under Mediterranean climate conditions, using a randomized complete block design with four replications. The plant height (cm), stem diameter (cm), green forage yield (kg da⁻¹), dry matter content (%) and dry matter yield (kg da⁻¹) traits were investigated in this study. In summary, the following mean values were obtained for each parameter; plant height 97.8-101.1 cm, stem diameter 0.54-0.61 cm, green forage yield 723-831 kg da⁻¹, dry matter rate 19.26-21.05% and dry matter yield 152.2-160.1 kg da⁻¹. Based on the study's results, it is suggested that a seeding rate of 10 kg da⁻¹ is preferred for buckwheat cultivation in Ödemiş and similar ecological conditions, considering the green forage yield and some yield parameters.

Keywords: Buckwheat, seeding rate, forage yield, animal nutrition

AKDENİZ İKLİMİNDE FARKLI TOHURLUK MİKTARLARININ KARABUĞDAY'IN (*Fagopyrum esculentum Moench*) OT VERİMİ VE BAZI VERİM ÖZELLİKLERİNE ETKİLERİ

ÖZET

Karabuğday (*Fagopyrum esculentum Moench*); bileşiminde yüksek düzeyde protein, diyet lif, vitamin, mineral madde, temel çoklu doymamış yağ asitleri, rutin ve quercetin gibi antioksidanları içerir. Besin kalitesinin yüksek olması nedeniyle önemli bir gıda ham bileşeni olan karabuğday, fonksiyonel gıda endüstrisi için çok önemli bir potansiyele sahiptir. Ayrıca yem bitkisi, örtü bitkisi, yeşil gübre ve toprak düzenleyicisi, bal özü bitkisi ve tıbbi bitki olarak da yetiştirilmektedir. Bu araştırma, insan ve hayvan beslenmesi yanında birçok farklı kullanım alanına sahip karabuğday (*Fagopyrum esculentum Moench*)'ın farklı tohumluk miktarlarının (6-8-10 kg/da) yeşil ot verimi ve bazı verim özelliklerine etkilerini belirlemek amacıyla gerçekleştirilmiştir. Deneme, Akdeniz iklim koşullarında Ege Üniversitesi Ödemiş Meslek Yüksekokulu'na ait deneme alanlarında 2016 ve 2017 yıllarında tesadüf blokları deneme desenine göre dört tekerrürlü olarak yürütülmüştür. Çalışmada, bitki boyu (cm), sap çapı (cm), yeşil ot verimi (kg/da), kuru madde oranı (%) ve kuru madde verimi (kg/da) özellikleri incelenmiştir. Çalışmadan elde edilen ortalama sonuçlar özetlendiğinde bitki boyu 97.8-101.1 cm, sap çapı 0.54-0.61 cm, yeşil ot verimi 723-831 kg/da, kuru madde oranı %19.26-21.05 ve kuru madde verimi 152.2-160.1 kg/da arasında değişim göstermiştir. Araştırma sonuçlarına göre, yeşil ot verimi ve bazı verim özellikleri dikkate alınarak, Ödemiş ve benzeri ekolojik koşullarda karabuğday yetiştiriciliğinde 10 kg/da tohumluk miktarının tercih edilmesi önerilmektedir.

Anahtar Kelimeler: Karabuğday, tohumluk miktarı, yeşil ot verimi, hayvan besleme

VAN İLİ BÜYÜKBAŞ HAYVANCILIĞININ MEVCUT DURUMU

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ÖZET

Bu çalışma, Van ilinin Büyükbaş hayvancılığının mevcut durumunu incelemek olup , Van ili açısından önemini belirlemektir. Van ili Türkiye'nin Doğu Anadolu Bölgesinde yer alır. Doğu Anadolu Bölgesi Türkiye'nin 7 (yedi) coğrafi bölgesinden biridir. Bölgenin yüzölçümü 164.000 kmkare.dir. Ülke topraklarının %21'ni oluşturmaktadır. Bölge 14 (on dört) ilden oluşmaktadır ve bölgenin geçim kaynağı tarım ve hayvancılıktır. Türkiye hayvancılığında et ve süt üretiminin büyük kısmı büyükbaş hayvancılığından elde edilmektedir.2022 yılı Türkiye büyükbaş hayvan sayısı 17.024.000 baş' dır. 2021 yılında Sığır eti üretimi 1 .460.000 ton elde edilmiştir. Sığır eti tüketimi ise 13.12 kg olmuştur.2006 yılı Van ili büyükbaş sayısı 180.460 baş olup , 2021 yılında Van ili büyükbaş sayısı 165.501başa düşmüştür.2022 yılında ise 197.483 baş'a yükselmiştir. Türkiye büyükbaş hayvan varlığının %1.4'ü Van ilindedir. Mevcut sığırlar yıllara göre incelendiğinde kültür ve kültür melezi sığır sayısı artarken, yerli sığır sayısının azaldığı görülmektedir. 2018 yılı hayvancılık verilerine göre ,Doğu Anadolu bölgesindeki büyükbaş hayvan sayısının %23.1 'nin Erzurum, %13.5'nin Kars ve %5.32 ise Van ilinde bulunmaktadır. Van ili ,Doğu Anadolu Bölgesinin Yukarı Murat- Van Bölümündeki Van Gölü kapalı havzası içinde yer alır. Kuzeyinde Ağrı, batısında Bitlis ile Van Gölü, güneyinde Siirt ve Hakkari ve Doğusunda İran'la komşudur. 37-43 kuzey enlemleri , 42-40 doğu boylamları üzerinde yer almaktadır. Van ilinin yüzölçümü 19.069 km. olup, ülke topraklarının %2.5'ini oluşturur. Van, Türkiye'nin yüz ölçümü bakımından 6. Büyük ilidir. Van ilinin 13 ilçesi ve 691 mahallesi vardır. Nüfusu ise 1.133.76 'dır. Ülke genelinde 1.250.847 adet kayıtlı büyükbaş hayvancılık işletmesi vardır. Sonuç olarak Van hayvancılık potansiyeli bakımından ülke tarımında önemli bir konuma sahiptir.

Anahtar Kelimeler: Van, Büyükbaş, Yetiştirme, Doğu Anadolu

THE CURRENT SITUATION OF CATTLE BREEDING IN VAN PROVINCE

ABSTRACT

This study is to examine the current situation of cattle breeding in Van province and to determine its importance for Van province. Van province is located in the Eastern Anatolia Region of Turkey. Eastern Anatolia Region is one of the 7 (seven) geographical regions of Turkey. The area of the region is 164,000 square kilometers. It constitutes 21% of the country's land. The region consists of 14 (fourteen) provinces and the livelihood of the region is agriculture and animal husbandry. Most of the meat and milk production in Turkey's livestock is obtained from cattle breeding. The number of cattle in Turkey in 2022 is 17,024,000. In 2021, beef production was 1,460,000 tons. Beef consumption was 13.12 kg. The number of cattle in Van province was 180,460 in 2020 and decreased to 165,501 in 2021. It increased to 197,483 in 2022. 2006, and the number of cattle in Van province. 1.4% of Turkey's cattle stock is in Van. When the existing cattle are examined by years, it is seen that the number of culture and crossbred cattle increases, while the number of domestic cattle decreases. According to 2018 livestock data, 23.1% of the cattle in the Eastern Anatolia region are in Erzurum, 13.5% in Kars and 7.56% in Van. The province of Van is located within the closed basin of Lake Van in the Upper Murat-Van Section of the Eastern Anatolia Region. It is neighbors with Ağrı in the north, Bitlis and Lake Van in the west, Siirt and Hakkari in the south and Iran in the east. It is located on 37-43 north latitudes and 42-40 east longitudes. The surface area of Van is 19,069 km. and constitutes 2.5% of the country's land. Van is Turkey's 6th largest province in terms of surface area. There are 13 districts and 691 neighborhoods in the province of Van. Its population is 1.133.76. There are 1,250,847 registered cattle breeding enterprises throughout the country. As a result, Van has an important position in the country's agriculture in terms of livestock potential.

Keywords: Van, Cattle, Breeding, East Anatolia

VAN İLİ KÜÇÜKBAŞ HAYVANCILIĞININ MEVCUT DURUMU

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ÖZET

Bu çalışma, Van ilinin Küçükbaş hayvancılığının mevcut durumunu incelemek olup, Van ili açısından önemini belirlemektir. Doğu Anadolu Bölgesi Türkiye'nin 7 (yedi) coğrafi bölgesinden biridir. Bölgenin yüzölçümü 164.000 kilometrekaredir. Ülke topraklarının %21'ni oluşturmaktadır. Bölge 14 (on dört) ilden oluşmaktadır ve bölgenin geçim kaynağı tarım ve hayvancılıktır. Türkiye'de, hayvancılık geniş ölçüde tabii çayır-meraya dayanmaktadır. Çayır-mera ve yem bitkileri, hayvansal üretimin artırılmasında tarımın temelini teşkil etmektedir. Meralarımız büyük oranda, küçükbaş hayvan yetiştiriciliği bakımından daha uygundur. Koyunculuk faaliyetleri, çayır ve otlaklar bakımından geniş, kurak iklim şartlarına haiz bölgelerde daha büyük oranda yapılmaktadır. Diğer bir ifadeyle düşük kaliteli geniş meraya sahip yerlerde yapılabilecek en kârlı hayvancılık kolu koyunculuktur. Türkiye'de Doğu Anadolu Bölgesi sahip olduğu doğal ve ekonomik şartları nedeniyle hayvancılık yapmaya elverişli bir yapıya sahiptir. Bölgede ekime elverişli alanlar sınırlı olmakla birlikte, çayır ve mera alanları ise önemli bir yer almaktadır. 2021 yılında Dünyada 1milyar üzeri koyun vardır. Avrupa Ülkeleri'nde 71.5 milyon, Türkiye'de ise 57 milyon beşyüz bin baştır. Koyun sayımız bu dönemde %7.2 artarak 45 milyon 178 bin, keçi sayısı ise %3 artarak 12 milyon 342 baş olmuştur. Buna göre Dünyadaki toplam küçükbaş hayvan sayısının %2'si kadarı ülkemizde bulunmaktadır. Tarım ve Orman Bakanlığının Türkvet'te kayıtlı ülkesel küçükbaş işletme sayısı 435.506 adettir. 2022 yılı Van ili küçükbaş sayısı 2.372.399 baştır. Bu sayının %90.5'i koyun, geri kalan %9.5'i ise keçidir. Van ili küçükbaş varlığı ile ülkemizde 1.sıradadır. Ülkemizin küçükbaş varlığının yaklaşık %23'üne sahiptir. Van ili tarım arazisi ilin yüzölçümünün %17 sine karşılık gelen 372.196.3 hektardır. İlin yüzölçümünün %67'si (1.359.022) hektar çayır ve meralardan oluşmaktadır. Van ili çayır ve mera bakımından ülkemizin çayır ve mera varlığının %10'na sahiptir. Bundan dolayı Küçükbaş hayvancılığı yetiştiriciliği için en elverişli illerden biri olmaktadır. Sonuç olarak, Van hayvancılık potansiyeli bakımından ülke tarımında önemli bir konuma sahiptir.

Anahtar Kelimeler: Van, Küçükbaş, Yetiştirme, Doğu Anadolu

THE CURRENT SITUATION OF SHEEP AND GOAT BREEDING IN VAN

ABSTRACT

This study is to examine the current situation of sheep and goat farming in Van and to determine its importance for the province of Van. Eastern Anatolia Region is one of the 7 (seven) geographical regions of Turkey. The area of the region is 164,000 square kilometers. It

constitutes 21% of the country's land. The region consists of 14 (fourteen) provinces and the livelihood of the region is agriculture and animal husbandry. In Turkey, livestock is largely based on natural meadows and pastures. Meadow-pasture and forage crops constitute the basis of agriculture in increasing animal production. Our pastures are mostly suitable for small cattle breeding. Sheep breeding activities are carried out to a greater extent in areas that are large in terms of meadows and pastures and have arid climatic conditions. In other words, the most profitable livestock branch that can be done in areas with low quality large pasture is sheep breeding. Eastern Anatolia Region in Turkey has a structure suitable for animal husbandry due to its natural and economic conditions. Although the areas suitable for cultivation are limited in the region, meadow and pasture areas have an important place. In 2021, there are over 1 billion sheep in the world. It is 71.5 million heads in European countries and 57 million five hundred thousand heads in Turkey. In this period, the number of sheep increased by 7.2% to 45 million 178 thousand, while the number of goats increased by 3% to 12 million 342 heads. Accordingly, 2% of the total number of sheep and goats in the world are in our country. The number of national small cattle farms registered in Turkvet of the Ministry of Agriculture and Forestry is 435,506. In 2022, the number of sheep and goats in Van is 2,372,399 heads. 90.5% of this number is sheep, the remaining 9.5% is goats. Van province ranks first in our country with the presence of sheep and goats. It has approximately 23% of our country's sheep and goats. The agricultural land of Van province is 372,196.3 hectares, which corresponds to 17% of the province's surface area. 67% (1,359,022 hectares) of the province's surface area consists of meadows and pastures. Van province has 10% of our country's meadows and pastures in terms of meadows and pastures. Therefore, it is one of the most favorable provinces for small cattle breeding. As a result, Van has an important position in the country's agriculture in terms of livestock potential

Keywords: Van, Sheep and Goat, Breeding, East Anatolia

ORGANIC MILK AND RED MEAT PRODUCTION IN THE EUROPEAN UNION CURRENT STATUS AND FUTURE

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ABSTRACT

It is sometimes a problem in obtaining statistics on the number of organic animals in European and EU countries. However, based on today's information, the organic livestock sector has developed rapidly in European countries and has started with organic livestock, beef, lamb and milk production in many countries. Approximately 5.1 million cattle and more than 5.4 million sheep are grown organically. Among all farm animals available in Europe, the proportion of organic animals on a species basis is a small value, ranging from 0.9% to 4.0%. It is easier to convert conventional animal production to organic, and organic production in sheep and cattle species is increasing. Another negative situation is that not all organic animal products can be sold at high prices in the organic market. The biggest increase in product prices between 2010 and 2019 was in poultry, due to the high demand for eggs. However, there has been significant sectoral growth in sheep farming (55%) and cattle and dairy cattle farming (81%) in the last ten years. It is getting harder and harder to meet the demands of the domestic market, as it has grown faster than organic production in many countries in the past years. In other words, more processing, storage, and distribution facilities are needed to evaluate larger quantities of raw products. In addition, statistics for the domestic market can now be obtained more easily. However, the use of different data analysis methods on a national basis is sometimes a problem. Especially in Central and Eastern Europe, information on the actual sales figures of organic products may be insufficient since retail sales data for organic animal production cannot be obtained continuously. In this study, after examining the current situation of organic milk and red meat production in EU countries and the relevant legal regulations, the problems experienced in the process from production to marketing and solutions for them will be given.

Keywords: Organic livestock, organic milk, organic red meat, European Union.

SOIL LIQUEFACTION ASSESSMENT OF A HIGHWAY BRIDGE FOUNDATION

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ABSTRACT

Some severe deformations were detected in the abutments and approach embankments of the Kanal bridge located on the İzmir-Menemen-Aliğa Highway. Based on these findings, drilling, laboratory and numerical analysis studies were carried out to investigate the cause of these deformations. The study area is in the region with the highest earthquake risk in Turkey, and the Menemen Fault Zone is located 13 km NE of the study site. A total of 80m of drilling was completed in two different locations, and 52 SPT samples were taken within the scope of the project. The possible causes of deformations are considered as the potential of the liquefaction of loose granular units in the soil profile and consolidation settlement of the clay units. The time required for the total settlement to decrease up to allowable levels has been calculated using numerical analysis as approximately 10.84 years, and since the filling has been present for more than 7.5 years, the remaining settlement was found above the allowable specification criteria. The liquefaction analyzes were performed using a numerical analysis program according to SPT test data for granular, liquefiable NP (non-plastic) silts and silty sand units in the study area. Moreover, the numerical analyzes were carried out by using the results of the SPT test at kilometer intervals where liquefaction evaluations were not performed, and by using both test results for the sections where CPT test was performed. In SK-5, which is one of the two boreholes, liquefaction potential between 3.0 and 19.5 m has been determined and the total settlement is in the order of 53 cm. On the other hand, liquefaction potential was determined between 3.0 - 4.5 m and 9.0 - 12.0 m in borehole SK-6 and the total expected settlement was determined as 17 cm. The Deep Soil Mixing Method (DSM), one of the soil improvement methods in the study area was proposed as a result of the calculations and it was determined that this method provide the stability, settlement and liquefaction criteria.

Keywords: Soil liquefaction and bridge abutments, DSM and soil liquefaction

SOIL LIQUEFACTION ASSESSMENT OF A HIGHWAY BRIDGE FOUNDATION

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ABSTRACT

The abutments and approach embankments of the Kanal bridge on the Izmir-Menemen-Aligaa Highway were found to have severe deformations. Based on these findings, drilling, laboratory analysis and empirical analysis were carried out to investigate the cause of these deformations. The study area is in the region with the highest earthquake risk in Turkey, and the Menemen Fault Zone is located 13 km NE of the study site. A total of 160.00 m of drilling was carried out in four different locations, and 104 SPT-N samples were taken within the scope of the project. The possible causes of deformations are considered to be the potential liquefaction of loose granular units in the soil profile and the consolidation settlement of the clay units. The liquefaction analyses were performed using the "Simplified Method" using the SPT-N and laboratory data for the granular, liquefiable NP (non-plastic) silts and silty sand units in the study area. The liquefaction potential of the site was determined to be between 3.40 and 10.5 m, and the total sediment deposit due to liquefaction was found to be between 26 and 29 cm. DSM columns are one of the best methods to stop lateral expansion and deformations during liquefaction in such soils. In addition, wick drains should be used at regular intervals between the DSM columns for rapid discharge of water and to create water channels.

Keywords: Soil liquefaction and bridge abutments, liquefaction and simplified method, DSM and soil liquefaction

MEVCUT KÖPRÜ YAKLAŞIM ZEMİNİNİN DERİN ZEMİN KARIŞTIRMA (DSM) YÖNTEMİ İLE GÜÇLENDİRİLMESİ

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ÖZET

İnceleme alanı olan Seyrek köprülü kavşağı, İzmir ilinin Menemen ilçesinde yer almakta olup ilçenin merkezinin güney batısında yaklaşık 7 km uzaklıkta bulunmaktadır. Seyrek Köprülü Kavşağında yapılan incelemeler sonucunda karayolu üzerinde bulunan köprü üzerinde deformasyonlar meydana geldiği gözlenmiştir. Deformasyonların olası nedenleri zemin profilindeki gevşek granüler birimleri sıvılaşma ve kil birimlerin konsolidasyon oturması potansiyeli olarak değerlendirilmektedir. Yapılan analizlere göre toplam oturmanın izin verilebilir mertebelere inmesi için gereken süre yaklaşık 48.13 yıl olarak hesaplanmış olup dolgu 7.5 yılı aşkın süredir mevcut olduğu için kalan oturma miktarının izin verilebilir şartname kriterlerinin üzerinde olduğu belirlenmiştir. Yaklaşım dolgularında derin zemin karıştırma (DSM) kolonları ile zemin güçlendirmenin bu oturma deformasyonlarına çözüm olacağı tespit edilmiştir. Uygulanacak DSM kolonlarda kolon arası mesafe, $S = 2.0 \times 2.0$ m, kolon çapı, $D = 100$ cm, ve uzunluk, $L = 35$ m olarak uygulandığında oturma ve sıvılaşma problemlerinin bertaraf edilmesinin mümkün olduğu bulunmuştur. DSM uygulaması ile yapılan iyileştirme sonrası etki derinliğindeki zemin profili boyunca konsolidasyon oturması 3.88 cm olarak izin verilebilir limitler dahilinde olacağı hesaplanmıştır. Derin karıştırmada su/çimento oranı 1/1, makine dönüş hızı ~80 devir/dk, enjeksiyon basıncı 50 bar, çimento dozajı 400 kg/m³, kolonun minimum basınç dayanımı 4,00 MPa ve kolon imalatını yapacak makinanın en az 630 beygir (470kw) olması gerektiği hesaplamalarla tespit edilmiştir.

Anahtar Kelimeler – köprü yaklaşım zemini ve DSM, DSM ve zemin güçlendirme

THE SEISMIC DESIGN OF STEEL STRUCTURES WITH MULTI-HALL WORKING CRANES ACCORDING TO ASCE7-16

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ABSTRACT

The object of this study is to check the seismic design of steel structures with multi-hall working cranes according to ASCE7-16. It is a steel structure called melt shop unit which is to be constructed as a component of the steel plant. In this steel plant, there are three adjacent halls named: Log Hall, maintenance hall and electric arc furnace hall. In all halls, cranes work simultaneously. Also in electric arc furnace, very heavy equipment and products are available. To lift them, generally, two adjacent working cranes are necessary. Due to their working principles and brake loads complexity, their seismic design should be done accordingly by considering all crane load combinations. The calculation was done in SAP2000 with respect to AISC 360-10 LRFD. In long directions, the steel braces are selected as a lateral load bearing system. In short direction, truss beams and columns are connected to each other to construct moment frames for seismic loads. Firstly, crane girder sections are selected with simple hand calculations and then examined in SAP 2000 whether they satisfy the deflection and strength conditions. In addition, the support reactions are found from this analysis. As a preliminary design, moment frames are designed as a planar system by obtaining crane reaction forces from the analysis only crane girders analyzed. Then these moment frames are checked with the nonlinear p-delta analysis. With all available data and preliminary design results, three-dimensional model is constructed and checked. Finally, the whole structure is evaluated in terms of lateral drift, section capacities.

Key Words: Crane Design, Seismic Design, Multi-Hall Design.

THE INCREMENTAL DYNAMIC ANALYSIS OF MOMENT FRAME AND BRACED FRAME

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ABSTRACT

In this study, incremental nonlinear dynamic assessments of a moment- and concentrically braced frame are performed. The following actions should be finished: Creating a moment with nine stories and a concentrically braced frame where the first stories are taken to be the bottom stories. In this study, W profiles are used instead of Euro profiles. Initially, hinge calculations are used to determine for nonlinear behavior of frames according to AISC 360-16. Then, three strong ground movements are chosen from the PEER Database and scaled to fit the response spectrum with MCE (Maximum considered Earthquake) level. The scaling factor (SF) is chosen in such a way that the intensity of the scaled ground motion would have a spectral acceleration, S_a , equal to $(SF)g$. For example, a SF of 1.00 indicates that the scaled ground motion has a 1.0 g spectral acceleration at the fundamental vibration period. The response spectra of the chosen ground movements are then illustrated. The graph displays the structure's fundamental periods. Lastly, incremental dynamic analyses (IDA) are performed for SF of 0.2 to 2.0 at 0.2 increments. The following graphs are supplied at the outcome stage: Peak story drifts and plastic hinge rotations. Distribution of plastic hinges and deformed shapes are also shown. The time dependent behavior of the columns is shown in the P-M interaction diagram and $M_r/M_n + P_r/P_n$ plots. All these nonlinear analyses are performed in SAP 2000. While carrying out those analysis, p-delta case is considered in planar systems.

Key Words: Moment Frame, Seismic Design, Braced Frame.

ATIK CAM UNU VE YÜKSEK YOĞUNLUKLU POLİETİLEN (YYPE) KULLANILARAK ÜRETİLMİŞ KOMPOZİT MALZEMELERİN PARLAKLIK, RENK VE BEYAZLIK İNDEKSİ ÜZERİNE PARÇACIK BOYUTUNUN ETKİSİ

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Özet

Günümüzde, polimer esaslı kompozit malzemelerin üretilmesinde, çok farklı dolgu malzemeleri kullanılmaktadır. Kullanılan dolgu malzemesinin özelliklerine göre elde edilen polimer kompozit malzemenin teknolojik özellikleri farklılık göstermektedir. Bu çalışmada, atık haldeki meşrubat cam şişelerin öğütülmesi ile elde edilen cam unu ve yüksek yoğunluklu polietilen ile üretilen plastik kompozitlerin bazı renk özellikleri üzerine cam unu parçacık boyutunun etkisi araştırılmıştır. Üretilen levhalar üzerinde, parlaklık değerlerine (20°, 60° ve 85°'lerde), renk parametrelerine (L^* , ΔL^* , a^* , Δa^* , b^* , Δb^* , C^* , ΔC^* , h° , ΔH^* ve ΔE^*) ve beyazlık indeksi değerlerine ait olan ölçümler yapılmıştır. Her test için 10 adet test örneği üzerinde ölçümler yapılmıştır. Elde edilen verilere göre, genel olarak, cam unu parçacık boyutu küçüldükçe renk özelliklerinin değiştiği belirlenmiştir. En büyük toplam renk farklılığı 80 mesh altı parçacık boyutuna sahip cam unu ile üretilen test örnekleri üzerinde belirlenmiştir. Buna göre, cam unu ve YYPE ile üretilen kompozit malzemelerin renk, parlaklık ve beyazlık indeksi özelliklerinin parçacık boyutuna göre değiştiği söylenebilir.

Anahtar kelimeler: Cam unu, yüksek yoğunluklu polietilen, renk, parlaklık, beyazlık indeksi

The effect of particle size on glossiness, color and whiteness index of composite materials produced using waste glass flour and high density polyethylene (HDPE)

Abstract

Today, many different filling materials are used in the production of polymer-based composite materials. The technological properties of the polymer composite material obtained differ according to the properties of the filler material used. In this study, the effect of glass flour particle size on some color properties of glass flour obtained by grinding waste beverage glass bottles and plastic composites produced with high density polyethylene was investigated. On the produced boards, glossiness values (20°, 60° and 85°), color parameters (L^* , ΔL^* , a^* , Δa^* , b^* , Δb^* , C^* , ΔC^* , h° , ΔH^* , and ΔE^*) and whiteness index values were determined. For each test, measurements were made on 10 test samples. According to the data obtained, it was determined that the color properties change as the glass flour particle size decreases. The greatest total color difference was determined on test samples produced with glass flour with particle size below 80 mesh. Accordingly, it can be said that the color, glossiness and whiteness index properties of composite materials produced with glass flour and HDPE vary according to particle size.

Keywords: Glass flour, high density polyethylene, color, glossiness, whiteness index

UV KÜRLENMELİ PARKE VERNİĞİNE SAHİP MONTERİ ÇAMI (*PINUS RADIATA D DON*) ODUNUNA UYGULANAN HIZLANDIRILMIŞ YAŞLANDIRMANIN SHORE D SERTLİK DEĞERİNE VE BAZI YÜZEY PÜRÜZLÜLÜĞÜ PARAMETRELERİNE ETKİSİ

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Özet

Günümüzde, ahşap malzemenin yüzey özelliklerini iyileştirmek ve doğal dayanımını artırmak için çeşitli yüzey kaplama metotları kullanılmaktadır. Sıvı kaplama metotlarından biriside UV sistem parke verniği uygulamasıdır. Bu çalışmada, Monteri çamı (*Pinus radiata D Don*) odunu yüzeylerine uygulanmış UV sistem parke vernik katmanlarında (3 ve 5 kat uygulamalarına sahip) shore D sertlik testi ve yüzey pürüzlülüğü parametreleri (R_a , R_z ve R_q değerleri) üzerine yapay yaşlandırma uygulamalarının (144, 288 ve 432 saatlik sürelerinden oluşan) etkisi incelenmiştir. Çalışmada UV-A 340 lambalarının bulunduğu bir yapay yaşlandırma cihazı, yaşlandırma uygulamalarında kullanılmıştır. Belirlenmiş olan bu sonuçlara göre, hem 3, hem de 5 kat UV sistem parke vernik uygulamaları için shore D sertlik testlerinin ve yüzey pürüzlülüğü parametrelerine (R_a , R_z ve R_q değerleri) ait değerlerin yaşlandırma süresinin artması ile azaldığı tespit edilmiştir. En yüksek değerlerin kontrol (yaşlandırılmamış) deney örneklerinde belirlendiği görülmüştür. Yapılan yapay yaşlandırmanın vernik katmanlarına ait yüzey yapısını değiştirici bir etkide bulunduğu söylenebilir.

Anahtar kelimeler: Monteri çamı, yüzey pürüzlülüğü, UV sistem parke verniği, hızlandırılmış yaşlandırma, shore D sertlik,

The Effect Of Artificial Weathering On The Shore D Hardness Value And Some Surface Roughness Parameters Of Monteri Pine (*Pinus Radiata D Don*) Wood Applied With UV-Curable Parquet Varnish

Abstract

Today, various surface coating methods are used to improve the surface properties of wood material and increase its natural strength. One of the liquid coating methods is the application of UV system parquet varnish. In this study, the effect of artificial weathering (144, 288, and 432 h) on shore D hardness test and surface roughness (R_a , R_z , and R_q values) parameters of UV system parquet varnish layers applied (with 3 and 5 layer applications) to Monteri pine (*Pinus radiata D Don*) wood surfaces was investigated. In the study, an artificial weathering device with UV-A 340 lamps was used in aging applications. According to these results, it has been determined that the values of shore D hardness tests and surface roughness parameters (R_a , R_z , and R_q values) for both 3 and 5 times UV system parquet varnish applications decrease with increasing weathering time. It was observed that the highest values were determined in the control (unaged) experimental samples. It is known that artificial aging has a changing effect on the surface structure of the varnish layers.

Keywords: Monteri pine, surface roughness, UV system parquet varnish, artificial weathering, shore D hardness,

DEPENDENCE OF PHOTOSYNTHESIS IN PLANTS ON SALT TOLERANCE

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Abstract: During salt stress, the photosynthesis process in plants undergoes certain changes, mainly its intensity decreases. This occurs as a direct or indirect effect of salt stress. As salinity increases, direct or oxidative stress occurs due to the closing of stomata, thickening of the mesophyll layer and reduction of CO₂ absorption, dispersion of photosynthetic pigments, weakening of photosynthetic metabolism. According to the results of recent extensive studies, it can be said that the expression of photosynthetic genes occurs during the influence of salt stress and other stress factors. The expression of photosynthetic genes becomes more intense and acute during salt stress. The first stage of the photosynthesis process, the absorption of photons directly depends on the state of its reaction centers, and during salt stress, the absorption of photons decreases due to the disruption of the structure of chloroplasts in the FSI and FSII reaction centers, as well as the disintegration of other auxiliary pigments.

Key words: stress, solinity, plants, pigments, photosynthesis, salt stress

ПАТОГЕННЫЕ ГРИБЫ ОБНАРУЖЕННЫЕ В ПЛОДАХ И ОВОЩАХ АПШЕРОНСКОГО ПОЛУОСТРОВА

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РЕЗЮМЕ

Исследования проводились в садах Апшеронского полуострова. Массовое гниение фруктов и овощей, выращенных в садах, побудило это исследование. В ходе исследований было обнаружено, что причиной гниения фруктов и овощей являются патогенные грибы. Поверхность фруктов и овощей богата эпифитной микробиотой. В основном они малоактивны. Потому что на поверхности неповрежденных фруктов и овощей недостаточно питательных веществ и других условий для их развития. При механическом повреждении фруктов и овощей на поверхность выходит сок, который содержит углеводы, белки, жиры, витамины и др. для питания микробов ингредиенты. В результате количество микроорганизмов резко увеличивается, они развиваются и вызывают гниение фруктов и овощей. К эпифитным микробам фруктов и овощей относятся различные молочнокислые, уксуснокислые бактерии, дрожжевые грибы, плесневые грибы, а также *Herbicola aureum*, *Pseudomonas fluoresceus*. Установлено даже, что некоторые эпифитные микробы препятствуют развитию фитопатогенных микробов, выделяя антибиотические вещества. В 1 г неповрежденной плодовоовощной поверхности насчитывается 6-42 бактерии, 100-266 тыс. дрожжевых и плесневых грибов.

Ключевые слова: плодовые деревья, овощи, грибковые заболевания.

PATHOGENIC FUNGI DETECTED IN FRUIT AND VEGETABLES OF THE APSHERON PENINSULA

SUMMARY

The research was carried out in the gardens of the Absheron Peninsula. The massive rotting of fruits and vegetables grown in orchards prompted this study. In the course of research, it was found that pathogenic fungi are the cause of rotting fruits and vegetables. The surface of fruits and vegetables is rich in epiphytic microbiota. They are mostly inactive. Because on the surface

of intact fruits and vegetables there are not enough nutrients and other conditions for their development. When fruits and vegetables are mechanically damaged, juice comes to the surface, which contains carbohydrates, proteins, fats, vitamins, etc. ingredients for microbial nutrition. As a result, the number of microorganisms increases dramatically, they develop and cause rotting of fruits and vegetables. Epiphytic microbes of fruits and vegetables include various lactic acid, acetic acid bacteria, yeast fungi, mold fungi, as well as *Herbicola aureum*, *Pseudomonas fluoresceus*. It has even been established that some epiphytic microbes prevent the development of phytopathogenic microbes by releasing antibiotic substances. In 1 g of intact fruit and vegetable surface, there are 6-42 bacteria, 100-266 thousand yeasts and molds.

Key words: fruit trees, vegetables, fungal diseases.

**A STUDY ON INVESTIGATION OF EFFECTIVE COMPOUNDS AGAINST THE
CANCER RECEPTOR IN DATE (*Phoenix dactylifera*) BY CHEMICAL
CALCULATION METHOD**

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ABSTRACT

Date palm (*Phoenix dactylifera* L.) is a popular perennial fruit tree cultivated worldwide, particularly in Western Asia and North Africa. Dates are a fruit that is consumed both dry and wet and is an important food source containing carotene, flavonoid, procyanidin, anthocyanin and phenolic compounds. Date fruit is among the drugs used among the people for the treatment of various infectious diseases and cancer. Date is an important fruit crop and it is understood from studies that the extracts in its seeds may be a possible therapeutic agent against cancer. The two most common forms of niacin are nicotinic acid and nicotinamide. Date fruit contains six vitamins along with nicotinic acid and is known to be effective against cancer. It has also been understood that niacin provides protection against the recurrence of cancer, that is, its spread in metabolism. In this study, the interaction of these two important active ingredients in date with the cancer cell receptor as ligand and the inhibition mechanism will be tried to be determined by using docking, which is one of the chemical calculation methods. It is a very important study in terms of giving direction to preclinical and experimental studies by preventing time and material loss.

Keywords: *Phoenix dactylifera*, Niacin, nicotinic acid, docking

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SEMİZOTU BİTKİSİNİN YÜZEY ÖZELLİKLERİNİN TERS GAZ KROMATOĞRAFI YÖNTEMİ İLE BELİRLENMESİ

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ÖZET

Latince ismi *Portulaca oleracea* L. olan ve pirpirim olarak da bilinen semizotu bitkisi, Portulacaceae familyasına ait, sıcak iklimlerde yetişen, otsu ve yıllık bir bitkidir. Semizotu bitkisi, birçok ülkede ateş düşürücü, antiseptik ve benzeri olarak işlev gören bir halk ilacı olarak kullanılmıştır. Son yıllarda bitkiler adsorpsiyon kabiliyetleri ve düşük maliyetleri sebebiyle boya gibi kirleticilerin atık suların uzaklaştırılmasında bir adsorban olarak da kullanılmaktadır.

Bir malzemenin yüzey özelliklerinin belirlenmesi yüzeyin yapışkanlığı ve ıslanabilirliği gibi malzeme için önemli olan özelliklerin araştırılmasında oldukça önemlidir. Malzeme yüzeyinin asitliği veya bazlığı malzemelerin adsorpsiyon davranışlarının değerlendirilmesinde oldukça önemlidir. Malzemenin adsorpsiyon davranışı yüzeyinde yer alan fonksiyonel grupların türüne bağlıdır. Fonksiyonel gruplara bağlı olarak yüzeyin asitlik-bazlık özelliği değişebilmektedir. Malzeme yüzeyinin asitliği veya bazlığını belirleyebilmek için pH_{pzc} , zeta potansiyel ölçümleri, Boehm yöntemi gibi çeşitli yöntemler kullanılabilir. Bu özellik, ayrıca ters gaz kromatografisi (TGK) tekniği ile de kolaylıkla belirlenebilmektedir. Diğer yöntemlerle kıyaslandığında, TGK yöntemi, yüzey asitliği veya bazlığının belirlenmesi dışında yüzey enerjisi, adsorpsiyon entalpisi, adsorpsiyon entropisi, Gibbs serbest enerji değerleri gibi malzeme yüzeyini daha iyi inceleyebilmek için önemli olan parametrelerin belirlenmesinde de kullanılabilen düşük maliyetli ve kolay uygulanabilen bir yöntemdir.

Bu çalışmada, birçok bölgede yetişebilen, düşük maliyetli ve çeşitli kirleticilerin atık suların uzaklaştırılmasında potansiyel bir adsorban olan semizotu bitkisi sıfır atık kapsamında değerlendirildi. Bu bitki çalışmada sabit faz olarak kullanıldı ve yüzey özellikleri sonsuz seyreltiklikte TGK yöntemi ile 30 – 55 °C sıcaklık aralığında belirlendi. Bu sıcaklık aralığında sabit faz üzerinden n-hekzan, n-heptan, n-oktan, n-nonan, n-dekan, tetrahidrofur, aseton, etil asetat, kloroform ve diklorometan çözücüleri geçirildi ve alıkonma davranışları incelendi.

Deneylet sonucunda elde edilen alıkonma verileri kullanarak net alıkonma hacimleri hesaplandı ve doęrusal alıkonma diyagramları çizildi. Bu alıkonma diyagramlarından semizotu bitkisinin dispersif yüzey enerjisi, asitlik-bazlık sabitleri, adsorpsiyon entalpisi, entropisi, Gibbs serbest enerjisini içeren yüzey özellikleri belirlendi. Deneysel çalışmalar sonucunda semizotu bitkisinin yüzeyinin asidik karakterde olduęu tespit edilmiştir.

Anahtar Kelimeler: Semizotu, ters gaz kromatografisi, yüzey özellikleri

Bu çalışma Yıldız Teknik Üniversitesi Bilimsel Araştırma Projeleri Koordinatörlüğü tarafından FBA-2023-5530 proje numarası ile desteklenmektedir.

MEŞE PALAMUTUNDAN ELDE EDİLEN AKTİF KARBON İLE SULU ÇÖZELTİDEN BAZI BOYAR MADDELERİN UZAKLAŞTIRILMASI

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ÖZET

Doğada her ne kadar bol miktarda varmış gibi görünsede sınırlı olan su, hava ve topraklarımız her geçen gün daha fazla kirlenmektedir. Özellikle son yıllarda artan tekstil fabrikalarında kullanılan boyar maddelerin kirlettiği suların arıtılmadan çevreye bırakılması sonucu su kirliliğinde artış yaşanmıştır.

Yapılan farklı çalışmalar üzerine boyar maddelerin özellikle toksit ve kanserojen etkiye sahip olduğu keşfedilmiştir. Kanserojen etkiye de boyar maddelerde bulunan polisiklik hidrokarbonlar, nitro bileşikleri ve diğer bileşikler olduğu bulunmuştur. Boyar maddeler en fazla mesane kanserine yol açmakla beraber doğrudan temasla cilt ve alerjik hastalıklara da neden olmaktadır. Gözle temasları ve solunmaları yüksek risk oluşturmaktadır.

Özellikle son yıllarda etkisi kanıtlanmış, bulunması kolay ve ucuz olan aktif karbonla tekstil atık sulardan boya giderimi çalışmaları önem kazanmıştır. Bu yüksek lisans çalışmasında Meşe Palamutundan elde edilmiş olan aktif karbon ile çeşitli derişimler de hazırlanmış Kristal Violet çözeltilerinde adsorpsiyon çalışması yapılmıştır. Çalışmada değişen çözelti konsantrasyonları, pH ve sıcaklığın etkisi araştırılmıştır.

Böylelikle pH değeri 6'da en iyi adsorplama yaptığı gözlenmiştir. Zaman geçtikçe ve sıcaklık arttıkça adsorplamanın yüksek olduğu bulunmuştur. Çalışma sonucunda Meşe Palamutundan elde edilen aktif karbonun adsorbant olarak kullanılmaya uygun olduğu anlaşılmıştır.

Anahtar kelimeler: Adsorpsiyon, Aktif karbon, Çevre ve sağlık, Meşe Palamutu, Tekstil boyar madde.

REMOVAL OF SOME COLORANTS FROM THE AQUEOUS SOLUTION WITH ACTIVATED CARBON OBTAINED FROM ACORNS

ABSTRACT

Although it seems to be abundant in nature, our limited water, air and soil are getting more and more polluted everyday. Especially in recent years, there has been an increase in water pollution

as a result of leaving the water polluted by the dye stuffs used in textile factories without treatment.

On different studies, it has been discovered that dye stuffs have especially toxic and carcinogenic effects. It has been found that polycyclic hydrocarbons, nitro compounds and other compounds found in dye stuffs have a carcinogenic effect. Although dyes cause bladder cancer the most, they also cause skin and allergic diseases by direct contact. Eye contact and inhalation pose a high risk.

Especially in recent years, dye removal studies from textile waste water with activated carbon, which is proven to be effective, easy to find and cheap, have gained importance. In this master's study, adsorption study was carried out in Crystal Violet solution prepared at various concentrations with activated carbon obtained from Acorns. In the study, the effects of varying solution concentrations, pH and temperature were investigated.

Thus, it has been observed that it makes the best adaptation at pH value 6. Adsorption was found to be higher as time passed and temperature increased. As a result of the study, it was understood that the activated carbon obtained from Acorns is suitable for use as an adsorbent.

Keywords: Acorn, Activated carbon, Adsorption, Environment and health, Textile dye stuff.

UÇUCU YAĞ KOMBİNASYONLARI İLE HASAT SONRASI ELMALARDA *BOTRYTIS CINEREA*'NİN BİYOLOJİK KONTROLÜ

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ÖZET

Bu çalışma, meyvelere uygulanan pestisit miktarını azaltmak için *Botrytis cinerea* Pers.'e (kurşuni küf) karşı uçucu yağ kombinasyonlarının (UYK) fungusit olarak kullanılabilirliğini değerlendirmek için yapılmıştır. İlk aşamada *in-vitro* koşullarda üç farklı uçucu yağ (Timol, Ögenol ve 1,8-Sineol) kombinasyonu (2, 5, 10, 20, 25 ve 30 µL), *B. cinerea*'ye karşı denenmiştir. Daha sonra yapılan *in- vivo* çalışmada enfeksiyon öncesi (koruyucu etki) ve sonrası (tedavi edici) elma meyveleri kullanılarak UYK'ların koruyucu ve tedavi edici özelliğinin olup olmadığı ve UYK'ların elmanın kalite parametreleri (meyve ağırlığı, meyve çapı, pH, titretilebilir asit, meyve sertliği, meyve çürüklüğü, lezyon çapı, simptom indeksi) üzerindeki etkileri araştırılmıştır. Hasat edilen elmalar UYK (ikili kombinasyonlarda 2.5 µL, üçlü kombinasyonlarda 3.75 µL) içeren çözeltilere batırılarak 30 dakika boyunca inkube edilip ±4°C'de 7 günlük depolama sırasında değerlendirildi.

Tüm kombinasyonların 20, 25 ve 30 µL'lik konsantrasyonları fungus miselyum gelişimini %100 engellemiştir. Uygulama yapılan kombinasyonlardan Petride en etkili kombinasyonun Timol+Ögenol+1,8-Sineol (T+E+1,8-C) olduğu tespit edilmiştir. *In vivo* sonuçlarına göre tüm UYK uygulamalarının enfeksiyon öncesi grupların kalite parametreleri enfeksiyon sonrası grupların kalite parametrelerine göre daha etkili sonuçlar verdiği belirlenmiştir. Tüm uygulamalar pozitif kontrol grubuna göre hastalığı %10-60 oranlarında baskıarken, enfeksiyon öncesi uygulama da Ögenol+1,8-Sineol (1,8-C+E+F) kombinasyonun patojene karşı en etkili grup olduğu gözlenmiştir.

Uçucu yağ kombinasyonlarında sinerjik etkinin meydana geldiği bilinmektedir. Bu nedenle, UYK'lar düşük konsantrasyonlarda güçlü antifungal etki göstermişlerdir. Elmalarda hasat sonrası kurşuni küfe karşı uçucu yağ kombinasyonlarının sentetik fungusitlerin yerine alternatif olacağını ve gelecek açısından ümit verici olduğunu düşünmekteyiz.

Anahtar Kelimeler: Sinerjik etki, Uçucu yağ, Elma, *Botrytis cinerea*

Biocontrol of *Botrytis cinerea* in Postharvest Apples by Essential Oil Combinations

ABSTRACT

This study was conducted to evaluate the utility of essential oil combinations (EOC) as fungicides against *Botrytis cinerea* Pers. (gray mold) to reduce the amount of pesticide applied to fruits. In the first stage, three different essential oils (Thymol, Eugenol, and 1,8-Cineole) combinations (2, 5, 10, 20, 25, and 30 μL) were tested against *B. cinerea* under *in-vitro* conditions. After *in-vivo* study, pre-infection (protective effect) and post-infection (therapeutic) apple fruits were used to determine whether UYKs had protective and therapeutic properties, and the quality parameters of apples (fruit weight, fruit diameter, pH, titratable acidity, fruit firmness, fruit rot, lesion diameter, symptom index) were investigated. Harvested apples were immersed in solutions containing UYK (2.5 μL in binary combinations, 3.75 μL in triple combinations) and incubated for 30 minutes and evaluated during seven days of storage at $\pm 4^\circ\text{C}$.

Concentrations of 20, 25, and 30 μL of all combinations inhibited fungal mycelium growth by 100%. Among the combinations applied, it was determined that the most effective combination in the Petri dish was Thymol+Eugenol+1.8-Cineol (T+E+1.8-C). According to the *in vivo* results, it was determined that all UYK applications gave more effective results on the quality parameters of the pre-infection groups than the quality parameters of the post-infection groups. While all treatments suppressed the disease by 10-60% compared to the positive control group, it was observed that the Eugenol+1.8-Cineol (1.8-C+E+F) combination was the most effective group against the pathogen in the pre-infection application.

It is known that a synergistic effect occurs in essential oil combinations. Therefore, UYKs showed potent antifungal activity at low concentrations. We think that essential oil combinations against gray mold in apples after harvest will be an alternative to synthetic fungicides and are promising for the future.

Keywords: Synergistic effect, Essential oil, Apple, *Botrytis cinerea*

EKLEMBACAKLILARIN GIDA OLARAK KULLANIMI

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ÖZET

İnsan nüfusunun çoğalmasıyla birlikte artan gıda talebini karşılama konusu küresel bir sorun olarak ortaya çıkmaktadır. Bu soruna çözüm bulabilmek adına küresel gıda üretim sistemleri farklı besleyici gıda kaynakları aramaktadır ve şimdiye kadar kullanılmayan gıdalar üzerinde değerlendirilmeler yapılmaktadır. Etnolojik verilere göre eklembacaklılar çok eski zamanlardan beri pek çok ülkenin beslenmesinde önemli bir kaynak oluşturmuştur ve bu nedenle günümüzde de geleceğin besin kaynağı olarak aday gösterilmektedir. Bu çalışmada eklembacaklıların besin olarak kullanımı konusunda bilgi verilmesi amaçlanmıştır.

Anahtar Kelimeler: Entomofaji, Gıda, Gıda Güvenliği, Yenilebilir Eklembacaklılar, Yenilik, Sürdürülebilir

STRUCTURAL ANALYZES TO FIND THE EFFECT OF PRESSURE IN SOFT-FINGER BENDING MOTION

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ABSTRACT

In parallel with the development of technology, studies on robotic systems have gained momentum. Since the purpose of these robotic systems is to facilitate human life, most of the inspiration of the systems is the daily movements of humans. In recent years, one of the most critical issues for soft robots, which is a new field of robotics, is the model design, which the efficiency of the movement to the system. In this study, a soft-finger pneumatic model inspired by human finger movement is designed in Solidworks package program, which is one of the computers aided design programs. The soft-finger pneumatic model is 110 mm long, 20 mm high and 20 mm thick. Also, this model is designed with 10 divisions for better bending motion when pressures are applied. Deformation, stress and strain analyzes play an important role in the bending motion of soft-finger model. 5 different static analyzes are carried out with the ANSYS program, which analyzes using the finite element method. When the pressure values of the designed model (30, 40, 50, 60, 100 kPa) are changed, it has been determined how this change affects the amount of stress, strain, and deformation in the soft-finger model. While performing the static analysis of the designed soft-finger model, the material property of the model is chosen as hyperelastic yeoh 2nd order. When the pressure value given to the soft-finger model increases, it is seen that there is an increase in total deformation distribution, von misses stress and equivalent elastic strain values.

Keywords: Soft robot; finite element method; deformation; stress; strain.

KRİSTALİZASYON ENGELLEYİCİ OLARAK BİYOPOLİMERLERİN TEST EDİLMESİ

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ÖZET

Polimerler; hafif, ucuz, mekanik özellikleri çoğu kez yeterli biçimde olan, şekillendirilmesi kolay, farklı amaçlarda kullanıma uygun olan, kimyasal açıdan inert ve korozyona uğramayan, dekoratif maddelerdir. Doğada yok olabilme zamanları çok uzundur ve çoğu zaman petrokimyasal olarak üretilebilirler.

Ekolojik ve çevresel kaygıların arttığı bu günlerde, biyopolimerlere olan ilgi her geçen gün daha da artmaktadır. Biyopolimerler çok yaygın kullanım alanlarına sahiptirler. Bu özellikleri de onların birçok bilim dalı tarafından incelenmesine sebep olmaktadır. Günümüzde; fizik, kimya, biyoloji, tıp ve gıda bilimleri alanlarında yayınlanan bilimsel dergilerin pek çoğunda biyopolimerler hakkında çok sayıda makale bulmak mümkündür. Biyopolimerlerin yenilebilir ve ayrışabilir olmaları, oldukça bol miktarda bulunmaları, az maliyetle elde edilmeleri sebepleri ile diğer polimerlere göre en büyük avantajları arasında sayılabilir.

Bu çalışmada kristalizasyon engelleyici olarak farklı katkı maddeleri ile testler yapılmıştır. Polimer olarak Poliakrilik Asit (PAA) ve Polietilen Glikol (PEG) farklı konsantrasyonlarda kullanılmış ve kristalizasyon üzerindeki etkileri görülmüştür. Deney sonuçlarının ışığı altında PAA ve PEG polimerlerinin etkili kristalizasyon önleyicileri oldukları görülmüştür.

Anahtar Kelimeler : Kristalizasyon, Polimer, Biyopolimer, Katkı Maddeleri

GÖÇMEN KADINLARDA SAĞLIK RİSKLERİ

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ÖZET

Göç sosyal bir yapı içerisindeki bireylerin ve toplumların kültürel, ekonomik ve sosyal nedenlerden dolayı yer değiştirmesidir. Bir toplumun değişmesinde göç her daim önemli bir sebeptir. Göçten ve toplum baskısından en çok etkilenen gruplardan biri de kadınlar olup, toplumsal cinsiyet algısı, göç sürecinden erkeklere oranla daha çok etkilenmelerine sebep olmaktadır. Yaklaşık olarak göç edenlerin yarısı kadınlardan meydana gelmektedir. Kadın sağlığı üzerine pozitif veya negatif etki eden göçler, isteğe bağlı veya zorunlu meydana gelebilmektedir. Düşük sosyo-ekonomik düzeyden dolayı göçmen aileler genel olarak sağlık bakım hizmetlerine uzak yerlere yerleşirler. Bundan dolayı kadının, sağlık bakım hizmetlerine ulaşımı yetersiz kalmakta ve gerekli bakımı almasının önünde engeller meydana gelmektedir. Dil problemi, maddi imkansızlıklar, sağlık politikalarının göçmen bakımını gidermekteki yetersizliği, sosyal desteğin azlığı, kültürel farklılıklara uyum sağlanmaması ve sosyal izolasyon anne ve çocuk sağlığını olumsuz etkilemektedir. Ayrıca yaşanan kültürel şok sosyal destek eksikliğinden kaynaklanan kaygıyı da tetiklemektedir. Göç sonrası aidiyet azaldıkça anksiyete bozuklukları, intihar girişimleri, ruhsal sorunlarla beraber sosyal ve fiziksel problemler de görülmektedir. Beslenmedeki yetersizlikler, altyapı, sağlık hizmetlerinin eksikliği, ortamın hijyenik olmaması, ekonominin olumsuz koşulları, bulaşıcı hastalık riskini yükseltmektedir. Kadın ve kız çocuklarının göç sürecinde yaşadığı problemler; toplumsal cinsiyete dayalı şiddet, rızasız evlendirilme, reşit olmayan yaşta evlilikler, istenmeyen gebelikler, güvenli olmayan düşükler, gebelik ve doğum döneminde gerekli bakımı alamama, anne ölümleri, maddi yetersizlikler ve bulaşıcı hastalıklardır. Göç eden kadınların problemlerinin başında üreme sağlığı problemleri, gebelik ve doğum komplikasyonları, şiddet ve istismar, cinsel yolla bulaşan enfeksiyonlar, ruh sağlığı problemleri ve üreme sağlığı hizmetlerine ulaşım yetersizliği gelir. Özellikle halk sağlığına olumlu yönde etki edecek bağışıklama, ruh sağlığı, ana çocuk sağlığı aile planlaması hizmetlerine erişimin artması, çevre sağlığına yönelik tedbirlerin artırılması hizmetleri ile sağlanılabilir. Sağlık profesyonellerinin de önyargısız ve hassas yaklaşımı, kültürel duyarlılık içinde mahremiyete özen gösterilerek bakım sağlanmalıdır.

Anahtar kelime: Göç, kadın, sağlık

OBSTETRİK ŞİDDET VE ETKİLERİ

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ÖZET

Obstetrik şiddet, gebelikte eş/partner, ebeveynler, kardeşler ya da başka akrabaları tarafından gebeye uygulanan cinsel, fiziksel, ekonomik ya da psikolojik/duygusal şiddet tehdidi olarak tanımlanmaktadır. Çalışmalara göre dünyada dört kadından birinin gebelikte eşi tarafından fiziksel ya da cinsel şiddete maruz kaldığı bildirilmektedir. Gebelikten önce ve gebelik boyunca yaşanan şiddetin hem gebe de hem de fetüste ciddi sorunlara sebep olmaktadır. Yapılan bir çalışmada şiddete maruz kalan kadınların %13.6'sının gebelikte de şiddete maruz kaldığı ve hemen hemen hepsinin sağlık problemleri yaşadıkları (dalgınlık, odaklanma problemleri, depresyon, ağlama nöbetleri, içe kapanıklık, kanamanın olması, bebeğini kaybetme, vücutta morlukların olması, çocuk bakımını aksatma, kalıcı hasarın olduğu (sakatlık)) belirtilmiştir. Kadınların şiddetten dolayı cinsel problemler (istenmeyen gebelikler ve cinsel isteksizlik) yaşadıkları, sağlık hizmetlerine ulaşamadıkları, şiddetten dolayı çocuklarının da etkilendiği ve çocuklarının da şiddete maruz kaldığı belirtilmektedir. Şiddete maruz kalan kadınların hemen hemen hepsi sağlık sorunu yaşamakta ve yaklaşık onda biri de gebelikte şiddet görmektedir. Ayrıca şiddetten dolayı evdeki çocuk bakımlarının aksadığı, çocuklarında şiddete maruz kaldığı ve sağlık hizmetine ulaşmanın engellendiği belirlenmiştir. Bu sonuçlar doğrultusunda; ciddi sağlık sorunlarına yol açan şiddetin erken dönemde tespit edilip, gerekli önlemlerin alınması, kurumlar arası iş birliklerinin yapılması, yeni stratejilerin geliştirilmesi, toplum farkındalığının artırılması için etkinliklerin yapılması önerilmektedir.

Anahtar kelime: Gebelik, şiddet, kadın

JEOTERMAL ENERJİ SİSTEMLERİ VE KULLANIM ALANLARI

GEOHERMAL ENERGY SYSTEMS AND USAGE AREAS

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ÖZET

Dünyanın iç kısmında yer alan ısı, jeotermal enerji olarak isimlendirilir. Isı, yüzeye yakın kırık ve geçirgen tabakalara ulaşmaya kadar, Dünya'nın çekirdeğinden dışarı doğru bir enerji yayılımı yapar. Bu enerji yeraltı suyunu ısıttığından, sıcak su veya buharı, geçirgen olmayan bir tabaka ile çevrili gözenekli ve geçirimli bir kayaç içinde depolanarak jeotermal rezervuarı veya jeotermal sistemi oluşturur. Jeotermal sistemde dolaşan su atmosferden yeraltına sızarak oluşur ve yeraltı jeotermal suları için iklim görevi görür. Atmosferik yağış, kaynak su rezervuarından veya sondaj delikleriyle sızan suyun tamamını veya bir kısmının yerini alabilir. Magma yeraltı suyunu ısıttıktan sonra, oluşan jeotermal enerji suyun dolaşımı ile sığda bulunan gözenekli jeolojik birimlere taşınır ve daha sonra kaplıcalar şeklinde dışarı akar. Jeotermal sistemler, farklı jeolojik koşullar altında ve jeolojik bloklarda önemli ölçüde farklı bir dağılım sunar ve jeotermal sistemler, birkaç jeolojik unsurun birleşmesi ile oluşmuştur. Magmatik bir kayacın olduğu bölgede tipik bir jeotermal sistem için dört ana unsur bulunmaktadır. Bunlar, termal rezervuar, termal kaynak, termal kapak ve termal göç kanalıdır. Elektromanyetik yöntemlerle yakından ilgili olan bu faktörler, suyun oluşum derecesi, suyun taşıdığı mineralizasyon, kayacın litolojisi, gözeneklilik ve ısıyı depolama sıcaklığı gibi faktörlerden doğrudan etkilenen elektriksel bir öz dirençtir. Bunlar arasında en önemli faktör, kayacın litolojisidir. Genel olarak, magmatik ve metamorfik kayaçlar daha yüksek öz dirence sahip iken, sedimanter kayaçlar daha düşük bir öz dirence sahiptir. Aynı zamanda, kayaçların bulunduğu ortamdaki sıvıların varlığı, öz direnci önemli ölçüde değiştirmektedir. Kayaç formasyonlarının öz dirençleri arasındaki fark, elektromanyetik keşfin fiziksel temelini oluşturmaktadır. Yer kabuğunun derinliklerinde bulunan jeotermal enerji, büyük rezerve ve düşük karbon içeriğine sahip olduğundan yaygın olarak kullanılır ve çevre dostudur. Hem ısıtma hem de soğutma için son derece değerli bir termal rezervuar oluştururlar. Antik çağlardan beri insanlar jeotermal enerjiyi doğrudan kullanmışlardır. Ayrıca, jeotermal enerjinin sürdürülebilir, kontrol edilebilir ve kullanımı kolay olduğundan, sürdürülebilir ve istikrarlı bir enerji kaynağıdır. Bu literatür çalışmasında, jeotermal enerji sistemleri ve kullanım alanları araştırılmıştır.

Anahtar kelimeler: Jeotermal, sıcak su veya buharı, magmatik ve metamorfik kayaç, çevre

ABSTRACT

The heat in the interior of the earth is called geothermal energy. The heat radiates outward from the Earth's core until it reaches the broken and permeable layers near the surface. As this energy heats the groundwater, the hot water or steam is stored in a porous and permeable rock surrounded by an impermeable layer, forming a geothermal reservoir or geothermal system. The water circulating in the geothermal system is formed by infiltrating the underground from the atmosphere and acts as a replenishment for the underground geothermal waters. Atmospheric precipitation can replace all or some of the water seeping through the source water reservoir or boreholes. After the magma heats the groundwater, the formed geothermal energy is transported by the circulation of the water to the porous geological units in the shallows and then flows out in the form of hot springs. Geothermal systems present a significantly different distribution under different geological conditions and in geological blocks, and geothermal systems are formed by the combination of several geological elements. There are four main elements for a typical geothermal system in an igneous rock region. These are the thermal reservoir, the thermal source, the thermal cap, and the thermal migration channel. These factors, which are closely related to electromagnetic methods, are an electrical resistivity that is directly affected by factors such as the degree of formation of water, the mineralization carried by the water, the lithology of the rock, porosity and heat storage temperature. The most important factor among these is the lithology of the rock. In general, igneous and metamorphic rocks have a higher resistivity, while sedimentary rocks have a lower resistivity. At the same time, the presence of liquids in the environment of the rocks significantly changes the resistivity. The difference in resistivity of rock formations is the physical basis of electromagnetic discovery. Geothermal energy, located deep in the earth's crust, is widely used and environmentally friendly since it has large reserves and low carbon content. They form an extremely valuable thermal reservoir for both heating and cooling. Since ancient times, people have directly used geothermal energy. Also, since geothermal energy is sustainable, controllable and easy to use, it is a sustainable and stable energy source. In this literature study, geothermal energy systems and their usage areas were investigated.

Keywords: Geothermal, hot water or steam, igneous and metamorphic rock, environment

PLATİNİN (Pt) GEMOLOJİDE KULLANIMI VE İNSAN SAĞLIĞI AÇISINDAN ÖNEMİ

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ÖZET

Platin grubu metaller periyodik tablonun 8B grubunda bulunmaktadır. Bu metaller paladyum, platin, rutenyum, rodyum, iridyum ve osmiyum olarak sıralanabilir. Bunlar arasında Platin (Pt) atom numarası 78 olan kimyasal bir element ve değerli bir metaldir. Ağır, gri beyaz renkli, korozyona karşı dayanıklı olduğu bildirilmiştir. Dünyada bulunan platinin en büyük kaynağı Güney Afrika'dan gelirken, bunu Rusya ve Kuzey Amerika takip etmektedir. Dünyadaki platin üretiminin 155 ton civarında olduğu bilinmektedir ve Dünyada toplam 30000 tonun üstünde rezerv bulunmaktadır. Son yıllarda teknolojinin hızla gelişmesi platin grubu metallerin kullanım alanlarını arttırmıştır. Kuyumculukta, elektrik kontaklarında, diş hekimliğinde diş protezlerinin yapımında, laboratuvarlarda kullanılan malzemelerin, ısıl uçların ve tellerin yapımında, ham petrolün işlenmesi ve sülfürik asit elde edilmesinde katalizör olarak yaygın şekilde kullanılmaktadır. Ayrıca motorlu taşıtlar için katalitik konvertördür. Araçların motorlarından gelen emisyonları daha az zararlı atık maddelere dönüştürmekte oldukça etkilidir. Kimya sanayinde de silikon, nitrik asit ve benzen üretiminde katalizör görevi yapmaktadır. Platin metali tek başına çok tehlikeli olmadığı bilinmektedir. Ancak platin tuzları çeşitli sağlık problemlerine neden olabilmektedir. Yapılan çalışmalar Platin tuzlarının DNA değişiklikleri, ciltte alerjik reaksiyonlar, böbrekte, bağırsaklarda, kemik iliğinde hasar, işitme kaybı gibi sağlık problemlerine neden olabildiğini göstermiştir. Bazı platin kompleksleri ise cis-platin gibi anti tümör aktivitelerinden dolayı kanser hastalarında kemoterapide kullanılmaktadır. Bu kullanımlarda ise böbreklerde geri dönüşü olmayan tahribatlara yol açtığı bilinmektedir. Ancak tüm bunlar platine maruz kalan kişilerin bağışıklığına ve maruz kalma düzeyine bağlı olarak değişebilmektedir. Kurşunlu benzin kullanan araçların egzoz gazlarıyla havaya salınabilmektedir. Özellikle tünellerde ve garajlarda platinin havadaki seviyesinin daha yüksek olduğu bilinmektedir. Bu bildiride yaygın kullanım alanlarına sahip olan Pt'nin çevre ve sağlık üzerine olan etkileri araştırılmıştır.

Anahtar Kelimeler: Platin, çevre, insan sağlığı.

USE OF PLATIN (Pt) IN GEMOLOGY AND HUMAN HEALTH IMPORTANCE FOR

ABSTRACT

The platinum group metals are in group 8B of the periodic table. These metals can be listed as palladium, platinum, ruthenium, rhodium, iridium and osmium. Among them, Platinum (Pt) is a chemical element with atomic number 78 and a precious metal. It is reported to be heavy, gray-white in color, resistant to corrosion. The largest source of platinum in the world comes from South Africa, followed by Russia and North America. It is known that the platinum production in the world is around 155 tons and there are reserves of over 30000 tons in total in the world. The rapid development of technology in recent years has increased the usage areas of platinum group metals. It is widely used as a catalyst in jewelry, electrical contacts, in dentistry, in the manufacture of dental prostheses, in the manufacture of laboratory materials, thermocouples and wires, in the processing of crude oil and in the production of sulfuric acid. It is also a catalytic converter for motor vehicles. It is very effective in converting emissions from vehicles' engines into less harmful waste materials. It also acts as a catalyst in the production of silicon, nitric acid and benzene in the chemical industry. It is known that platinum metal alone is not very dangerous. However, platinum salts can cause various health problems. Studies have shown that platinum salts can cause health problems such as DNA changes, allergic reactions on the skin, damage to the kidneys, intestines, bone marrow, and hearing loss. Some platinum complexes are used in chemotherapy in cancer patients due to their anti-tumor activities such as cis-platinum. It is known that these uses cause irreversible damage to the kidneys. However, all these may vary depending on the immunity and exposure level of people exposed to platinum. It can be released into the air with the exhaust gases of vehicles using leaded gasoline. It is known that the level of platinum is higher in the air, especially in tunnels and garages. In this paper, the effects of Pt, which has widespread usage areas, on the environment and health were investigated.

Keywords: Platinum, environment, human health.

BATARYALARIN KALAN FAYDALI ÖMRÜNÜN İNCELENMESİ

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ÖZET

Bataryalar, taşınabilir, şarj edilebilir ve kullanışlı olması gibi birçok özellikleri sayesinde çok çeşitli elektrikli cihaz ve ekipmanlarda güç kaynağı olarak kullanılmaktadır. Kullanım süresinde kalan faydalı ömürlerin bilinmesi bataryalar için en önemli faktörün başında gelmektedir. Kalan faydalı ömür süresini, kullanım şekli, saklama ve çevre koşulları gibi çeşitli faktörler etkilemektedir. Kullanım esnasında batarya kapasitesi kademeli olarak azalmaktadır. Batarya türüne bağlı olarak her bataryanın belirli bir eşik seviye bulunmaktadır. Bu eşik seviyesi aşıldığı zaman batarya yeterli güç sağlamayacak noktayı ulaşmış olacaktır. Bir bataryanın kalan faydalı ömrünü, kapasitesinin kullanım süreci boyunca ölçülmesiyle ya da aynı türdeki kullanılmış veya yeni olan bataryaların performansıyla karşılaştırılmasıyla tahmin edilebilmektedir. Sıcaklık, şarj akımları ve deşarj hızı gibi faktörler de bataryanın kalan kullanım ömrünü etkilemektedir Bir bataryanın kalan faydalı ömrünü artırmak için, pili uygun şekilde kullanmak, saklamak ve aşırı şarj veya aşırı deşarjdan kaçınmak önemlidir. Bu çalışmada, bataryaların kalan faydalı ömrünün incelemesi ele alınmıştır. Çalışma sonucunda elde edilen bulgular ışında bataryanın kalan faydalı ömrünün arttırılması için gerekli önlemler vurgulanmıştır.

Anahtar Kelimeler : Batarya, Kalan Faydalı Ömür, Kullanım Süresi, Şarj, Deşarj

BETA TRİKALSİYUM FOSFATA BARYUM TİTANAT İLAVESİNİN ETKİSİ

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ÖZET

Bu çalışmada ağırlıkça %1, %3 ve %5 oranlarında baryum titanat ($BaTiO_3$) ilavesinin beta trikalsiyum fosfat (β -TCP)' a etkisi incelenmiştir. Bu amaçla $BaTiO_3$ ilaveli ve ilavesiz β -TCP' ler 1000, 1050, 1100, 1150, 1200 ve 1250°C sıcaklıklarda 4 saat süre ile sinterlenmiştir. Çapca kısıalma, yoğunluk, sertlik, kırılma tokluğu ve dikey basma mukavemeti testleri ile X-ışınları difraksiyonu (XRD) ve taramalı elektron mikroskobu (SEM) incelemeleri gerçekleştirilmiştir. Yapılan incelemeler neticesinde β -TCP için en yüksek çapca kısıalma (9.29 ± 0.57), yoğunluk ($2.70 \pm 0.01 \text{ g/cm}^3$), sertlik ($1.99 \pm 0.16 \text{ HV}_{0.2}$), kırılma tokluğu ($1.05 \pm 0.17 \text{ MPam}^{1/2}$) ve dikey ($127 \pm 9.29 \text{ MPa}$) basma mukavemeti değerlerinin 1200°C' de $5.077 \pm 0.571 \mu'$ luk ortalama tane boyutunda ulaşılmıştır. Ancak 1250°C' de β -TCP' ye ait tüm özelliklerin azaldığı ve bunun ortalama tane boyutunun $7.371 \pm 0.996 \mu'$ luk ortalama tane boyutuna artıştan, mikroçatlak oluşumundan ve %3,2'lik oranda olmak üzere alfa trikalsiyum fosfat (α -TCP) fazına dekompoze olmasından dolayı kaynaklandığı belirlendi. β -TCP/ $BaTiO_3$ kompozitlerinde en yüksek çapca kısıalma 15.30 ± 0.34 , yoğunluk $2.84 \pm 0.04 \text{ g/cm}^3$, sertlik $3.02 \pm 0.20 \text{ HV}_{0.2}$, kırılma tokluğu $1.58 \pm 0.13 \text{ MPam}^{1/2}$ ve dikey basma mukavemeti $170.7 \pm 9.37 \text{ MPa}$ olarak ölçülmüştür. β -TCP/ $BaTiO_3$ kompozitlerinde Ba-Ti-O ($Ba_{1.31}Ti_8O_6$, $BaTi_6O_{13}$, $Ba_2Ti_{13}O_{22}$, $BaTi_2O_5$), Ca-Ti-O ($CaTi_2O_4$, $Ca_4Ti_3O_{10}$, $CaTiO_3$) ve Ba-P-O ($Ba_2P_2O_7$) elementlerini ihtiva eden fazlarla, α -TCP fazlarının meydana geldiği belirlendi. Ancak; gerek β -TCP gerekse β -TCP/ $BaTiO_3$ kompozitlerinin $2-6 \text{ MPam}^{1/2}$ ' nin altında kırılma tokluğu değerlerine sahip olmamalarından dolayı yüke dayanım gerektiren uygulamalarda kullanılamayacağı belirlendi.

Anahtar Kelimeler: Beta Trikalsiyum Fosfat, Baryum Titanat, Sinterleme

ARITILMIŞ SİNTİNE ATIKSUYUNDA HAVALANDIRMA İLE ORGANİK PARAMETRE GİDERİMİNİN İYİLEŞTİRİLMESİ

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ÖZET

Deniz kirliliğinin başlıca kaynaklarından biri petrol ve petrol türevli ürünlerin taşınması sırasında meydana gelmektedir. Deniz güvenliğinin artırılması ve deniz kirliliğinin önlenmesi kapsamında, devletlerin üye oldukları organizasyon ve örgütler kurulmuş, yine devletlerin taraf oldukları uluslararası sözleşmeler imzalanmıştır. Türkiye'nin de üyesi bulunduğu Uluslararası Deniz Örgütü tarafından oluşturulan Petrol Kirliliğini Önleme Sözleşmesi ve takip eden deniz kirliliğinin önlenmesi ve zararların tazmini amaçlı anlaşmalar çerçevesinde ülkeler kendi ulusal kanun ve yönetmelikleri düzenlemişlerdir. Ülkemizde de Gemi Atıkları Kanunu kapsamında ulusal liman atık kabul tesisleri ile gemi atıkları, ikincil deniz kirliliği oluşturmayacak şekilde, kontrollü bir şekilde toplanarak yağ ile suyun ayrılmasından sonra işlenmektedir. Ayrılan kirli su (sintine) kısmı, tesis içerisinde bulunan fizikokimyasal arıtma ünitesinde deşarj kriterlerine

uygun şekilde arıtılarak alıcı atık su ortamına gönderilmektedir. Tesiste yer alan fiziko-kimyasal ve çözülmüş hava flotasyonu (DAF) arıtma üniteleri ile gerçekleştirilen atıksu arıtımındaki ana parametre olan kimyasal oksijen ihtiyacı (KOİ), arıtma girişindeki atıksu içeriğindeki salınımlar nedeniyle nadiren de olsa çıkış deşarj kriterini (600 mg/L) aşmaktadır. Bu durumda, arıtma tesis çıkışı, tesis girişine devredilerek arıtma kademeleri uygulanmakta ve deşarj kriteri sağlanıncaya kadar proses tekrarlanmaktadır. Bu çalışmada, bir gemi atık kabul tesisinde, arıtma çıkışı sonrasında havalandırma uygulamasının KOİ parametresinin iyileştirilmesine etkisi incelenmiş, KOİ değerinin deşarj limiti altına indirilmesi hedeflenmiştir. Bu kapsamda, tesis çıkışının yüksek KOİ içerdiği günlerde alınan arıtılmış su numuneleri bir m³'lük IBC tankına alınarak, tank tabanından difüzör ile farklı havalandırma sürelerinde kuru hava verilerek, havalandırma sonrası KOİ ölçümü yapılmıştır. Atıksuyun tesis girişinde farklı günlerde değişken bir karakterizasyona sahip olması sebebiyle, yüksek KOİ konsantrasyonlarında havalandırmanın KOİ deşarj limitini sağlamada yetersiz kaldığı ve havalandırma süresini artırmanın KOİ giderim verimini yükseltmediği görülmüştür.

Anahtar Kelimeler : Sintine atıksuları, liman atık kabul tesisleri, havalandırma, kimyasal oksijen ihtiyacı

KAYNATMA VE PRESLEME SÜRESİNİN YOĞUNLAŞTIRILMIŞ KIZILÇAM (*Pinus brutia* Ten.) ODUNUNUN FİZİKSEL ÖZELLİKLERİ ÜZERİNE ETKİSİ

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ÖZET

Kızılçam (*Pinus brutia* Ten.) ülkemizde bulunan iğne yapraklı ağaç türleri içerisinde en geniş yayılış alanına sahip ve hızlı büyüyen bir ağaç türüdür. Yapı elemanları ve orman ürünleri endüstrisinde kullanılacak ağaç malzemedeki yüksek yoğunluk ve direnç özellikleri beklenir. Nüfusun artışına paralel olarak orman ürünlerine olan talepte günden güne artmaktadır. Bu durum hammadde kaynaklarındaki azalma riskini ortaya çıkarmakta ve orman kaynaklarının sürdürülebilirliğini arttırmak için verimli kullanılmasının önemini arttırmaktadır. Günümüz orman ürünleri endüstrisinde yaygın olarak kullanılan ağaç türlerine alternatif oluşturmak için ülkemizde doğal yayılış gösteren ağaç türlerinin endüstri içerisinde daha çok kullanılması ülke ekonomisine büyük katkı sağlayacaktır. Bu çalışmada, kızılçam odununun termo-mekanik yöntem ile kaynatma süresi, pres süresi ve sıkıştırma oranı gibi bazı test parametreleri kullanılarak yoğunlaştırılmasıyla bazı fiziksel özelliklerinin artırılması amaçlanmıştır. Kullanılan test parametrelerinin fiziksel özellikler üzerine etkisi de ayrıca 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. Her bir deney grubu için örnekler, 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, işlem görmüş deney gruplarında ortalama rutubet miktarı değerleri %5,93 ile %6,93 arasında bulunurken, yoğunluk değerleri ise 0,64 ile 0,84 gr/cm³ arasında bulunmuştur. Sonuçların istatistiksel analizi yapıldığında, tüm deney gruplarının işlem görmemiş örneklerle göre fiziksel özellikler üzerinde %95 güven düzeyinde önemli derece etkili olduğu sonucuna varılmıştır. Sıkıştırma oranları kendi aralarında incelendiğinde ise %40 sıkıştırma oranına sahip deney gruplarının %20 sıkıştırma oranına sahip deney gruplarına göre fiziksel özellikler üzerinde önemli derecede etkili olduğu bulunmuştur.

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

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ÖZET

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

ATIK AHŞAP KARIŞTIRMA ÇUBUKLARININ LEVHA ÜRETİMİNDE DEĞERLENDİRİLMESİ

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ÖZET

Pandemi süreciyle birlikte tek kullanımlık ürünlerin önemi artmış bu durum beraberinde tek kullanımlık ahşap atık miktarının artmasına yol açmıştır. Bu çalışma kapsamında tek kullanımlık ahşap karıştırma çubuklarının geri dönüştürülmesi amacıyla hafif panel üretiminde değerlendirilmesi amaçlanmıştır. Bu kapsamda Doğu kayını (*Fagus orientalis L.*) ve kavak (*Populus sp.*) ağaçlarından üretilmiş ahşap karıştırma çubukları ile fenol formaldehit tutkalı kullanılarak hafif panel üretilmiştir. Üretimde ahşap karıştırma çubukları kayın plakalar arasına yerleştirilerek iki farklı tipte levha üretilmiştir. Üretilen panellerin hava kurusu yoğunluk, tam kuru yoğunluk, rutubet miktarının belirlenmesi ve 2 - 240 saat süreli boyutsal stabilitesinin belirlenmesi denemeleri yapılmıştır. Sonuç olarak hacimsel değişimde kayın-kayın-kayın levhaların 2 saatte %5,99, 240 saat sonunda %13,3 olduğu belirlenmiştir. Bunun yanında kayın – kavak – kayın levhaların 2 saatte hacimsel değişimi %7,14, 240 saatte %10,33 olduğu belirlenmiştir. Kayın – Kayın – kayın levhaların hacimsel değişimlerinin kayın – kavak – kayın levhalara göre daha yüksek olduğu belirlenmiştir. Sonuç olarak kayın – kavak – kayın levhaların nem ile ilişkili olduğu yerlerde kullanımının daha uygun olduğu söylenilebilmektedir.

Anahtar Kelimeler : Ahşap Karıştırma Çubuğu, Geri dönüşüm, hafif panel

KAVAK (*Populus euramericana*) KAPLAMALARDAN HAZIRLANAN TABAKALANMIŞ KAPLAMA KERESTELERİN BAZI FİZİKSEL ÖZELLİKLERİN BELİRLENMESİ

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Özet

Dünya orman kaynaklarının daha verimli kullanılmasına yönelik artan bilinç ve talep doğrultusunda mühendislik ürünü ahşap esaslı kompozitlerin üretimi ve kullanımı artış göstermektedir. Özellikle hızlı yetişen ağaç türlerinin katma değeri yüksek kompozit içerisinde değerlendirilmesi oldukça önemlidir. Bu çalışma kapsamında, kavak (latince) odunlarından hazırlanan kaplamalar Fenol Formaldehit (FF) ve Polimerik Metilen Difenilin İzosiyonat (PMDI) tutkalları kullanılarak tabakalanmış ağaç kaplama (TAK) üretimi gerçekleştirilmiştir. Numunelerin TS 2471, TS 2472 ve ASTM D-1037'ye göre bazı fiziksel özellikleri tespit edilmiştir. Elde edilen sonuçlara göre PMDI tutkalı ile hazırlanan örneklerin FF tutkalı kullanılarak hazırlanan örneklerle göre su alma sonrası kalınlık, hacim ve ağırlık değişimi açısından istatistiksel olarak anlamlı ($p < 0,05$) fark olduğu tespit edilmiştir.

Anahtar Kelimeler: Tabaklanmış Kaplama Kereste, Mühendislik Ürünü Ahşap Malzemeler, Fiziksel Özellikler, Kavak.

STRUCTURE AND MECHANICAL PROPERTIES OF $\text{Co}_{25}\text{Ni}_{25}(\text{HfTiZr})_{50}$, $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Al}_{10}$ AND $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Cu}_{10}$ HIGH ENTROPY ALLOYS

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ABSTRACT

High entropy alloys have attracted much attention and new alloy systems have been developed with attractive properties such as mechanical, thermal, corrosion and oxidation resistance, magnetic properties and high-temperature strength since their discovery. High entropy alloys are the multi-component alloy systems which mainly consist of at least four or more constituent elements in equiatomic or near-equiatomic proportions. The non-equiatomic high entropy alloys were also developed. Increasing demands of materials with enhanced mechanical properties such as high elasticity and high strength at high temperature, especially for aerospace and defense applications, results in the development of new and advanced alloy systems. The motivation of this study is to investigate the microstructure, structure and mechanical properties of $\text{Co}_{25}\text{Ni}_{25}(\text{HfTiZr})_{50}$, $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Al}_{10}$ and $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Cu}_{10}$ high entropy alloys. The alloys were produced from high purity elements using vacuum arc melter under an argon gas atmosphere. The thermophysical properties such as valence electron concentration (VEC), enthalpy of mixing, entropy of mixing and the atomic radii difference of the high entropy alloys were calculated. The VEC values are important for the prediction of the solid solution phase formation. The multi component high entropy alloys may form a single-phase solid solution, multi-phase solid solution with/without intermetallic phases. The crystal structure, phase stability, microstructure and mechanical properties of $\text{Co}_{25}\text{Ni}_{25}(\text{HfTiZr})_{50}$, $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Al}_{10}$ and $(\text{CoNi})_{45}(\text{HfTiZr})_{45}\text{Cu}_{10}$ high entropy alloys were investigated using the combined characterization techniques such as X-ray diffraction, optical microscope (OM) and mechanical testing. The effect of addition of Al and Cu on the phase stability, microstructure and mechanical properties of $\text{Co}_{25}\text{Ni}_{25}(\text{HfTiZr})_{50}$ high entropy alloy were also investigated and analyzed.

Key words: High Entropy Alloys, Microstructure, Phase Stability, Mechanical Properties.

RECYCLING OF WASTE WOOD STIR STICKS IN BOARD PRODUCTION

ABSTRACT

With the pandemic, the importance of disposable products has increased, which has led to an increase in the amount of disposable wood waste. Within the scope of this study, it is aimed to evaluate the disposable wooden stir sticks in the production of light panels in order to recycle them. In this context, a light panel was produced by using wooden stir sticks made of Eastern beech (*Fagus orientalis* L.) and poplar (*Populus* sp.) trees and phenol formaldehyde glue. In production, two different types of boards were produced by placing wooden stir sticks between beech plates. Attempts were made to determine the air-dry density, oven-dry density, moisture content and dimensional stability of the panels produced for 2 - 240 hours. As a result, it was determined that the volumetric change of beech-beech-beech plates was 5.99% in 2 hours and 13.3% at the end of 240 hours. In addition, it was determined that the volumetric change of beech - poplar - beech boards in 2 hours was 7.14%, and 10.33% in 240 hours. It has been determined that the volumetric changes of beech - beech - beech plates are higher than beech - poplar - beech plates. As a result, it can be said that beech - poplar - beech boards are more suitable for use in places where moisture is associated.

Key Words: Wooden stir stick, recycling, light panel.

A MINI REVIEW ON APPLICATIONS OF TEXTILE STRUCTURES COATED WITH CHITOSAN IN BIOMATERIALS

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ABSTRACT

A mini-compilation was made on the functional properties of chitosan applied to various textile fibers and fabrics in the application areas of biomaterials. The definition of biomaterials, the raw materials used, design criterias, production methods and application areas have been mentioned. The importance of textile coating processes, the raw materials used, effective process parameters, coating methods and functional properties that can be added to textile surfaces have been mentioned. General properties, production method, effective process parameters, chemical structure and types of chitosan have been mentioned. In addition, various experimental studies on the various functional properties of chitosan as a textile coating material on various textile surfaces have been mentioned by examining in detail with the process parameters,too.

Keywords : Biomaterials, textile structures, coating, chitosan, functionality, applications

ALÜMİNYUM VE POLYAMİD NOZULLARI KULLANILARAK KARŞIT AKIŞLI RANQUE – HILSCH VORTEKS TÜPÜNÜN PERFORMANSININ MAKİNE ÖĞRENİMİ METODLARI İLE KARŞILAŞTIRILMASI

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ÖZET

Farklı akışkanlar kullanılarak aynı anda hem ısıtma hem de soğutma yapabilen, kontrol parçası dışında hareketli parçası bulunmayan sistem Ranque-Hilsch Vorteks Tüp (RHVT) olarak adlandırılır. Bu çalışmada, RHVT ile akışkan olarak hava kullanılmış olup, alüminyum ve polyamid malzemelerden yapılan beş farklı (2,3,4,5,6) giriş yüzeylerine sahip nozullar ile farklı basınç değerlerinde deneyler yapılmıştır. Deneyler esnasında basınç değerleri 1,5 bar ile başlayarak her 0,5 bar aralıklarında 7 bar değerine kadar alüminyum ve polyamid nozullar ayrı ayrı RHVT'ne yerleştirilerek ölçümler alınmıştır. Çalışmada ölçülen deney sonuçları RHVT'nden çıkan soğuk akış sıcaklığı ile sıcak akış sıcaklığı arasındaki fark hesaplanmıştır. Daha sonra RHVT deney sonuçlarını makine öğrenimi metodları kullanılarak performans karşılaştırılması yapılmıştır. Makine öğrenimi metodları olarak, Lineer Regresyon, Gauss Süreç Regresyonu, Destek Vektör Makineleri, Regresyon Ağaçları ve Ağaç Toplulukları kullanılmıştır. Makine öğrenimi metodları ile eğitim verisi tüm verinin %70'i, test verisi ise tüm verinin %30'u kullanılarak analizler gerçekleştirilmiştir. Eğitilen model kullanılarak test verisi ile tahminler karşılaştırılarak performans optimizasyonu yapılmış, elde edilen test tahmin sonuçlarının doğruluk değerlerinin ölçüsü olan determinasyon katsayısı R^2 hesaplanarak incelenmiştir. İncelemeler sonucunda alüminyum malzemenin nozullarının performansı değerlendirildiğinde makine öğrenimi metodları içerisinde en iyi determinasyon katsayısı değeri 0,99 ile Destek Vektör Makineleri ve Gauss Süreç Regresyonu ile elde edilmiştir. Polyamid malzemenin nozullarının performansları karşılaştırıldığında ise en iyi determinasyon katsayısı değeri 0,99 ile Gauss Süreç Regresyonuyla elde edilmiştir.

Anahtar Kelimeler : Ranque-Hilsch Vorteks Tüp, Makine Öğrenimi, Isıtma, Soğutma

COMPARISON OF PERFORMANCE OF COUNTERFLOW RANQUE – HILSCH VORTEX TUBE USING ALUMINUM AND POLYAMIDE NOZZLES WITH MACHINE LEARNING METHODS

ABSTRACT

The system, which can heat and cool simultaneously using different fluids and has no moving parts other than the control part, is called Ranque-Hilsch Vortex Tube (RHVT). In this study, the air was used as a fluid with RHVT, and experiments were carried out at different pressure values with nozzles with five different (2,3,4,5,6) inlet surfaces made of aluminum and polyamide materials. During the experiments, the pressure values from 1,5 bar to 7 bar at every

0.5 bar interval were taken by placing the aluminum and polyamide nozzles separately on the RHVT. The study calculated the difference between the cold and hot flow temperatures from the RHVT. Then, performance comparisons were made using RHVT experimental results using machine learning methods. Machine learning methods, Linear Regression, Gaussian Process Regression, Support Vector Machines, Regression Trees and Tree Ensembles were used. Analyzes were carried out using machine learning methods with 70% of the training and 30% of the test data. Performance optimization was made by comparing the test data with the predictions using the trained model, and the coefficient of determination R^2 , which is the measure of the accuracy values of the test prediction results obtained, was examined. As a result of the examinations, when the performance of the nozzles of the aluminum material was evaluated, the best coefficient of determination value of 0.99 among the machine learning methods was obtained with Support Vector Machines and Gaussian Process Regression. When the performances of the nozzles of the polyamide material were compared, the best coefficient of determination value of 0.99 was obtained with Gaussian Process Regression.

Keywords: Ranque-Hilsch Vortex Tube, Machine Learning, Heating, Cooling

KARŞIT AKIŞLI RANQUE – HILSCH VORTEKS TÜPÜNDE ÇELİK VE PİRİNÇ NOZULLARI KULLANILARAK MAKİNE ÖĞRENİMİ METODLARI İLE PERFORMANSLARININ KARŞILAŞTIRILMASI

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ÖZET

Ranque-Hilsch Vorteks Tüp (RHVT) aynı anda soğutma ve ısıtma yapabilen, kontrol parçası dışında hareketli parçası bulunmayan ve farklı basınçlı akışkanlar ile çalışabilen sistemlerdir. Deneysel çalışmada, RHVT ile çelik ve pirinç malzemelerden yapılan beş farklı (2,3,4,5,6) nozullar kullanılarak farklı basınçlarda, akışkan olarak hava kullanılmıştır. Deneysel çalışmada basınç değerleri ilk olarak 1.5 bar ile başlatılmış olup, her 0.5 bar aralıklarında 7 bar değerine kadar çelik ve pirinç nozullar ayrı ayrı RHVT'ne yerleştirilerek ölçümler yapılmıştır. RHVT'nden çıkan soğuk akış sıcaklığı ile sıcak akış sıcaklığı arasındaki fark alınarak sistemin performansı hesaplanmıştır. Ayrıca RHVT deney sonuçlarından elde edilen çelik ve pirinç malzemelerin sıcaklık farkını makine öğrenimi metotları kullanılarak performansları karşılaştırılmıştır. Çalışmada makine öğrenimi metotları olarak, Lineer Regresyon, Destek Vektör Makineleri, Gauss Süreç Regresyonu, Ağaç Toplulukları ve Regresyon Ağaçları kullanılmıştır. Analizler yapılırken makine öğrenimi metotları ile eğitim verisi tüm verinin %70'i, test verisi olarak tüm verinin %30'u kullanılmıştır. Eğitilen model kullanılarak test verisi ile tahminler karşılaştırılarak performans optimizasyonu yapılmış, elde edilen test tahmin sonuçlarının doğruluk değerlerinin ölçüsü olan determinasyon katsayısı R^2 hesaplanmıştır. Analizler neticesinde çelik malzemenin nozullarının performansı değerlendirildiğinde makine öğrenimi metotları içerisinde en iyi determinasyon katsayısı değeri 0,99 ile Gauss Süreç Regresyonu ile elde edilmiştir. Pirinç malzemenin nozullarının performansları karşılaştırıldığında ise en iyi determinasyon katsayısı değeri 0,99 ile Gauss Süreç Regresyonu ve Destek Vektör Makineleri ile elde edilmiştir.

Anahtar Kelimeler : Ranque-Hilsch Vorteks Tüp, Makine Öğrenimi, Isıtma, Soğutma

COUNTERFLOW RANQUE – COMPARISON OF PERFORMANCE WITH MACHINE LEARNING METHODS USING STEEL AND BRASS NOZZLES IN HILSCH VORTEX TUBE

ABSTRACT

Ranque-Hilsch Vortex Tube (RHVT) are systems that can cool and heat at the same time, have no moving parts other than the control part, and can work with different pressure fluids. In the

experimental study, the air was used as a fluid at different pressures using RHVT and five different (2,3,4,5,6) nozzles made of steel and brass materials. In the experiments, the pressure values were initially started at 1.5 bar, and the measurements were made by placing the steel and brass nozzles separately on the RHVT up to 7 bar at every 0.5 bar intervals. The system's performance was calculated by taking the difference between the cold flow temperature from the RHVT and the hot flow temperature. In addition, the temperature difference of steel and brass materials obtained from the RHVT test results was compared using machine learning methods. Linear Regression, Support Vector Machines, Gaussian Process Regression, Ensembles of Trees and Regression Trees were used as machine learning methods in the study. While performing the analyses, 70% of all data for training data with machine learning methods and 30% as test data were used. Performance optimization was made by comparing the test data with the predictions using the trained model, and the coefficient of determination R^2 , which is the measure of the accuracy values of the test prediction results obtained, was calculated. When the performance of the nozzles of the steel material was evaluated as a result of the analyses, the best coefficient of determination value among the machine learning methods was obtained with the Gaussian Process Regression of 0.99. When the performance of the nozzles of the brass material is compared, the best coefficient of determination value of 0.99 was obtained with Gaussian Process Regression and Support Vector Machines.

Keywords: Ranque-Hilsch Vortex Tube, Machine Learning, Heating, Cooling

ARTIFICIAL NEURAL NETWORK BASED MODELING OF EVAPORATION LOSSES IN RESERVOIRS

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Abstract:

An Artificial Neural Network based modeling technique has been used to study the influence of different combinations of meteorological parameters on evaporation from a reservoir. The data set used is taken from an earlier reported study. Several input combination were tried so as to find out the importance of different input parameters in predicting the evaporation. The prediction accuracy of Artificial Neural Network has also been compared with the accuracy of linear regression for predicting evaporation. The comparison demonstrated superior performance of Artificial Neural Network over linear regression approach. The findings of the study also revealed the requirement of all input parameters considered together, instead of individual parameters taken one at a time as reported in earlier studies, in predicting the evaporation. The highest correlation coefficient (0.960) along with lowest root mean square error (0.865) was obtained with the input combination of air temperature, wind speed, sunshine hours and mean relative humidity. A graph between the actual and predicted values of evaporation suggests that most of the values lie within a scatter of $\pm 15\%$ with all input parameters. The findings of this study suggest the usefulness of ANN technique in predicting the evaporation losses from reservoirs.

Keywords: Artificial neural network, evaporation losses, multiple linear regression, modeling.

OXYGEN TRANSFER BY MULTIPLE INCLINED PLUNGING WATER JETS

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Abstract:

There has been a growing interest in the oxygenation by plunging water jets in the last few years due to their inherent advantages, like energy-efficient, low operation cost, etc. Though a lot of work has been reported on the oxygen-transfer by single plunging water jets but very few studies have been carried out using multiple plunging jets. In this paper, volumetric oxygen-transfer coefficient and oxygen-transfer efficiency has been studied experimentally for multiple inclined plunging jets (having jet plunge angle of 60°) in a pool of water for different configurations, in terms of varying number of jets and jet diameters. This research suggests that the volumetric oxygen-transfer coefficient and oxygen transfer efficiency of the multiple inclined plunging jets for air-water system are significantly higher than those of a single vertical as well as inclined plunging jet for same flow area and other similar conditions. The study also reveals that the oxygen-transfer increase with increase in number of multiple jets under similar conditions, which will be most advantageous and energy-efficient in practical situations when large volumes of wastewaters are to be treated. A relationship between volumetric oxygen-transfer coefficient and jet parameters is also proposed. The suggested relationship predicts the volumetric oxygen-transfer coefficient for multiple inclined plunging jet(s) within a scatter of ± 15 percent. The relationship will be quite useful in scale-up and in deciding optimum configuration of multiple inclined plunging jet aeration system.

Keywords: Multiple inclined plunging jets, jet plunge angle, volumetric oxygen-transfer coefficient, oxygen-transfer efficiency.

OPTIMIZATION OF THE CHARACTERISTIC STRAIGHT LINE METHOD BY A “BEST ESTIMATE“ OF OBSERVED, NORMAL ORTHOMETRIC ELEVATION DIFFERENCES

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Abstract:

In this paper, to optimize the “Characteristic Straight Line Method” which is used in the soil displacement analysis, a “best estimate” of the geodetic leveling observations has been achieved by taking in account the concept of 'Height systems'. This concept has been discussed in detail and consequently the concept of “height”. In landslides dynamic analysis, the soil is considered as a mosaic of rigid blocks. The soil displacement has been monitored and analyzed by using the “Characteristic Straight Line Method”. Its characteristic components have been defined constructed from a “best estimate” of the topometric observations. In the measurement of elevation differences, we have used the most modern leveling equipment available. Observational procedures have also been designed to provide the most effective method to acquire data. In addition systematic errors which cannot be sufficiently controlled by instrumentation or observational techniques are minimized by applying appropriate corrections to the observed data: the level collimation correction minimizes the error caused by nonhorizontality of the leveling instrument's line of sight for unequal sight lengths, the refraction correction is modeled to minimize the refraction error caused by temperature (density) variation of air strata, the rod temperature correction accounts for variation in the length of the leveling rod's Invar/LO-VAR® strip which results from temperature changes, the rod scale correction ensures a uniform scale which conforms to the international length standard and the introduction of the concept of the 'Height systems' where all types of height (orthometric, dynamic, normal, gravity correction, and equipotential surface) have been investigated. The “Characteristic Straight Line Method” is slightly more convenient than the “Characteristic Circle Method”. It permits to evaluate a displacement of very small magnitude even when the displacement is of an infinitesimal quantity. The inclination of the landslide is given by the inverse of the distance reference point O to the “Characteristic Straight Line”. Its direction is given by the bearing of the normal directed from point O to the Characteristic Straight Line (Fig..6). A “best estimate” of the topometric observations was used to measure the elevation of points carefully selected, before and after the deformation. Gross errors have been eliminated by statistical analyses and by comparing the heights within local neighborhoods. The results of a test using an area where very interesting land surface deformation occurs are reported. Monitoring with different options and qualitative comparison of results based on a sufficient number of check points are presented.

Keywords: Characteristic straight line method, dynamic height, landslides, orthometric height, systematic errors.

PERFORMANCE ANALYSIS OF LOAD BALANCING ALGORITHMS

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Abstract:

Load balancing is the process of improving the performance of a parallel and distributed system through a redistribution of load among the processors [1] [5]. In this paper we present the performance analysis of various load balancing algorithms based on different parameters, considering two typical load balancing approaches static and dynamic. The analysis indicates that static and dynamic both types of algorithm can have advancements as well as weaknesses over each other. Deciding type of algorithm to be implemented will be based on type of parallel applications to solve. The main purpose of this paper is to help in design of new algorithms in future by studying the behavior of various existing algorithms.

Keywords: Load balancing (LB), workload, distributed systems, Static Load balancing, Dynamic Load Balancing

PHOTOCATALYTIC DETOXIFICATION METHOD FOR ZERO EFFLUENT DISCHARGE IN DAIRY INDUSTRY: EFFECT OF OPERATIONAL PARAMETERS

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Abstract:

Laboratory experiments have been performed to investigate photocatalytic detoxification by using TiO₂ photocatalyst for treating dairy effluent. Various operational parameters such as catalyst concentration, initial concentration, angle of tilt of solar flat plate reactor and flow rate were investigated. Results indicated that the photocatalytic detoxification process can efficiently treat dairy effluent. Experimental runs with dairy wastewater can be used to identify the optimum operational parameters to perform wastewater degradation on large scale for recycling purpose. Also effect of two different types of reactors on degradation process was analyzed.

Keywords: Photocatalytic detoxification, TiO₂ photocatalyst, solar flat plate reactor, Zero effluent discharge.

APPLICATION OF WAVELET NEURAL NETWORKS IN OPTIMIZATION OF SKELETAL BUILDINGS UNDER FREQUENCY CONSTRAINTS

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Abstract:

The main goal of the present work is to decrease the computational burden for optimum design of steel frames with frequency constraints using a new type of neural networks called Wavelet Neural Network. It is contested to train a suitable neural network for frequency approximation work as the analysis program. The combination of wavelet theory and Neural Networks (NN) has lead to the development of wavelet neural networks. Wavelet neural networks are feed-forward networks using wavelet as activation function. Wavelets are mathematical functions within suitable inner parameters, which help them to approximate arbitrary functions. WNN was used to predict the frequency of the structures. In WNN a RAational function with Second order Poles (RASP) wavelet was used as a transfer function. It is shown that the convergence speed was faster than other neural networks. Also comparisons of WNN with the embedded Artificial Neural Network (ANN) and with approximate techniques and also with analytical solutions are available in the literature.

Keywords: Weight Minimization, Frequency Constraints, Steel Frames, ANN, WNN, RASP Function.

MODELING OF REINFORCEMENT IN CONCRETE BEAMS USING MACHINE LEARNING TOOLS

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Abstract:

The paper discusses the results obtained to predict reinforcement in singly reinforced beam using Neural Net (NN), Support Vector Machines (SVM-s) and Tree Based Models. Major advantage of SVM-s over NN is of minimizing a bound on the generalization error of model rather than minimizing a bound on mean square error over the data set as done in NN. Tree Based approach divides the problem into a small number of sub problems to reach at a conclusion. Number of data was created for different parameters of beam to calculate the reinforcement using limit state method for creation of models and validation. The results from this study suggest a remarkably good performance of tree based and SVM-s models. Further, this study found that these two techniques work well and even better than Neural Network methods. A comparison of predicted values with actual values suggests a very good correlation coefficient with all four techniques.

Keywords: Linear Regression, M5 Model Tree, Neural Network, Support Vector Machines.

PUBLIC TRANSPORT REFORM IN INDONESIA, A CASE STUDY IN THE CITY OF YOGYAKARTA

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Abstract:

The provision of urban public transport in Indonesia is not free of problems. Some of the problems include: an overall lack of capacity, lack of quality and choice, severe traffic congestions and insufficient fund to renew and repair vehicles. Generally, the comfort and quality of the city bus is poor, and many of the vehicles are dilapidated and dirty. Surveys were carried out in the city of Yogyakarta, by counting city bus vehicles and occupancies, interviewing the bus passengers, drivers and institutional staffs, who involve in public transport management. This paper will then analyze the possible plan to develop the public transport system to become more attractive and to improve the public transport management. The short, medium and long term plans are analyzed, to find the best solutions. Some constraints such as social impacts and financial impact are also taken into accounts.

Keywords: City bus, management, public transport.

THE POTENTIAL USE OF NANOFILTERS TO SUPPLY POTABLE WATER IN PERSIAN GULF AND OMAN SEA WATERSHED BASIN

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Water University of Tehran

Abstract:

In a world worried about water resources with the shadow of drought and famine looming all around, the quality of water is as important as its quantity. The source of all concerns is the constant reduction of per capita quality water for different uses. Iran With an average annual precipitation of 250 mm compared to the 800 mm world average, Iran is considered a water scarce country and the disparity in the rainfall distribution, the limitations of renewable resources and the population concentration in the margins of desert and water scarce areas have intensified the problem. The shortage of per capita renewable freshwater and its poor quality in large areas of the country, which have saline, brackish or hard water resources, and the profusion of natural and artificial pollutant have caused the deterioration of water quality. Among methods of treatment and use of these waters one can refer to the application of membrane technologies, which have come into focus in recent years due to their great advantages. This process is quite efficient in eliminating multi-capacity ions; and due to the possibilities of production at different capacities, application as treatment process in points of use, and the need for less energy in comparison to Reverse Osmosis processes, it can revolutionize the water and wastewater sector in years to come. The article studied the different capacities of water resources in the Persian Gulf and Oman Sea watershed basins, and processes the possibility of using nanofiltration process to treat brackish and non-conventional waters in these basins.

Keywords: Membrane processes, saline waters, brackish waters, hard waters, zoning water quality in the Persian Gulf and the Oman Sea Watershed area, nanofiltration.

A CRITICAL REVIEW OF THE ADEQUACY OF EIA REPORTS-EVIDENCE FROM PAKISTAN

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Abstract:

The preparation of good-quality Environmental Impact Assessment (EIA) reports contribute to enhancing overall effectiveness of EIA. This component of the EIA process becomes more important in situation where public participation is weak and there is lack of expertise on the part of the competent authority. In Pakistan, EIA became mandatory for every project likely to cause adverse environmental impacts from July 1994. The competent authority also formulated guidelines for preparation and review of EIA reports in 1997. However, EIA is yet to prove as a successful decision support tool to help in environmental protection. One of the several reasons of this ineffectiveness is the generally poor quality of EIA reports. This paper critically reviews EIA reports of some randomly selected projects. Interviews of EIA consultants, project proponents and concerned government officials have also been conducted to underpin the root causes of poor quality of EIA reports. The analysis reveals several inadequacies particularly in areas relating to identification, evaluation and mitigation of key impacts and consideration of alternatives. The paper identifies some opportunities and suggests measures for improving the quality of EIA reports and hence making EIA an effective tool to help in environmental protection.

Keywords: Environmental Impact Assessment, EIA Guidelines, EIA Reports, Pakistan.

GROUNDWATER QUALITY AND THE SOURCES OF POLLUTION IN BAGHAN WATERSHED, IRAN

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Abstract:

The protection of groundwater resources is the great important many semiarid and arid environments. Baghan watershed is located in the north of Kangan in the Boshehr province in Iran. The groundwater resources have a vital role in supplying agricultural, drinking, domestic and industrial water demand in Baghan watershed. For our investigation into the water quality we collected 30 samples to chemical and physical analysis. The result showed the marl and evaporation deposits that contain anhydrite and gypsum is the main source of groundwater pollution, and one part of the groundwater was polluted by oil and gas industrial. Another part of the groundwater was contaminated by urban waste water. The electrical conductivity and cations and anions increased around of towns and gas refinery. Although the negative impact of untreated domestic wastewater is relatively low but the results showed strongly the negative impact of wastewater refinery is very considerable. This negative impact increased in downstream due to shallow aquifer. Additionally, the agents that adversely affect the quality of groundwater come from a variety of sources, including geology, domestic wastewater and the Jam refinery in Baghan watershed.

Keywords: Baghan watershed, Chemical quality, Groundwater, Pollution sources.

ASSESSMENT OF POLLUTION REDUCTION

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Abstract:

Environmental investments, including ecological projects, relating to the protection of atmosphere are today a need. However, investing in the environment should be based on rational management rules. This comes across a problem of selecting a method to assess substances reduced during projects. Therefore, a method allowing for the assessment of decision rationality has to be found. The purpose of this article is to present and systematise pollution reduction assessment methods and illustrate theoretical analyses with empirical data. Empirical results confirm theoretical considerations, which proved that the only method for judging pollution reduction, free of apparent disadvantages, is the Eco 99-ratio method. To make decisions on environmental projects, financing institutions should take into account a rationality rule. Therefore the Eco 99-ratio method could be applied to make decisions relating to environmental investments in the area of air protection.

Keywords: Assessment of pollution reduction, costs of environmental protection, efficiency of environmental investments.

**ESTIMATION METHOD FOR THE CONSTRUCTION OF HYDROGEN SOCIETY
WITH VARIOUS BIOMASS RESOURCES IN JAPAN-PROJECT OF COST
REDUCTIONS IN BIOMASS TRANSPORT AND FEASIBILITY FOR HYDROGEN
STATION WITH BIOMASS-**

Masaki Tajima, Kenji Imou, Shinya Yokoyama

The University of Tokyo

Abstract:

It was determined that woody biomass and livestock excreta can be utilized as hydrogen resources and hydrogen produced from such sources can be used to fill fuel cell vehicles (FCVs) at hydrogen stations. It was shown that the biomass transport costs for hydrogen production may be reduced the costs for co-generation. In the Tokyo Metropolitan Area, there are only a few sites capable of producing hydrogen from woody biomass in amounts greater than 200 m³/h-the scale required for a hydrogen station to be operationally practical. However, in the case of livestock excreta, it was shown that 15% of the municipalities in this area are capable of securing sufficient biomass to be operationally practical for hydrogen production. The differences in feasibility of practical operation depend on the type of biomass.

Keywords: Biomass Resources, Hydrogen Production, Hydrogen Station, Transport Cost.

CELLULOLYTIC MICROBIAL ACTIVATOR INFLUENCE ON DECOMPOSITION OF RUBBER FACTORY WASTE COMPOSTING

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Abstract:

In this research, an aerobic composting method is studied to reuse organic waste from rubber factory waste as soil fertilizer and to study the effect of cellulolytic microbial activator (CMA) as the activator in the rubber factory waste composting. The performance of the composting process was monitored as a function of carbon and organic matter decomposition rate, temperature and moisture content. The results indicate that the rubber factory waste is best composted with water hyacinth and sludge than composted alone. In addition, the CMA is more affective when mixed with the rubber factory waste, water hyacinth and sludge since a good fertilizer is achieved. When adding CMA into the rubber factory waste composted alone, the finished product does not achieve a standard of fertilizer, especially the C/N ratio. Finally, the finished products of composting rubber factory waste and water hyacinth and sludge (both CMA and without CMA), can be an environmental friendly alternative to solve the disposal problems of rubber factory waste. Since the C/N ratio, pH, moisture content, temperature, and nutrients of the finished products are acceptable for agriculture use.

Keywords: composting, rubber waste, C/N ratio, sludge, cellulolytic microbial activator

A STUDY ON ENERGY-EFFICIENT TEMPERATURE CONTROL

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Abstract:

The top-heavy demographic of low birth-rate and longer lifespan is a growing social problem, and one of its expected effects will be a shortage of young workers and a growing reliance on a workforce of middle-aged and older people. However, the environment of today's industrial workplace is not particularly suited to middle-aged and older workers, one notable problem being temperature control. Higher temperatures can cause health problems such as heat stroke, and the number of cases increases sharply in people over 65. Moreover, in conditions above 33°C, older people can develop circulatory system disorders, and also have a higher chance of suffering a fatal heart attack. We therefore propose a new method for controlling temperature in the indoor workplace. In this study two different verification experiments were conducted, with the proposed temperature control method being tested in cargo containers and conventional houses. The method's effectiveness was apparent in measurements of temperature and electricity consumption

Keywords: CO2 reduction, Energy saving, Temperature control

VALUING ENVIRONMENTAL IMPACT OF AIR POLLUTION IN MOSCOW WITH HEDONIC PRICES

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Abstract:

The main purpose of this research is the calculation of implicit prices of the environmental level of air quality in the city of Moscow on the basis of housing property prices. The database used contains records of approximately 20 thousand apartments and has been provided by a leading real estate agency operating in Russia. The explanatory variables include physical characteristics of the houses, environmental (industry emissions), neighbourhood sociodemographic and geographic data: GPS coordinates of each house. The hedonic regression results for ecological variables show «negative» prices while increasing the level of air contamination from such substances as carbon monoxide, nitrogen dioxide, sulphur dioxide, and particles (CO, NO₂, SO₂, TSP). The marginal willingness to pay for higher environmental quality is presented for linear and log-log models.

Keywords: Air pollution, environment, hedonic prices, real estate, willingness to pay.

WATER POLLUTION IN SOSHANGUVE ENVIRONS OF SOUTH AFRICA

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Abstract:

Surface water pollution is one of the serious environmental problems in rural areas of South Africa due to discharge of household waste into the streams, turning them into open sewers. In this study, samples of water were collected from a stream in Soshanguve and analysed. The result showed that pollution in the area was caused by man and its activities. The water quality in the area was found to have deteriorated significantly after water runoff from farms and household wastes. The result shows, fertilizer runoff contributes 50% of the pollution while pesticides and sediments contribute up to 10% respectively in the streams, while household waste contributes up to 30%. This study gives an outline of the sources of water pollution in the area and provides a process of creating a clean and unpolluted environment for Soshanguve community in Pretoria north in order to achieve the 7th aim of the millennium development goals by 2015, which is ensuring environmental sustainability.

Keywords: Fertilizer, Household waste, Pollution, Roughing filters.

INFERRING THE DYNAMICS OF “HIDDEN“ NEURONS FROM ELECTROPHYSIOLOGICAL RECORDINGS

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Abstract:

Statistical analysis of electrophysiological recordings obtained under, e.g. tactile, stimulation frequently suggests participation in the network dynamics of experimentally unobserved “hidden” neurons. Such interneurons making synapses to experimentally recorded neurons may strongly alter their dynamical responses to the stimuli. We propose a mathematical method that formalizes this possibility and provides an algorithm for inferring on the presence and dynamics of hidden neurons based on fitting of the experimental data to spike trains generated by the network model. The model makes use of Integrate and Fire neurons “chemically” coupled through exponentially decaying synaptic currents. We test the method on simulated data and also provide an example of its application to the experimental recording from the Dorsal Column Nuclei neurons of the rat under tactile stimulation of a hind limb.

Keywords: Integrate and fire neuron, neural network models, spike trains.

SORTING PRIMITIVES AND GENOME REARRANGEMENT IN BIOINFORMATICS: A UNIFIED PERSPECTIVE

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Abstract:

Bioinformatics and computational biology involve the use of techniques including applied mathematics, informatics, statistics, computer science, artificial intelligence, chemistry, and biochemistry to solve biological problems usually on the molecular level. Research in computational biology often overlaps with systems biology. Major research efforts in the field include sequence alignment, gene finding, genome assembly, protein structure alignment, protein structure prediction, prediction of gene expression and protein-protein interactions, and the modeling of evolution. Various global rearrangements of permutations, such as reversals and transpositions, have recently become of interest because of their applications in computational molecular biology. A reversal is an operation that reverses the order of a substring of a permutation. A transposition is an operation that swaps two adjacent substrings of a permutation. The problem of determining the smallest number of reversals required to transform a given permutation into the identity permutation is called sorting by reversals. Similar problems can be defined for transpositions and other global rearrangements. In this work we perform a study about some genome rearrangement primitives. We show how a genome is modelled by a permutation, introduce some of the existing primitives and the lower and upper bounds on them. We then provide a comparison of the introduced primitives.

Keywords: Sorting Primitives, Genome Rearrangements, Transpositions, Block Interchanges, Strip Exchanges.

DETECTING REMOTE PROTEIN EVOLUTIONARY RELATIONSHIPS VIA STRING SCORING METHOD

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Abstract:

The amount of the information being churned out by the field of biology has jumped manifold and now requires the extensive use of computer techniques for the management of this information. The predominance of biological information such as protein sequence similarity in the biological information sea is key information for detecting protein evolutionary relationship. Protein sequence similarity typically implies homology, which in turn may imply structural and functional similarities. In this work, we propose, a learning method for detecting remote protein homology. The proposed method uses a transformation that converts protein sequence into fixed-dimensional representative feature vectors. Each feature vector records the sensitivity of a protein sequence to a set of amino acids substrings generated from the protein sequences of interest. These features are then used in conjunction with support vector machines for the detection of the protein remote homology. The proposed method is tested and evaluated on two different benchmark protein datasets and it-s able to deliver improvements over most of the existing homology detection methods.

Keywords: Protein homology detection; support vectormachine; string kernel.

COEFFICIENT OF PARENTAGE FOR CROP HYBRIDIZATION

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Abstract:

Hybridization refers to the crossing breeding of two plants. Coefficient of Parentage (COP) is used by the plant breeders to determine the genetic diversity across various varieties so as to incorporate the useful characters of the two varieties to develop a new crop variety with particular useful characters. Genetic Diversity is the prerequisite for any cultivar development program. Genetic Diversity depends upon the pedigree information of the varieties based on particular levels. Pedigree refers to the parents of a particular variety at various levels. This paper discusses the searching and analyses of different possible pairs of varieties selected on the basis of morphological characters, Climatic conditions and Nutrients so as to obtain the most optimal pair that can produce the required crossbreed variety. An algorithm was developed to determine the coefficient of parentage (COP) between the selected wheat varieties. Dummy values were used wherever actual data was not available.

Keywords: Coefficient of Parentage, Morphological characters, Pedigree, Genetic Diversity.

A MAXIMUM PARSIMONY MODEL TO RECONSTRUCT PHYLOGENETIC NETWORK IN HONEY BEE EVOLUTION

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Abstract:

Phylogenies ; The evolutionary histories of groups of species are one of the most widely used tools throughout the life sciences, as well as objects of research with in systematic, evolutionary biology. In every phylogenetic analysis reconstruction produces trees. These trees represent the evolutionary histories of many groups of organisms, bacteria due to horizontal gene transfer and plants due to process of hybridization. The process of gene transfer in bacteria and hybridization in plants lead to reticulate networks, therefore, the methods of constructing trees fail in constructing reticulate networks. In this paper a model has been employed to reconstruct phylogenetic network in honey bee. This network represents reticulate evolution in honey bee. The maximum parsimony approach has been used to obtain this reticulate network.

Keywords: Hybridization, HGT, Reticulate networks, Recombination, Species, Parsimony.

FIRST STUDIES OF THE INFLUENCE OF SINGLE GENE PERTURBATIONS ON THE INFERENCE OF GENETIC NETWORKS

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Abstract:

Inferring the network structure from time series data is a hard problem, especially if the time series is short and noisy. DNA microarray is a technology allowing to monitor the mRNA concentration of thousands of genes simultaneously that produces data of these characteristics. In this study we try to investigate the influence of the experimental design on the quality of the result. More precisely, we investigate the influence of two different types of random single gene perturbations on the inference of genetic networks from time series data. To obtain an objective quality measure for this influence we simulate gene expression values with a biologically plausible model of a known network structure. Within this framework we study the influence of single gene knock-outs in opposite to linearly controlled expression for single genes on the quality of the inferred network structure.

Keywords: Dynamic Bayesian networks, microarray data, structure learning, Markov chain Monte Carlo.

ATTRIBUTE SELECTION METHODS COMPARISON FOR CLASSIFICATION OF DIFFUSE LARGE B-CELL LYMPHOMA

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Abstract:

The most important subtype of non-Hodgkin-s lymphoma is the Diffuse Large B-Cell Lymphoma. Approximately 40% of the patients suffering from it respond well to therapy, whereas the remainder needs a more aggressive treatment, in order to better their chances of survival. Data Mining techniques have helped to identify the class of the lymphoma in an efficient manner. Despite that, thousands of genes should be processed to obtain the results. This paper presents a comparison of the use of various attribute selection methods aiming to reduce the number of genes to be searched, looking for a more effective procedure as a whole.

Keywords: Attribute selection, data mining.

THE EFFECT OF GUANIDINE HYDROCHLORIDE ON PHASE DIAGRAM OF PEG- PHOSPHATE AQUEOUS TWO-PHASE SYSTEM

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Abstract:

This report focus on phase behavior of polyethylene glycol (PEG)4000/ phosphate/ guanidine hydrochloride/ water system at different guanidine hydrochloride concentrations and pH. The binodal of the systems was displaced toward higher concentrations of the components with increasing guanidine hydrochloride concentrations. The partition coefficient of guanidine hydrochloride was near unity and increased with decreasing pH and increasing PEG/salt (%w/w) ratio.

Keywords: Aqueous two-phase system, guanidinehydrochloride, partition coefficient, phase diagram.

PALLADIUM-CATALYZED HYDRODECHLORINATION FOR WATER REMEDIATION: CATALYST DEACTIVATION AND REGENERATION

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Abstract:

Palladium-catalyzed hydrodechlorination is a promising alternative for the treatment of environmentally relevant water bodies, such as groundwater, contaminated with chlorinated organic compounds (COCs). In the aqueous phase hydrodechlorination of COCs, Pd-based catalysts were found to have a very high catalytic activity. However, the full utilization of the catalyst's potential is impeded by the sensitivity of the catalyst to poisoning and deactivation induced by reduced sulfur compounds (e.g. sulfides). Several regenerants have been tested before to recover the performance of sulfide-fouled Pd catalyst. But these only delivered partial success with respect to re-establishment of the catalyst activity. In this study, the deactivation behaviour of Pd/Al₂O₃ in the presence of sulfide was investigated. Subsequent to total deactivation the catalyst was regenerated in the aqueous phase using potassium permanganate. Under neutral pH condition, oxidative regeneration with permanganate delivered a slow recovery of catalyst activity. However, changing the pH of the bulk solution to acidic resulted in the complete recovery of catalyst activity within a regeneration time of about half an hour. These findings suggest the superiority of permanganate as regenerant in re-activating Pd/Al₂O₃ by oxidizing Pd-bound sulfide.

Keywords: Deactivation, hydrodechlorination, Pd catalyst, regeneration.

OPTICAL REFLECTANCE OF PURE AND DOPED TIN OXIDE: FROM THIN FILMS TO POLY-CRYSTALLINE SILICON/THIN FILM DEVICE

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Abstract:

Films of pure tin oxide SnO₂ and in presence of antimony atoms (SnO₂-Sb) deposited onto glass substrates have shown a sufficiently high energy gap to be transparent in the visible region, a high electrical mobility and a carrier concentration which displays a good electrical conductivity [1]. In this work, the effects of polycrystalline silicon substrate on the optical properties of pure and Sb doped tin oxide is investigated. We used the APCVD (atmospheric pressure chemical vapour deposition) technique, which is a low-cost and simple technique, under nitrogen ambient, for growing this material. A series of SnO₂ and SnO₂-Sb have been deposited onto polycrystalline silicon substrates with different contents of antimony atoms at the same conditions of deposition (substrate temperature, flow oxygen, duration and nitrogen atmosphere of the reactor). The effect of the substrate in terms of morphology and nonlinear optical properties, mainly the reflectance, was studied. The reflectance intensity of the device, compared to the reflectance of tin oxide films deposited directly on glass substrate, is clearly reduced on the overall wavelength range. It is obvious that the roughness of the poly-c silicon plays an important role by improving the reflectance and hence the optical parameters. A clear shift in the minimum of the reflectance upon doping level is observed. This minimum corresponds to strong free carrier absorption, resulting in different plasma frequency. This effect is followed by an increase in the reflectance depending of the antimony doping. Applying the extended Drude theory to the combining optical and electrical obtained results these effects are discussed.

Keywords: Doping, oxide, reflectance.

METHANE AND OTHER HYDROCARBON GAS EMISSIONS RESULTING FROM FLARING IN KUWAIT OILFIELDS

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Abstract:

Air pollution is a major environmental health problem, affecting developed and developing countries around the world. Increasing amounts of potentially harmful gases and particulate matter are being emitted into the atmosphere on a global scale, resulting in damage to human health and the environment. Petroleum-related air pollutants can have a wide variety of adverse environmental impacts. In the crude oil production sectors, there is a strong need for a thorough knowledge of gaseous emissions resulting from the flaring of associated gas of known composition on daily basis through combustion activities under several operating conditions. This can help in the control of gaseous emission from flares and thus in the protection of their immediate and distant surrounding against environmental degradation. The impacts of methane and non-methane hydrocarbons emissions from flaring activities at oil production facilities at Kuwait Oilfields have been assessed through a screening study using records of flaring operations taken at the gas and oil production sites, and by analyzing available meteorological and air quality data measured at stations located near anthropogenic sources. In the present study the Industrial Source Complex (ISCST3) Dispersion Model is used to calculate the ground level concentrations of methane and nonmethane hydrocarbons emitted due to flaring in all over Kuwait Oilfields. The simulation of real hourly air quality in and around oil production facilities in the State of Kuwait for the year 2006, inserting the respective source emission data into the ISCST3 software indicates that the levels of non-methane hydrocarbons from the flaring activities exceed the allowable ambient air standard set by Kuwait EPA. So, there is a strong need to address this acute problem to minimize the impact of methane and non-methane hydrocarbons released from flaring activities over the urban area of Kuwait.

Keywords: Kuwait Oilfields, ISCST3 model, flaring, Airpollution, Methane and Non-methane.

EQUILIBRIUM, KINETICS AND THERMODYNAMIC STUDIES FOR ADSORPTION OF Hg (II) ON PALM SHELL POWDER

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Abstract:

Palm shell obtained from coastal part of southern India was studied for the removal for the adsorption of Hg (II) ions. Batch adsorption experiments were carried out as a function of pH, concentration of Hg (II) ions, time, temperature and adsorbent dose. Maximum removal was seen in the range pH 4.0- pH 7.0. The palm shell powder used as adsorbent was characterized for its surface area, SEM, PXRD, FTIR, ion exchange capacity, moisture content, and bulk density, soluble content in water and acid and pH. The experimental results were analyzed using Langmuir I, II, III, IV and Freundlich adsorption isotherms. The batch sorption kinetics was studied for the first order reversible reaction, pseudo first order; pseudo second order reaction and the intra-particle diffusion reaction. The biomass was successfully used for removal Hg (II) from synthetic and industrial effluents and the technique appears industrially applicable and viable.

Keywords: Biosorbent, mercury removal, borassus flabellifer, isotherms, kinetics, palm shell.



STUDY OF KINETICS INCORPORATION OF AG WITH TCPP

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Abstract:

The Kinetics formation of labile Complex Ag (I) tetra (p-carboxyphenyl) porphyrin, was investigated at 25°C and I=0.1M (NaNO₃). By spectrophotometric titration, the composition ratio of the complex was established to be 2:1 (Ag : H₂TCPP). The equilibrium constant, K, was found to be log 10^{-6.53}. Binding of the first Ag (I) was found to be rate determining step with rate constant, $k_1 = 4.67 \times 10^2$. A plausible mechanism is discussed. We discuss theoretically why Ag(I)TCPP is unstable.

Keywords: Kinetics, Silver, TCPP, Sitting-atop, Theoretical study

INVESTIGATION OF THE ELECTRONIC PROPERTIES OF AU/METHYL-RED/AG SURFACE TYPE SCHOTTKY DIODE BY CURRENT-VOLTAGE METHOD

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Abstract:

In this paper, fabrication and study of electronic properties of Au/methyl-red/Ag surface type Schottky diode by current-voltage (I-V) method has been reported. The I-V characteristics of the Schottky diode showed the good rectifying behavior. The values of ideality factor n and barrier height b of Au/methyl-red/Ag Schottky diode were calculated from the semi-log I-V characteristics and by using the Cheung functions. From semi-log current-voltage characteristics the values of n and b were found 1.93 and 0.254 eV, respectively, while by using Cheung functions their values were calculated 1.89 and 0.26 eV, respectively. The effect of series resistance was also analyzed by Cheung functions. The series resistance R_S values were determined from $dV/d(\ln I)-I$ and $H(I)-I$ graphs and were found to be 1.1 k and 1.3 k, respectively.

Keywords: Surface type Schottky diodes, Methyl-red, Currentvoltage method

SEPARATION OF VITAMIN B2 AND B12 BY IMPREGNATED HPTLC PLATES WITH BORIC ACID

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Abstract:

A high performance thin layer chromatography system (HPTLC) for the separation of vitamin B2 and B12 has been developed. The separation was successfully using a solvent system of methanol, water, ammonia 7.3.1 (V/V) as mobile phase on HPTLC plates impregnated with boric acid. The effect of other mobile phases on the separation of vitamins was also examined. The method is based on different behavior of investigated compounds in impregnated TLC plates with different amount of boric acid. The R_f values of vitamin B2 and B12 are considered on non impregnated and impregnated silica gel HPTLC plate with boric acid. The effect of boric acid in the mobile phase and on HPTLC plates on the R_F values of the vitamins has also been studied.

Keywords: High performance thin layer chromatography, HPTLC, Vitamin B2, Vitamin B12, Separation.

EFFECT OF VALVE PRESSURE DROP IN EXERGY ANALYSIS OF C2+ RECOVERY PLANTS REFRIGERATION CYCLES

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Abstract:

This paper provides an exergy analysis of the multistage refrigeration cycle used for C2+ recovery plant. The behavior of an industrial refrigeration cycle with refrigerant propane has been investigated by the exergy method. A computational model based on the exergy analysis is presented for the investigation of the effects of the valves on the exergy losses, the second law of efficiency, and the coefficient of performance (COP) of a vapor compression refrigeration cycle. The equations of exergy destruction and exergetic efficiency for the main cycle components such as evaporators, condensers, compressors, and expansion valves are developed. The relations for the total exergy destruction in the cycle and the cycle exergetic efficiency are obtained. An ethane recovery unit with its refrigeration cycle has been simulated to prepare the exergy analysis. Using a typical actual work input value; the exergetic efficiency of the refrigeration cycle is determined to be 39.90% indicating a great potential for improvements. The simulation results reveal that the exergetic efficiencies of the heat exchanger and expansion sections get the lowest rank among the other compartments of refrigeration cycle. Refrigeration calculations have been carried out through the analysis of T–S and P–H diagrams where coefficient of performance (COP) was obtained as 1.85. The novelty of this article includes the effect and sensitivity analysis of molar flow, pressure drops and temperature on the exergy efficiency and coefficient of performance of the cycle.

Keywords: exergy; Valve; CRP; refrigeration cycle; propane refrigerant; C2+ Recovery; Ethane Recovery;.

OSMOTIC DEHYDRATION OF BEETROOT IN SALT SOLUTION: OPTIMIZATION OF PARAMETERS THROUGH STATISTICAL EXPERIMENTAL DESIGN

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Abstract:

Response surface methodology was used for quantitative investigation of water and solids transfer during osmotic dehydration of beetroot in aqueous solution of salt. Effects of temperature (25 – 45°C), processing time (30–150 min), salt concentration (5–25%, w/w) and solution to sample ratio (5:1 – 25:1) on osmotic dehydration of beetroot were estimated. Quadratic regression equations describing the effects of these factors on the water loss and solids gain were developed. It was found that effects of temperature and salt concentrations were more significant on the water loss than the effects of processing time and solution to sample ratio. As for solids gain processing time and salt concentration were the most significant factors. The osmotic dehydration process was optimized for water loss, solute gain, and weight reduction. The optimum conditions were found to be: temperature – 35°C, processing time – 90 min, salt concentration – 14.31% and solution to sample ratio 8.5:1. At these optimum values, water loss, solid gain and weight reduction were found to be 30.86 (g/100 g initial sample), 9.43 (g/100 g initial sample) and 21.43 (g/100 g initial sample) respectively.

Keywords: Optimization, Osmotic dehydration, Beetroot, salt solution, response surface methodology

APPLICATION OF FEED FORWARD NEURAL NETWORKS IN MODELING AND CONTROL OF A FED-BATCH CRYSTALLIZATION PROCESS

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Abstract:

This paper is focused on issues of nonlinear dynamic process modeling and model-based predictive control of a fed-batch sugar crystallization process applying the concept of artificial neural networks as computational tools. The control objective is to force the operation into following optimal supersaturation trajectory. It is achieved by manipulating the feed flow rate of sugar liquor/syrup, considered as the control input. A feed forward neural network (FFNN) model of the process is first built as part of the controller structure to predict the process response over a specified (prediction) horizon. The predictions are supplied to an optimization procedure to determine the values of the control action over a specified (control) horizon that minimizes a predefined performance index. The control task is rather challenging due to the strong nonlinearity of the process dynamics and variations in the crystallization kinetics. However, the simulation results demonstrated smooth behavior of the control actions and satisfactory reference tracking.

Keywords: Feed forward neural network, process modelling, model predictive control, crystallization process.

FINITE ELEMENT PREDICTION AND EXPERIMENTAL VERIFICATION OF THE FAILURE PATTERN OF PROXIMAL FEMUR USING QUANTITATIVE COMPUTED TOMOGRAPHY IMAGES

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Abstract:

This paper presents a novel method for prediction of the mechanical behavior of proximal femur using the general framework of the quantitative computed tomography (QCT)-based finite element Analysis (FEA). A systematic imaging and modeling procedure was developed for reliable correspondence between the QCT-based FEA and the in-vitro mechanical testing. A speciallydesigned holding frame was used to define and maintain a unique geometrical reference system during the analysis and testing. The QCT images were directly converted into voxel-based 3D finite element models for linear and nonlinear analyses. The equivalent plastic strain and the strain energy density measures were used to identify the critical elements and predict the failure patterns. The samples were destructively tested using a specially-designed gripping fixture (with five degrees of freedom) mounted within a universal mechanical testing machine. Very good agreements were found between the experimental and the predicted failure patterns and the associated load levels.

Keywords: Bone, Osteoporosis, Noninvasive methods, Failure Analysis

UNIFORM HEATING DURING FOCUSED ULTRASOUND THERMAL THERAPY

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Abstract:

The focal spot of a high intensity focused ultrasound transducer is small. To heat a large target volume, multiple treatment spots are required. If the power of each treatment spot is fixed, it could results in insufficient heating of initial spots and over-heating of later ones, which is caused by the thermal diffusion. Hence, to produce a uniform heated volume, the delivered energy of each treatment spot should be properly adjusted. In this study, we proposed an iterative, extrapolation technique to adjust the required ultrasound energy of each treatment spot. Three different scanning pathways were used to evaluate the performance of this technique. Results indicate that by using the proposed technique, uniform heating volume could be obtained.

Keywords: focused ultrasound, thermal therapy, uniform eating, iteration, extrapolation, scan

BASIC RESEARCH FOR DISTINGUISHING SMALL RETINAL HEMORRHAGES FROM DUST ARTIFACT BY USING HUE, LIGHTNESS, AND SATURATION COLOR SPACE

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Abstract:

To distinguish small retinal hemorrhages in early diabetic retinopathy from dust artifacts, we analyzed hue, lightness, and saturation (HLS) color spaces. The fundus of 5 patients with diabetic retinopathy was photographed. For the initial experiment, we placed 4 different colored papers on the ceiling of a darkroom. Using each color, 10 fragments of house dust particles on a magnifier were photographed. The colored papers were removed, and 3 different colored light bulbs were suspended from the ceiling. Ten fragments of house dust particles on the camera-s object lens were photographed. We then constructed an experimental device that can photograph artificial eyes. Five fragments of house dust particles under the ocher fundus of the artificial eye were photographed. On analyzing HLS color space of the dust artifact, lightness and saturation were found to be highly sensitive. However, hue was not highly sensitive.

Keywords: Dust artifact, HLS color space, Retinal hemorrhage, and Diabetic retinopathy

RIGID AND NON-RIGID REGISTRATION OF BINARY OBJECTS USING THE WEIGHTED RATIO IMAGE

Panos Kotsas, Tony Dodd

Abstract:

This paper presents the application of a signal intensity independent similarity criterion for rigid and non-rigid body registration of binary objects. The criterion is defined as the weighted ratio image of two images. The ratio is computed on a voxel per voxel basis and weighting is performed by setting the ratios between signal and background voxels to a standard high value. The mean squared value of the weighted ratio is computed over the union of the signal areas of the two images and it is minimized using the Chebyshev polynomial approximation.

Keywords: rigid and non-rigid body registration, binary objects

AN OVERVIEW OF THE APPLICATION OF FUZZY INFERENCE SYSTEM FOR THE AUTOMATION OF BREAST CANCER GRADING WITH SPECTRAL DATA

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Abstract:

Breast cancer is one of the most frequent occurring cancers in women throughout the world including U.K. The grading of this cancer plays a vital role in the prognosis of the disease. In this paper we present an overview of the use of advanced computational method of fuzzy inference system as a tool for the automation of breast cancer grading. A new spectral data set obtained from Fourier Transform Infrared Spectroscopy (FTIR) of cancer patients has been used for this study. The future work outlines the potential areas of fuzzy systems that can be used for the automation of breast cancer grading.

Keywords: Breast cancer, FTIR, fuzzy inference system, principal component analysis

THE ROLE PLAYED BY SWIFT CHANGE OF THE STABILITY CHARACTERISTIC OF MEAN FLOW IN BYPASS TRANSITION

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Abstract:

The scenario of bypass transition is generally described as follows: the low-frequency disturbances in the free-stream may generate long stream-wise streaks in the boundary layer, which later may trigger secondary instability, leading to rapid increase of high-frequency disturbances. Then possibly turbulent spots emerge, and through their merging, lead to fully developed turbulence. This description, however, is insufficient in the sense that it does not provide the inherent mechanism of transition that during the transition, a large number of waves with different frequencies and wave numbers appear almost simultaneously, producing sufficiently large Reynolds stress, so the mean flow profile can change rapidly from laminar to turbulent. In this paper, such a mechanism will be figured out from analyzing DNS data of transition.

Keywords: boundary layer, breakdown, bypass transition, stability, streak.

SMARTPHONES FOR IN-HOME DIAGNOSTICS IN TELEMEDICINE

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Abstract:

Many contemporary telemedical applications rely on regular consultations over the phone or video conferencing which consumes valuable resources such as the time of the doctors. Some applications or treatments allow automated diagnostics on the patient side which only notifies the doctors in case a significant worsening of patient's condition is measured. Such programs can save valuable resources but an important implementation issue is how to ensure effective and cheap diagnostics on the patient side. First, specific diagnostic devices on patient side are expensive and second, they need to be user-friendly to encourage patient's cooperation and reduce errors in usage which may cause noise in diagnostic data. This article proposes the use of modern smartphones and various build-in or attachable sensors as universal diagnostic devices applicable in a wider range of telemedical programs and demonstrates their application on a case-study – a program for schizophrenic relapse prevention.

Keywords: Smartphones, Actigraphy, Telemedicine, In-home Diagnostics

IMPULSE NOISE REDUCTION IN BRAIN MAGNETIC RESONANCE IMAGING USING FUZZY FILTERS

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Abstract:

Noise contamination in a magnetic resonance (MR) image could occur during acquisition, storage, and transmission in which effective filtering is required to avoid repeating the MR procedure. In this paper, an iterative asymmetrical triangle fuzzy filter with moving average center (ATMAVi filter) is used to reduce different levels of salt and pepper noise in a brain MR image. Besides visual inspection on filtered images, the mean squared error (MSE) is used as an objective measurement. When compared with the median filter, simulation results indicate that the ATMAVi filter is effective especially for filtering a higher level noise (such as noise density = 0.45) using a smaller window size (such as 3x3) when operated iteratively or using a larger window size (such as 5x5) when operated non-iteratively.

Keywords: Brain images, Fuzzy filters, Magnetic resonance imaging, Salt and pepper noise reduction.

**SENSITIVITY COMPARISON BETWEEN RAPID IMMUNO-
CHROMATOGRAPHIC DEVICE TEST AND ELISA IN DETECTION AND SERO-
PREVALENCE OF HBSAG AND ANTI-HCV ANTIBODIES IN APPARENTLY
HEALTHY BLOOD DONORS OF LAHORE, PAKISTAN**

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Abstract:

Hepatitis B and hepatitis C are among the most significant hepatic infections all around the world that may lead to hepatocellular carcinoma. This study is first time performed at the blood transfusion centre of Omar hospital, Lahore. It aims to determine the sero-prevalence of these diseases by screening the apparently healthy blood donors who might be the carriers of HBV or HCV and pose a high risk in the transmission. It also aims the comparison between the sensitivity of two diagnostic tests; chromatographic immunoassay – one step test device and Enzyme Linked Immuno Sorbant Assay (ELISA). Blood serum of 855 apparently healthy blood donors was screened for Hepatitis B surface antigen (HBsAg) and for anti HCV antibodies. SPSS version 12.0 and X2 (Chi-square) test were used for statistical analysis. The seroprevalence of HCV was 8.07% by the device method and by ELISA 9.12% and that of HBV was 5.6% by the device and 6.43% by ELISA. The unavailability of vaccination against HCV makes it more prevalent. Comparing the two diagnostic methods, ELISA proved to be more sensitive.

Keywords: ELISA, Sensitivity comparison of diagnostic tests, seroprevalence of Hepatitis B and C

ELASTIC LATERAL FEATURES OF A NEW GLASS FIBER REINFORCED GYPSUM WALL

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Abstract:

GFRG(Glass Fiber Reinforced Gypsum) wall is a green product which can erect a building fast in prefabricated method, but its application to high-rise residential buildings is limited for its poor lateral stiffness. This paper has proposed a modification to GFRG walls structure to increase its lateral stiffness, which aiming to erect small high-rise residential buildings as load-bearing walls. The elastic finite element analysis to it has shown the lateral deformation feature and the distributions of the axial force and the shear force. The analysis results show that the new GFRG reinforced concrete wall can be used for small high-rise residential buildings.

Keywords: GFRG wall, lateral features, elastic analysis, residential building.

WIND LOAD CHARACTERISTICS IN LIBYA

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Abstract:

Recent trends in building constructions in Libya are more toward tall (high-rise) building projects. As a consequence, a better estimation of the lateral loading in the design process is becoming the focal of a safe and cost effective building industry. Byin- large, Libya is not considered a potential earthquake prone zone, making wind is the dominant design lateral loads. Current design practice in the country estimates wind speeds on a mere random bases by considering certain factor of safety to the chosen wind speed. Therefore, a need for a more accurate estimation of wind speeds in Libya was the motivation behind this study. Records of wind speed data were collected from 22 metrological stations in Libya, and were statistically analysed. The analysis of more than four decades of wind speed records suggests that the country can be divided into four zones of distinct wind speeds. A computer "survey" program was manipulated to draw design wind speeds contour map for the state of Libya. The paper presents the statistical analysis of Libya-s recorded wind speed data and proposes design wind speed values for a 50-year return period that covers the entire country.

Keywords: Ccontour map, return period, wind speed, and zone.

MOLECULAR CHARACTERISTICS OF PHOSPHORIC ACID TREATED SOILS

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Abstract:

The expansive nature of soils containing high amounts of clay minerals can be altered through chemical stabilization, resulting in a material suitable for construction purposes. The primary objective of this investigation was to study the changes induced in the molecular structure of phosphoric acid stabilized bentonite and lateritic soil using Nuclear Magnetic Resonance (NMR) and Fourier Transform Infrared (FTIR) spectroscopy. Based on the obtained data, it was found that a surface alteration mechanism was the main reason responsible for the improvement of treated soils. Furthermore, the results indicated that the Al present in the octahedral layer of clay minerals were more amenable to chemical attacks and also partly responsible for the formation of new products.

Keywords: Bentonite, Laterite clay, Molecular characterization, Phosphoric acid, Stabilization

IMPLEMENTATION OF GENERALIZED PLASTICITY IN LOAD- DEFORMATION BEHAVIOR OF FOUNDATION WITH EMPHASIS ON LOCALIZATION PROBLEM

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Abstract:

Nonlinear finite element method with eight noded isoparametric quadrilateral element is used for prediction of loaddeformation behavior including bearing capacity of foundations. Modified generalized plasticity model with non-associated flow rule is applied for analysis of soil-footing system. Also Von Mises and Tresca criterions are used for simulation of soil behavior. Modified generalized plasticity model is able to simulate load-deformation including softening behavior. Localization phenomena are considered by different meshes. Localization phenomena have not been seen in the examples. Predictions by modified generalized plasticity model show good agreement with laboratory data and theoretical prediction in comparison the other models.

Keywords: Localization phenomena, Generalized plasticity, Non-associated Flow Rule

THE PERFORMANCE OF DISBURSEMENT PROCEDURE OF PUBLIC WORKS IN THAILAND

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Abstract:

This paper analysis performance of disbursement procedure of public works project in Thailand. The results of research were summarised based on contracts, submitted invoice, inspection dated, copies of disbursement dated between client and their main contractor and interviewed with persons involved in central and local government projects during 1994-2008 in Thailand. The data collection was to investigate the disbursement procedure related to performance in disbursement during construction period (Planned duration of contract against Actual execution date in each month). A graphical presentation of a duration analysis of the projects illustrated significant disbursement formation in each project. It was established that the shortage of staff, the financial stability of clients, bureaucratic, method of disbursement and economics situation has play major role on performance of disbursement to their main contractors.

Keywords: Construction disbursement, Payment procedure, Public works

STRUCTURAL SUSTAINABILITY TECHNIQUES FOR RC HIGH RISE BUILDINGS

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Abstract:

Over the early years of the 21st century, cities throughout the Middle East, particularly in the Gulf region have expanded more rapidly than ever before. Given the presence of a large volume of high-rise buildings all over the region, the local authority aims to set a new standard for sustainable development; with an integrated approach to maintain a balance between economy, quality, environmental protection and safety of life. In the very near future, as mandatory requirements, sustainability will be the criteria that should be included in all building projects. It is well known in the building sustainability topics that structural design engineers do not have a key role in this matter. In addition, the LEED (Leadership in Energy and Environmental Design) has looked almost exclusively on the environmental components and materials specifications. The objective of this paper is to focus and establish groundwork for sustainability techniques and applications related to the RC high-rise buildings design, from the structural point of view. A set of recommendations related to local conditions, structural modeling and analysis is given, and some helpful suggestions for structural design team work are addressed. This paper attempts to help structural engineers in identifying the building sustainability design, in order to meet local needs and achieve alternative solutions at an early stage of project design.

Keywords: Building, Design, High-rise, Middle East, Structural, Sustainability.

DETECTION OF LINKAGES BETWEEN EXTREME FLOW MEASURES AND CLIMATE INDICES

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Abstract:

Large scale climate signals and their teleconnections can influence hydro-meteorological variables on a local scale. Several extreme flow and timing measures, including high flow and low flow measures, from 62 hydrometric stations in Canada are investigated to detect possible linkages with several large scale climate indices. The streamflow data used in this study are derived from the Canadian Reference Hydrometric Basin Network and are characterized by relatively pristine and stable land-use conditions with a minimum of 40 years of record. A composite analysis approach was used to identify linkages between extreme flow and timing measures and climate indices. The approach involves determining the 10 highest and 10 lowest values of various climate indices from the data record. Extreme flow and timing measures for each station were examined for the years associated with the 10 largest values and the years associated with the 10 smallest values. In each case, a re-sampling approach was applied to determine if the 10 values of extreme flow measures differed significantly from the series mean. Results indicate that several stations are impacted by the large scale climate indices considered in this study. The results allow the determination of any relationship between stations that exhibit a statistically significant trend and stations for which the extreme measures exhibit a linkage with the climate indices.

Keywords: flood analysis, low-flow events, climate change, trend analysis, Canada

DAMAGE EVALUATION OF CURVED STEEL BRIDGES UPGRADED WITH ISOLATION BEARINGS AND UNSEATING PREVENTION CABLE RESTRAINERS

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Abstract:

This paper investigates the effectiveness of the use of seismic isolation devices on the overall 3D seismic response of curved highway viaducts with an emphasis on expansion joints. Furthermore, an evaluation of the effectiveness of the use of cable restrainers is presented. For this purpose, the bridge seismic performance has been evaluated on four different radii of curvature, considering two cases: restrained and unrestrained curved viaducts. Depending on the radius of curvature, three-dimensional non-linear dynamic analysis shows the vulnerability of curved viaducts to pounding and deck unseating damage. In this study, the efficiency of using LRB supports combined with cable restrainers on curved viaducts is demonstrated, not only by reducing in all cases the possible damage, but also by providing a similar behavior in the viaducts despite of curvature radius.

Keywords: Nonlinear dynamic response, seismic design, seismic isolation, unseating prevention system.

STRUCTURAL INTEGRITY MANAGEMENT FOR FIXED OFFSHORE PLATFORMS IN MALAYSIA

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Abstract:

Structural Integrity Management (SIM) is important for the protection of offshore crew, environment, business assets and company and industry reputation. API RP 2A contained guidelines for assessment of existing platforms mostly for the Gulf of Mexico (GOM). ISO 19902 SIM framework also does not specifically cater for Malaysia. There are about 200 platforms in Malaysia with 90 exceeding their design life. The Petronas Carigali Sdn Bhd (PCSB) uses the Asset Integrity Management System and the very subjective Risk based Inspection Program for these platforms. Petronas currently doesn't have a standalone Petronas Technical Standard PTS-SIM. This study proposes a recommended practice for the SIM process for offshore structures in Malaysia, including studies by API and ISO and local elements such as the number of platforms, types of facilities, age and risk ranking. Case study on SMG-A platform in Sabah shows missing or scattered platform data and a gap in inspection history. It is to undergo a level 3 underwater inspection in year 2015.

Keywords: platform, assessment, integrity, risk based inspection.

AN INTELLIGENT SYSTEM FOR KNEE AND ANKLE REHABILITATION

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Abstract:

The paper is concerned with the state examination as well as the problems during the post surgical (orthopedic) rehabilitation of the knee and ankle joint. An observation of the current appliances for a passive rehabilitation devices is presented. The major necessary and basic features of the intelligent rehabilitation devices are considered. An approach for a new intelligent appliance is suggested. The main advantages of the device are: both active as well as passive rehabilitation of the patient based on the human - patient reactions and a real time feedback. The basic components: controller; electrical motor; encoder, force – torque sensor are discussed in details. The main modes of operation of the device are considered.

Keywords: Ankle, knee, rehabilitation, computer control.

REAL-TIME DETECTING CONCENTRATION OF MYCOBACTERIUM TUBERCULOSIS BY CNTFET BIOSENSOR

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Abstract:

Aptamers are useful tools in microorganism researches, diagnoses, and treatment. Aptamers are specific target molecules formed by oligonucleic acid molecules, and are not decomposed by alcohol. Aptamers used to detect Mycobacterium tuberculosis (MTB) have been proved to have specific affinity to the outer membrane proteins of MTB. This article presents a biosensor chip set with aptamers for early detection of MTB with high specificity and sensitivity, even in very low concentration. Meanwhile, we have already made a modified hydrophobic facial mask module with internal rendering hydrophobic for effectively collecting M. tuberculosis.

Keywords: Aptamers, CNTFET, Mycobacterium tuberculosis, early detection.

DESIGN THE BOWTIE ANTENNA FOR THE DETECTION OF THE TUMOR IN MICROWAVE TOMOGRAPHY

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Abstract:

Early breast cancer detection is an emerging field of research as it can save the women infected by malignant tumors. Microwave breast imaging is based on the electrical property contrast between healthy and malignant tumor. This contrast can be detected by use of microwave energy with an array of antennas that illuminate the breast through coupling medium and by measuring the scattered fields. In this paper, author has been presented the design and simulation results of the bowtie antenna. This bowtie antenna is designed for the detection of breast cancer detection.

Keywords: Breast cancer detection, Microwave Imaging, Tomography.

ON THE DESIGN OF SHAPE MEMORY ALLOY LOCKING MECHANISM: A NOVEL SOLUTION FOR LAPAROSCOPIC LIGATION PROCESS

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Abstract:

The blood ducts must be occluded to avoid loss of blood from vessels in laparoscopic surgeries. This paper presents a locking mechanism to be used in a ligation laparoscopic procedure (LigLAP I), as an alternative solution for a stapling procedure. Currently, stapling devices are being used to occlude vessels. Using these devices may result in some problems, including injury of bile duct, taking up a great deal of space behind the vessel, and bile leak. In this new procedure, a two-layer suture occludes a vessel. A locking mechanism is also required to hold the suture. Since there is a limited space at the device tip, a Shape Memory Alloy (SMA) actuator is used in this mechanism. Suitability for cleanroom applications, small size, and silent performance are among the advantages of SMA actuators in biomedical applications. An experimental study is conducted to examine the function of the locking mechanism. To set up the experiment, a prototype of a locking mechanism is built using nitinol, which is a nickel-titanium shape memory alloy. The locking mechanism successfully locks a polymer suture for all runs of the experiment. In addition, the effects of various surface materials on the applied pulling forces are studied. Various materials are mounted at the mechanism tip to compare the maximum pulling forces applied to the suture for each material. The results show that the various surface materials on the device tip provide large differences in the applied pulling forces.

Keywords: Laparoscopic surgery, ligation process, locking mechanism, Shape Memory Alloy (SMA) actuator.

WHY WE ARE TALLER IN THE MORNING THAN GOING TO BED AT NIGHT – AN IN VIVO AND IN VITRO STUDY

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Abstract:

Intradiscal and intervertebral pressure transducers were developed. They were used to map the pressures in the nucleus and within the annulus of the human spinal segments. Their stressrelaxation were recorded over a period of time for nucleus pressure, applied load, and peripheral strain against time. The results show that for normal discs, pressures in the nucleus are viscoelastic in nature with the applied compressive load. Mechanical strains which develop around the periphery of the vertebral body are also viscoelastic with the applied compressive load. Applied compressive load against time also shows viscoelastic behavior. However, annulus does not respond viscoelastically with the applied load. It showed a linear response to compressive loading.

Keywords: Intradiscal pressure transducer (IDPT), intervertebral pressure transducer (IVPT), mechanical strains of vertebral bone, viscoelasticity of human spinal disc.

ANTIOXIDANT BIOSENSOR USING MICROBE

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Abstract:

The antioxidant compounds are needed for the food, beverages, and pharmaceuticals industry. For this purpose, an appropriate method is required to measure the antioxidant properties in various types of samples. Spectrophotometric method usually used has some weaknesses, including the high price, long sample preparation time, and less sensitivity. Among the alternative methods developed to overcome these weaknesses is antioxidant biosensor based on superoxide dismutase (SOD) enzyme. Therefore, this study was carried out to measure the SOD activity originating from *Deinococcus radiodurans* and to determine its kinetics properties. Carbon paste electrode modified with ferrocene and immobilized SOD exhibited anode and cathode current peak at potential of +400 and +300mv respectively, in both pure SOD and SOD of *D. radiodurans*. This indicated that the current generated was from superoxide catalytic dismutation reaction by SOD. Optimum conditions for SOD activity was at pH 9 and temperature of 27.50C for *D. radiodurans* SOD, and pH 11 and temperature of 200C for pure SOD. Dismutation reaction kinetics of superoxide catalyzed by SOD followed the Lineweaver-Burk kinetics with *D. radiodurans* SOD K_{Mapp} value was smaller than pure SOD. The result showed that *D. radiodurans* SOD had higher enzyme-substrate affinity and specificity than pure SOD. It concluded that *D. radiodurans* SOD had a great potential as biological recognition component for antioxidant biosensor.

Keywords: Antioxidant biosensor, *Deinococcus radiodurans*, enzyme kinetic, superoxide dismutase (SOD).

CHARACTERIZATION OF LUBRICITY OF MUCINS AT POLYMERIC SURFACES FOR BIOMEDICAL APPLICATIONS

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Abstract:

The lubricating properties of commercially available mucins originating from different animal organs, namely bovine submaxillary mucin (BSM) and porcine gastric mucin (PGM), have been characterized at polymeric surfaces for biomedical applications. Atomic force microscopy (AFM) and pin-on-disk tribometry have been employed for tribological studies at nanoscale and macroscale contacts, respectively. Polystyrene (PS) was employed to represent 'rigid' contacts, whereas poly(dimethylsiloxane) (PDMS) was employed to represent 'soft contacts'. To understand the lubricating properties of mucins in correlation with the coverage on surfaces, adsorption properties of mucins onto the polymeric substrates have been characterized by means of optical waveguide light-mode spectroscopy (OWLS). Both mucins showed facile adsorption onto both polymeric substrates, but the lubricity was highly dependent upon the pH change between 2 and 7.

Keywords: Bovine submaxillary mucin (BSM), Porcine Gastric Mucin (PGM), lubricity, biomedical.

INFLUENCE OF MICROSTRUCTURAL FEATURES ON WEAR RESISTANCE OF BIOMEDICAL TITANIUM MATERIALS

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Abstract:

The field of biomedical materials plays an imperative requisite and a critical role in manufacturing a variety of biological artificial replacements in a modern world. Recently, titanium (Ti) materials are being used as biomaterials because of their superior corrosion resistance and tremendous specific strength, free- allergic problems and the greatest biocompatibility compared to other competing biomaterials such as stainless steel, Co-Cr alloys, ceramics, polymers, and composite materials. However, regardless of these excellent performance properties, Implantable Ti materials have poor shear strength and wear resistance which limited their applications as biomaterials. Even though the wear properties of Ti alloys has revealed some improvements, the crucial effectiveness of biomedical Ti alloys as wear components requires a comprehensive deep understanding of the wear reasons, mechanisms, and techniques that can be used to improve wear behavior. This review examines current information on the effect of thermal and thermomechanical processing of implantable Ti materials on the long-term prosthetic requirement which related with wear behavior. This paper focuses mainly on the evolution, evaluation and development of effective microstructural features that can improve wear properties of bio grade Ti materials using thermal and thermomechanical treatments.

Keywords: Wear Resistance, Heat Treatment, Thermomechanical Processing, Biomedical Titanium Materials.

THE EFFECT OF PRESS FIT ON OSSEOINTEGRATION OF ACETABULAR CUP

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Abstract:

The primary cause of Total Hip Replacement (THR) failure for younger patients is aseptic loosening. This complication is twice more likely to happen in acetabular cup than in femoral stem. Excessive micromotion between bone and implant will cause loosening and it depends in patient activities, age and bone. In this project, the effects of different metal back design of press fit on osseointegration of the acetabular cup are carried out. Commercial acetabular cup designs, namely Spiked, Superfix and Quadrafix are modelled and analyzed using commercial finite element software. The diameter of acetabular cup is based on the diameter of acetabular rim to make sure the component fit to the acetabular cavity. A new design of acetabular cup are proposed and analyzed to get better osseointegration between the bones and implant interface. Results shows that the proposed acetabular cup designs are more stable compared to other designs with respect to stress and displacement aspects.

Keywords: Finite element analysis, total hip replacement, acetabular cup, loosening.

SIMULATION STUDY OF RADIAL HEAT AND MASS TRANSFER INSIDE A FIXED BED CATALYTIC REACTOR

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Abstract:

A rigorous two-dimensional model is developed for simulating the operation of a less-investigated type steam reformer having a considerably lower operating Reynolds number, higher tube diameter, and non-availability of extra steam in the feed compared with conventional steam reformers. Simulation results show that reasonable predictions can only be achieved when certain correlations for wall to fluid heat transfer equations are applied. Due to severe operating conditions, in all cases, strong radial temperature gradients inside the reformer tubes have been found. Furthermore, the results show how a certain catalyst loading profile will affect the operation of the reformer.

Keywords: Steam reforming, direct reduction, heat transfer, two-dimensional model, simulation.

PHASE BEHAVIOR OF CO₂ AND CH₄ HYDRATE IN POROUS MEDIA

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Abstract:

Hydrate phase equilibria for the binary CO₂+water and CH₄+water mixtures in silica gel pore of nominal diameters 6, 30, and 100 nm were measured and compared with the calculated results based on van der Waals and Platteeuw model. At a specific temperature, three-phase hydrate-water-vapor (HLV) equilibrium curves for pore hydrates were shifted to the higher-pressure condition depending on pore sizes when compared with those of bulk hydrates. Notably, hydrate phase equilibria for the case of 100 nominal nm pore size were nearly identical with those of bulk hydrates. The activities of water in porous silica gels were modified to account for capillary effect, and the calculation results were generally in good agreement with the experimental data. The structural characteristics of gas hydrates in silica gel pores were investigated through NMR spectroscopy.

Keywords: CO₂, CH₄, gas hydrate, equilibria.

NEW MULTI-SOLID THERMODYNAMIC MODEL FOR THE PREDICTION OF WAX FORMATION

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Abstract:

In the previous multi-solid models, ϕ approach is used for the calculation of fugacity in the liquid phase. For the first time, in the proposed multi-solid thermodynamic model, γ approach has been used for calculation of fugacity in the liquid mixture. Therefore, some activity coefficient models have been studied that the results show that the predictive Wilson model is more appropriate than others. The results demonstrate γ approach using the predictive Wilson model is in more agreement with experimental data than the previous multi-solid models. Also, by this method, generates a new approach for presenting stability analysis in phase equilibrium calculations. Meanwhile, the run time in γ approach is less than the previous methods used ϕ approach. The results of the new model present 0.75 AAD % (Average Absolute Deviation) from the experimental data which is less than the results error of the previous multi-solid models obviously.

Keywords: Multi-solid thermodynamic model, Predictive Wilson model, Wax formation.

ESTIMATING REACTION RATE CONSTANTS WITH NEURAL NETWORKS

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Abstract:

Solutions are proposed for the central problem of estimating the reaction rate coefficients in homogeneous kinetics. The first is based upon the fact that the right hand side of a kinetic differential equation is linear in the rate constants, whereas the second one uses the technique of neural networks. This second one is discussed deeply and its advantages, disadvantages and conditions of applicability are analyzed in the mirror of the first one. Numerical analysis carried out on practical models using simulated data, and our programs written in Mathematica.

Keywords: Neural networks, parameter estimation, linear regression, kinetic models, reaction rate coefficients.

PHASE EQUILIBRIUM IN AQUEOUS TWO-PHASE SYSTEMS CONTAINING POLY (PROPYLENE GLYCOL) AND SODIUM CITRATE AT DIFFERENT PH

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University, Iran

Abstract:

The phase diagrams and compositions of coexisting phases have been determined for aqueous two-phase systems containing poly(propylene glycol) with average molecular weight of 425 and sodium citrate at various pH of 3.93, 4.44, 4.6, 4.97, 5.1, 8.22. The effect of pH on the salting-out effect of poly (propylene glycol) by sodium citrate has been studied. It was found that, an increasing in pH caused the expansion of two-phase region. Increasing pH also increases the concentration of PPG in the PPG-rich phase, while the salt-rich phase will be somewhat mole diluted.

Keywords: Aqueous two-phase system, Phase equilibrium, Biomolecules purification

USING MIXED AMINE SOLUTION FOR GAS SWEETENING

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Abstract:

The use of amine mixtures employing methyldiethanolamine (MDEA), monoethanolamine (MEA), and diethanolamine (DEA) have been investigated for a variety of cases using a process simulation program called HYSYS. The results show that, at high pressures, amine mixtures have little or no advantage in the cases studied. As the pressure is lowered, it becomes more difficult for MDEA to meet residual gas requirements and mixtures can usually improve plant performance. Since the CO₂ reaction rate with the primary and secondary amines is much faster than with MDEA, the addition of small amounts of primary or secondary amines to an MDEA based solution should greatly improve the overall reaction rate of CO₂ with the amine solution. The addition of MEA caused the CO₂ to be absorbed more strongly in the upper portion of the column than for MDEA along. On the other hand, raising the concentration for MEA to 11%wt, CO₂ is almost completely absorbed in the lower portion of the column. The addition of MEA would be most advantageous. Thus, in areas where MDEA cannot meet the residual gas requirements, the use of amine mixtures can usually improve the plant performance.

Keywords: CO₂, H₂S, Methyldiethanolamine, Monoethanolamine

EFFECT OF ANIONIC AND NON-IONIC SURFACTANTS ON ACTIVATED SLUDGE OXYGEN UPTAKE RATE AND NITRIFICATION

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Abstract:

A local wastewater treatment plant (WWTP) experiencing poor nitrification tracked down high level of surfactants in the plant's influent and effluent. The aims of this project were to assess the potential inhibitory effect of surfactants on activated sludge processes. The effect of the presence of TergitolNP-9, TrigitolNP-7, Trigitol15-S-9, dodecylbenzene sulphonate (SDBS) and sodium dodecyl sulfate (SDS) on activated sludge oxygen uptake rate (OUR) and nitrification were assessed. The average concentration of non-ionic and anionic surfactants in the influent to the local WWTP were 7 and 8.7 mg/L, respectively. Removal of 67% to 90% of the non-ionic and 93-99% of the anionic surfactants tested were measured. All surfactants tested showed inhibitory effects both on OUR and nitrification. SDS incurred the lowest inhibition whereas SDBS and NP-9 caused severe inhibition to OUR and Nitrification. Activated sludge flocs sizes slightly decreased after 3 hours contact with the surfactant present in the test. The results obtained indicated that high concentrations of surfactants are likely to have an adverse effect on the performance of WWTPs utilizing activated sludge processes.

Keywords: surfactants, activated sludge oxygen uptake rate (OUR), nitrification, anionic surfactants, non-ionic surfactants

PHYSICO-CHEMICAL TREATMENT OF TAR-CONTAINING WASTEWATER GENERATED FROM BIOMASS GASIFICATION PLANTS

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Abstract:

Treatment of tar-containing wastewater is necessary for the successful operation of biomass gasification plants (BGPs). In the present study, tar-containing wastewater was treated using lime and alum for the removal of in-organics, followed by adsorption on powdered activated carbon (PAC) for the removal of organics. Lime-alum experiments were performed in a jar apparatus and activated carbon studies were performed in an orbital shaker. At optimum concentrations, both lime and alum individually proved to be capable of removing color, total suspended solids (TSS) and total dissolved solids (TDS), but in both cases, pH adjustment had to be carried out after treatment. The combination of lime and alum at the dose ratio of 0.8:0.8 g/L was found to be optimum for the removal of inorganics. The removal efficiency achieved at optimum concentrations were 78.6, 62.0, 62.5 and 52.8% for color, alkalinity, TSS and TDS, respectively. The major advantages of the lime-alum combination were observed to be as follows: no requirement of pH adjustment before and after treatment and good settleability of sludge. Coagulation-precipitation followed by adsorption on PAC resulted in 92.3% chemical oxygen demand (COD) removal and 100% phenol removal at equilibrium. Ammonia removal efficiency was found to be 11.7% during coagulation-flocculation and 36.2% during adsorption on PAC. Adsorption of organics on PAC in terms of COD and phenol followed Freundlich isotherm with $K_f = 0.55$ & 18.47 mg/g and $n = 1.01$ & 1.45 , respectively. This technology may prove to be one of the fastest and most techno-economically feasible methods for the treatment of tar-containing wastewater generated from BGPs.

Keywords: Activated carbon, Alum, Biomass gasification, Coagulation-flocculation, Lime, Tar-containing wastewater.

MODEL OF CONTINUOUS CHEESE WHEY FERMENTATION BY *CANDIDA PSEUDOTROPICALIS*

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Abstract:

The utilization of cheese whey as a fermentation substrate to produce bio-ethanol is an effort to supply bio-ethanol demand as a renewable energy. Like other process systems, modeling is also required for fermentation process design, optimization and plant operation. This research aims to study the fermentation process of cheese whey by applying mathematics and fundamental concept in chemical engineering, and to investigate the characteristic of the cheese whey fermentation process. Steady state simulation results for inlet substrate concentration of 50, 100 and 150 g/l, and various values of hydraulic retention time, showed that the ethanol productivity maximum values were 0.1091, 0.3163 and 0.5639 g/l.h respectively. Those values were achieved at hydraulic retention time of 20 hours, which was the minimum value used in this modeling. This showed that operating reactor at low hydraulic retention time was favorable. Model of bio-ethanol production from cheese whey will enhance the understanding of what really happen in the fermentation process.

Keywords: Cheese whey, ethanol, fermentation, modeling.

KINETIC STUDY OF GLUCONIC ACID BATCH FERMENTATION BY ASPERGILLUS NIGER

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Abstract:

Gluconic acid is one of interesting chemical products in industries such as detergents, leather, photographic, textile, and especially in food and pharmaceutical industries. Fermentation is an advantageous process to produce gluconic acid. Mathematical modeling is important in the design and operation of fermentation process. In fact, kinetic data must be available for modeling. The kinetic parameters of gluconic acid production by *Aspergillus niger* in batch culture was studied in this research at initial substrate concentration of 150, 200 and 250 g/l. The kinetic models used were logistic equation for growth, Luedeking-Piret equation for gluconic acid formation, and Luedeking-Piret-like equation for glucose consumption. The Kinetic parameters in the model were obtained by minimizing non linear least squares curve fitting.

Keywords: *Aspergillus niger*, fermentation, gluconic acid, kinetic.

A COMPARISON OF SVM-BASED CRITERIA IN EVOLUTIONARY METHOD FOR GENE SELECTION AND CLASSIFICATION OF MICROARRAY DATA

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Abstract:

An evolutionary method whose selection and recombination operations are based on generalization error-bounds of support vector machine (SVM) can select a subset of potentially informative genes for SVM classifier very efficiently [7]. In this paper, we will use the derivative of error-bound (first-order criteria) to select and recombine gene features in the evolutionary process, and compare the performance of the derivative of error-bound with the error-bound itself (zero-order) in the evolutionary process. We also investigate several error-bounds and their derivatives to compare the performance, and find the best criteria for gene selection and classification. We use 7 cancer-related human gene expression datasets to evaluate the performance of the zero-order and first-order criteria of error-bounds. Though both criteria have the same strategy in theoretically, experimental results demonstrate the best criterion for microarray gene expression data.

Keywords: support vector machine, generalization error-bound, feature selection, evolutionary algorithm, microarray data

**BIOEFFICACY OF SOME OIL-MIXED PLANT DERIVATIVES AGAINST
AFRICAN MUD CATFISH (*CLARIAS GARIEPINUS*) BEETLES, *DERMESTES
MACULATUS* AND *NECROBIA RUFIPES***

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Abstract:

The efficacy of the separate mixing of four tropical spicy and medicinal plant products: *Dennettia tripetala* Baker (pepper fruit), *Eugenia aromatica* Hook (clove), *Piper guineense* (Schum and Thonn) (black pepper) and *Monodora myristica* (Dunal) (African nut-meg) with a household vegetable oil was evaluated under tropical storage conditions for the control and reproductive performance of *Dermestes maculatus* (De Geer) (hide beetle) and *Necroba rufipes* (De Geer) (copra beetle) on African catfish, *Clarias gariepinus* (Burchell). Each of the plant materials was pulverized into powder and applied as a mix of 1ml of oil and plant powder at 2.5, 5.0, 7.5 and 10.0g per 100g of dried fish, and allowed to dry for 6h. Each of the four oil-mixed powder treatments evoked significant ($P < 0.05$) mortalities of the two insects compared with the control (oil only) at 1, 3 and 7 days post treatment. The oil-powder mixture dosages did not prevent insect egg hatchability but while the emergent larvae on the treated samples died, the emergent larvae in the control survived into adults. The application of oil-mixed powders effectively suppressed the emergence of the larvae of the beetles. Similarly, each of the oil-powder mixtures significantly reduced weight loss in smoked fish that were exposed to *D. maculatus* and *N. rufipes* when compared to the control ($P < 0.05$). The results of this study suggest that the plant powders rather than the domestic oil demonstrated protective ability against the fish beetles and confirm the efficacy of the plant products as pest control agents.

Keywords: Catfish, Fish beetles, Fish preservation, Oil-powder mix, Plant products.

CHITOSAN/CASEIN MICROPARTICLES: PREPARATION, CHARACTERIZATION AND DRUG RELEASE STUDIES

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Abstract:

Microparticles carrier systems made from naturally occurring polymers based on chitosan/casein system appears to be a promising carrier for the sustained release of orally and parenteral administered drugs. In the current study we followed a microencapsulation technique based aqueous coacervation method to prepare chitosan/casein microparticles of compositions 1:1, 1:2 and 1:5 incorporated with chloramphenicol. Glutaraldehyde was used as a chemical cross-linking agent. The microparticles were prepared by aerosol method and studied by optical microscopy, infrared spectroscopy, thermo gravimetric analysis, swelling studies and drug release studies at various pH. The percentage swelling of the polymers are found to be in the order $\text{pH } 4 > \text{pH } 10 > \text{pH } 7$ and the increase in casein composition decrease the swelling percentage. The drug release studies also follow the above order.

Keywords: Chitosan/casein micro particles, chloramphenicol, drug release, microencapsulation.

The Role Of Immunogenic Adhesin *Vibrio Alginolyticus* 49 K Da To Molecule Expression Of Major Histocompatibility Complex On Receptors Of Humpback Grouper *Cromileptes Altivelis*

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Abstract:

The purpose of research was to know the role of immunogenic protein of 49 kDa from *V.alginolyticus* which capable to initiate molecule expression of MHC Class II in receptor of *Cromileptes altivelis*. The method used was in vivo experimental research through testing of immunogenic protein 49 kDa from *V.alginolyticus* at *Cromileptes altivelis* (size of 250 - 300 grams) using 3 times booster by injecting an immunogenic protein in a intramuscular manner. Response of expressed MHC molecule was shown using immunocytochemistry method and SEM. Results indicated that adhesin *V.alginolyticus* 49 kDa which have immunogenic character could trigger expression of MHC class II on receptor of grouper and has been proven by staining using immunocytochemistry and SEM with labeling using antibody anti MHC (anti mouse). This visible expression based on binding between epitopes antigen and antibody anti MHC in the receptor. Using immunocytochemistry, intracellular response of MHC to in vivo induction of immunogenic adhesin from *V.alginolyticus* was shown.

Keywords: *C.altivelis*, immunogenic, MHC, *V.alginolyticus*.

The Potential Of Strain M Protease In Degradations Of Protein In Natural Rubber Latex

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Abstract:

Strain M was isolated from the latex of *Hevea brasiliensis* that grow in the rubber farm area of Malaysia Rubber Board. Strain M was tentatively identified as *Bacillus* sp. Strain M demonstrated high protease production at pH 9, and this was suitable to be applied in rubber processing that was in alkaline conditions. The right and suitable proportion to be used in applying supernatant into the latex was two parts of latex and one part of enzyme. In this proportion, the latex was stable throughout the 72 hours of treatment. The potential of strain M to degrade protein in the natural rubber latex was proven with the reduction of 79.3% nitrogen in 24 hours treatment. Centrifugation process of the latex before undergoing the treatment had increased the protein degradation in latex. Although the centrifugation process did not achieve zero nitrogen content, it had improved the performance of protein denaturing in the natural rubber.

Keywords: *Hevea brasiliensis*, *Bacillus* sp., protease, latex.

IDENTIFICATION CHARACTERIZATION AND PRODUCTION OF PHYTASE FROM ENDOPHYTIC FUNGI

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Abstract:

Phytases are acid phosphatase enzymes, which efficiently cleave phosphate moieties from phytic acid, thereby generating myo-inositol and inorganic phosphate. Thirty four isolates of endophytic fungi to produce of phytases were isolated from leaf, stem and root fragments of soybean. Screening of 34 isolates of endophytic fungi identified the phytases produced by *Rhizoctonia* sp. and *Fusarium verticillioides* . The phytase production were the best induced by phytic acid and rice bran compared the others inducer in submerged fermentation medium used. The phytase produced by both *Rhizoctonia* sp. and *F. verticillioides* have pH optimum at 4.0 and 5.0 respectively. The characterization of phytase from *Fusarium verticillioides* showed that temperature optimum was 50°C and stability until 60°C, the pH optimum 5.0 and pH stability was 2.5 – 6.0, and substrate specificity were rice bran>soybean meal>corn> coconut cake, respectively.

Keywords: endophytic fungus, phytase, soybean, *Rhizoctonia* sp., *Fusarium verticillioides*,

GLUCOSE-DEPENDENT FUNCTIONAL HETEROGENEITY IN B-TC-6 MURINE INSULINOMA

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Abstract:

To determine if the murine insulinoma, β -TC-6, is a suitable substitute for primary pancreatic β -cells in the study of β -cell functional heterogeneity, we used three distinct functional assays to ascertain the cell line's response to glucose or a glucose analog. These assays include: (i) a 2-NBDG uptake assay; (ii) a calcium influx assay, and; (iii) a quinacrine secretion assay. We show that a population of β -TC-6 cells endocytoses the glucose analog, 2-NBDG, at different rates, has non-uniform intracellular calcium ion concentrations and releases quinacrine at different rates when challenged with glucose. We also measured the K_m for β -TC-6 glucose uptake to be 46.9 mM and the V_m to be 8.36×10^{-5} mmole/million cells/min. These data suggest that β -TC-6 might be used as an alternative to primary pancreatic β -cells for the study of glucose-dependent β -cell functional heterogeneity.

Keywords: 2-NBDG, Fura-2/AM, functional heterogeneity, quinacrine.

AN EFFICIENT PROTOCOL FOR CYCLIC SOMATIC EMBRYOGENESIS IN NEEM (AZADIRACHTA INDICA A JUSS.)

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Abstract:

Neem is a highly heterozygous and commercially important perennial plant. Conventionally, it is propagated by seeds which lose viability within two weeks. Strictly cross pollinating nature of the plant causes serious barrier to the genetic improvement by conventional methods. Alternative methods of tree improvement such as somatic hybridization, mutagenesis and genetic transformation require an efficient in vitro plant regeneration system. In this regard, somatic embryogenesis particularly secondary somatic embryogenesis may offer an effective system for large scale plant propagation without affecting the clonal fidelity of the regenerants. It can be used for synthetic seed production, which further bolsters conservation of this tree species which is otherwise very difficult. The present report describes the culture conditions necessary to induce and maintain repetitive somatic embryogenesis, for the first time, in neem. Out of various treatments tested, the somatic embryos were induced directly from immature zygotic embryos of neem on MS + TDZ (0.1 μ M) + ABA (4 μ M), in more than 76 % cultures. Direct secondary somatic embryogenesis occurred from primary somatic embryos on MS + IAA (5 μ M) + GA3 (5 μ M) in 12.5 % cultures. Embryogenic competence of the explant as well as of the primary embryos was maintained for a long period by repeated subcultures at frequent intervals. A maximum of 10 % of these somatic embryos were converted into plantlets.

Keywords: Azadirachta indica A. Juss., Cytokinin, Somatic embryogenesis, zygotic embryo culture.

**A MODEL PREDICTING THE MICROBIOLOGICAL QUALITY OF
AQUACULTURED SEA BREAM (SPARUS AURATA) ACCORDING TO
PHYSICOCHEMICAL DATA: AN APPLICATION IN WESTERN GREECE FISH
AQUACULTURE**

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Environmental Management, Pollution and Ecotoxicology, Patras, Greece

Abstract:

Monitoring of microbial flora in aquacultured sea bream, in relation to the physicochemical parameters of the rearing seawater, ended to a model describing the influence of the last to the quality of the fisheries. Fishes were sampled during eight months from four aqua farms in Western Greece and analyzed for psychrotrophic, H₂S producing bacteria, Salmonella sp., heterotrophic plate count (PCA), with simultaneous physical evaluation. Temperature, dissolved oxygen, pH, conductivity, TDS, salinity, NO₃⁻ and NH₄⁺ ions were recorded. Temperature, dissolved oxygen and conductivity were correlated, respectively, to PCA, Pseudomonas sp. and Shewanella sp. counts. These parameters were the inputs of the model, which was driving, as outputs, to the prediction of PCA, Vibrio sp., Pseudomonas sp. and Shewanella sp. counts, and fish microbiological quality. The present study provides, for the first time, a ready-to-use predictive model of fisheries hygiene, leading to an effective management system for the optimization of aquaculture fisheries quality.

Keywords: Microbiological, model, physicochemical, Seabream.

A GENERAL MODEL FOR AMINO ACID INTERACTION NETWORKS

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Abstract:

In this paper we introduce the notion of protein interaction network. This is a graph whose vertices are the protein-s amino acids and whose edges are the interactions between them. Using a graph theory approach, we identify a number of properties of these networks. We compare them to the general small-world network model and we analyze their hierarchical structure.

Keywords: interaction network, protein structure, small-world network.

A SYSTEMS MODELING APPROACH TO SUPPORT ENVIRONMENTALLY SUSTAINABLE BUSINESS DEVELOPMENT IN MANUFACTURING SMES

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Abstract:

Small and Medium Sized Enterprises (SMEs) play an important role in many economies. In New Zealand, for example, 97% of all manufacturing companies employ less than 100 staff, and generate the predominant part of this industry sector's economic output. Manufacturing SMEs as a group also have a significant impact on the environment. This situation is similar in many developed economies, including the European Union. Sustainable economic development therefore needs to strongly consider the role of manufacturing SMEs, who generally find it challenging to move towards more environmentally friendly business practices. This paper presents a systems thinking approach to modelling and understanding the factors which have an influence on the successful uptake of environmental practices in small and medium sized manufacturing companies. It presents a number of causal loop diagrams which have been developed based on primary action research, and a thorough understanding of the literature in this area. The systems thinking model provides the basis for further development of a strategic framework for the successful uptake of environmental innovation in manufacturing SMEs.

Keywords: Environmentally benign manufacturing, SMEs, Systems modeling.

PROCESS-BASED BUSINESS TRANSFORMATION THROUGH SERVICES COMPUTING

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Abstract:

Business transformation initiatives are required by any organization to jump from its normal mode of operation to the one that is suitable for the change in the environment such as competitive pressures, regulatory requirements, changes in labor market, etc., or internal such as changes in strategy/vision, changes in the capability, change in the management, etc. Recent advances in information technology in automating the business processes have the potential to transform an organization to provide it with a sustained competitive advantage. Process constitutes the skeleton of a business. Thus, for a business to exist and compete well, it is essential for the skeleton to be robust and agile. This paper details "transformation" from a business perspective, methodologies to bring about an effective transformation, process-based transformation, and the role of services computing in this. Further, it details the benefits that could be achieved through services computing.

Keywords: Business Transformation, Services Oriented Architecture, Business Processes, Process-based Transformation.

PROPOSING ENTERPRISE WIDE INFORMATION SYSTEMS BUSINESS PERFORMANCE MODEL

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Abstract:

Enterprise Wide Information Systems (EWIS) implementation involves the entire business and will require changes throughout the firm. Because of the scope, complexity and continuous nature of ERP, the project-based approach to managing the implementation process resulted in failure rates of between 60% and 80%. In recent years ERP systems have received much attention. The organizational relevance and risk of ERP projects make it important for organizations to focus on ways to make ERP implementation successful. Once these systems are in place, however, their performance depends on the identified macro variables viz. 'Business Process', 'Decision Making' and 'Individual / Group working'. The questionnaire was designed and administered. The responses from 92 organizations were compiled. The relationship of these variables with EWIS performance is analyzed using inferential statistical measurements. The study helps to understand the performance of model presented. The study suggested in keeping away from the calamities and thereby giving the necessary competitive edge. Whenever some discrepancy is identified during the process of performance appraisal care has to be taken to draft necessary preventive measures. If all these measures are taken care off then the EWIS performance will definitely deliver the results.

Keywords: Enterprise Systems, performance, technology

CONCEPTUAL METHOD FOR FLEXIBLE BUSINESS PROCESS MODELING

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Abstract:

Nowadays, the pace of business change is such that, increasingly, new functionality has to be realized and reliably installed in a matter of days, or even hours. Consequently, more and more business processes are prone to a continuous change. The objective of the research in progress is to use the MAP model, in a conceptual modeling method for flexible and adaptive business process. This method can be used to capture the flexibility dimensions of a business process; it takes inspiration from modularity concept in the object oriented paradigm to establish a hierarchical construction of the BP modeling. Its intent is to provide a flexible modeling that allows companies to quickly adapt their business processes.

Keywords: Business Process, Business process modeling, flexibility, MAP Model.

USING ONTOLOGY SEARCH IN THE DESIGN OF CLASS DIAGRAM FROM BUSINESS PROCESS MODEL

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Abstract:

Business process model describes process flow of a business and can be seen as the requirement for developing a software application. This paper discusses a BPM2CD guideline which complements the Model Driven Architecture concept by suggesting how to create a platform-independent software model in the form of a UML class diagram from a business process model. An important step is the identification of UML classes from the business process model. A technique for object-oriented analysis called domain analysis is borrowed and key concepts in the business process model will be discovered and proposed as candidate classes for the class diagram. The paper enhances this step by using ontology search to help identify important classes for the business domain. As ontology is a source of knowledge for a particular domain which itself can link to ontologies of related domains, the search can give a refined set of candidate classes for the resulting class diagram.

Keywords: Business Process Model, Model DrivenArchitecture, Ontology, UML Class Diagram.

A QUANTITATIVE APPROACH TO STRATEGIC DESIGN OF COMPONENT-BASED BUSINESS PROCESS MODELS

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Abstract:

A new paradigm for software design and development models software by its business process, translates the model into a process execution language, and has it run by a supporting execution engine. This process-oriented paradigm promotes modeling of software by less technical users or business analysts as well as rapid development. Since business process models may be shared by different organizations and sometimes even by different business domains, it is interesting to apply a technique used in traditional software component technology to design reusable business processes. This paper discusses an approach to apply a technique for software component fabrication to the design of process-oriented software units, called process components. These process components result from decomposing a business process of a particular application domain into subprocesses with an aim that the process components can be reusable in different process-based software models. The approach is quantitative because the quality of process component design is measured from technical features of the process components. The approach is also strategic because the measured quality is determined against business-oriented component management goals. A software tool has been developed to measure how good a process component design is, according to the required managerial goals and comparing to other designs. We also discuss how we benefit from reusable process components.

Keywords: Business process model, process component, component management goals, measurement

A NEW DIMENSION OF BUSINESS INTELLIGENCE: LOCATION-BASED INTELLIGENCE

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Abstract:

Through the course of this paper we define Locationbased Intelligence (LBI) which is outgrowing from process of amalgamation of geolocation and Business Intelligence. Amalgamating geolocation with traditional Business Intelligence (BI) results in a new dimension of BI named Location-based Intelligence. LBI is defined as leveraging unified location information for business intelligence. Collectively, enterprises can transform location data into business intelligence applications that will benefit all aspects of the enterprise. Expectations from this new dimension of business intelligence are great and its future is obviously bright.

Keywords: Business intelligence, geolocation, location-based intelligence, innovation, location-intelligent business

COMPUTATIONAL MODELING IN STRATEGIC MARKETING

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Abstract:

Well-developed strategic marketing planning is the essential prerequisite for establishment of the right and unique competitive advantage. Typical market, however, is a heterogeneous and decentralized structure with natural involvement of individual or group subjectivity and irrationality. These features cannot be fully expressed with one-shot rigorous formal models based on, e.g. mathematics, statistics or empirical formulas. We present an innovative solution, extending the domain of agent based computational economics towards the concept of hybrid modeling in service provider and consumer market such as telecommunications. The behavior of the market is described by two classes of agents - consumer and service provider agents - whose internal dynamics are fundamentally different. Customers are rather free multi-state structures, adjusting behavior and preferences quickly in accordance with time and changing environment. Producers, on the contrary, are traditionally structured companies with comparable internal processes and specific managerial policies. Their business momentum is higher and immediate reaction possibilities limited. This limitation underlines importance of proper strategic planning as the main process advising managers in time whether to continue with more or less the same business or whether to consider the need for future structural changes that would ensure retention of existing customers or acquisition of new ones.

Keywords: Agent-based computational economics, hybrid modeling, strategic marketing, system dynamics.

**MEASURING BUSINESS AND INFORMATION TECHNOLOGY VALUE IN BPR:
AN EMPIRICAL STUDY IN THE JAPANESE ENTERPRISES**

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Abstract:

This paper presents an analysis result of relationship between business and information technology (IT) in business process reengineering (BPR). 258 Japanese firm-level data collected have been analyzed using structural equation modeling. This analysis was aimed to illuminating success factors of achieve effective BPR. Analysis was focused on management factors (including organizational factors) and implementing management method (e.g. balanced score card, internal control, etc.). These results would contribute for achieving effective BPR by showing effective tasks and environment to be focused.

Keywords: BPR, SEM, IS Success Model, user satisfaction

ASFALT BETON MALZEMELERİN ÇEKME VE MAKASLAMA GERİLMELERİ ALTINDA KIRILMA ÖZELLİKLERİNİN ARAŞTIRILMASI

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ÖZET

Bu çalışmada, bitümlü temel (ACB) numunelerinde çatlak oluşumunu ve yayılmasını araştırmak için Yarı Dairesel Disk Bükme (SCB) numuneleri ile deneysel, analitik ve sayısal analiz araştırmaları yapılmıştır. Amerikan Test ve Malzeme Derneği (ASTM), SCB numuneleri kullanarak Asfalt Betonu (AC) malzemelerinin çekme kırılma tokluğunu (mod I) test etmek için ASTM D8044'ü önermiştir. Bununla birlikte, bu çalışmanın ana amaçlarından biri, AC malzemelerin karma mod I-II (gerilme ve kesme) kırılmasını analiz etmek için ASTM standardının uygulanabilirliğini araştırmaktır. Bu çalışma, deneysel, analitik ve Lineer Elastik Kırılma Mekanikliği (LEFM) analizleri arasında karşılaştırmalı bir değerlendirme çalışmasıdır. Gerilme dağılımı ve çatlak ilerleme sayısal analizleri, kırılma mekanikliği programı FRANC2D kullanılarak yapıldı. SCB numuneleri ile yapılan statik çapsal basma (indirekt çekme) testleri, çentikli çatlakların 45° çatlak eğim açısına (β) kadar açıldığını göstermiştir. ACB numunelerinin mod I (çekme) kırılma tokluğu (KIC) değerinin 0.45 MPa \sqrt{m} olduğu bulunmuştur. Öte yandan, $\beta=30^\circ$ için mod II kırılma tokluğu (KIIC) değeri 0.17 MPa \sqrt{m} ve $\beta=45^\circ$ için mod II değeri ise 0,19 MPa \sqrt{m} olarak bulunmuştur.

Sayısal analizde Kritik Çatlak Eşiği (CCT) çatlak uzunluğu 2-3 mm olarak bulunmuştur ki bu hem deneysel bulgular hem de CCT analitik analiz sonuçları ile uyumlu bir bulgudur. FRANC2D ile yapılan analizlerde kohezif ilerleyen çatlak yüzeyleri arasında en belirgin kayma 30° eğimli çatlak ile gözlenmiştir. Çatlak analizlerinden önce yapılan gerilme analizlerinde de en yüksek kesme gerilmesi 30° eğimli çatlak ile elde edilmiştir. Elde edilen sonuçlara göre bu çalışma, ASTM tarafından sadece mod I için önerilen ASTM8044 test standardı geliştirilerek, AC malzemelerin karışık mod I-II kırılma tokluğunun belirlenmesi için yeni bir uluslararası standart çalışmalarına yol gösterici olabileceği belirlenmiştir.

Anahtar Kelimeler: Bitümlü temel (ACB)', 'Kırılma mekanikliği ve Asfalt kompozitler', 'Asfalt kompozitlerde mod I ve mod II kırılma'

INVESTIGATING THE MIXED-MODE I-II DEFORMATION CHARACTERISTICS OF ASPHALT CONCRETE MATERIALS

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ABSTRACT

There is not any internationally recommended test yet to test the mixed mode I-II fracture toughness of asphalt composites. The American Society for Testing and Materials (ASTM) has proposed ASTM D8044 to test the tensile fracture toughness (mode I) of Asphalt Concrete (AC) materials using Semi-Circular Disc Bend (SCB) specimens. However, one of the main objectives of this study is to investigate the feasibility of the ASTM standard for analyzing the mixed mode I-II (stress and shear) fracturing of AC materials. The stress distribution and cohesive crack growth analysis were performed using the fracture mechanics program FRANC2D. Experimental results showed that the notched cracks opened at a 30° inclination angle (β) and kept opening up to β of 45°. The mode I fracture toughness (K_{IC}) value of Asphalt Concrete Base (ACB) specimens was found at 0.37 MPa \sqrt{m} . On the other hand, the K_{IC} value was found to be 0.44 MPa \sqrt{m} for the 30° inclined crack and 0.40 MPa \sqrt{m} for the $\beta=45^\circ$ inclined notch crack. The critical crack length was found to be 2-2.5 mm using CCT analysis. On the other hand, the critical crack length was found between 8 mm and 10 mm for the mixed mode (I-II) condition when the notch cracks are inclined at 30° and 45°. Experimental and numerical analysis results showed that the SCB test could be an appropriate geometry to determine the mixed mode I-II fracture toughness of AC materials when the crack is inclined at 30°.

Keywords

Fracturing of asphalt composites, cohesive crack modelling with asphalt, ASTM-D8044

