

# ABSTRACT BOOK



# KARADENİZ 12. ULUSLARARASI UYGULAMALI BİLİMLER



**KARADENİZ**  
**12th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES**  
March 3-5,2023  
Rize

ISBN : 978-625-6393-32-5

ACADEMY GLOBAL PUBLISHING HOUSE



*KARADENİZ  
12TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES  
MARCH 3-5, 2022  
RİZE*

*Edited By  
PROF. DR. HÜLYA ÇİÇEK*

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Issued: 15.03.2023  
**ISBN: 978-625-6393-32-5**

# ***CONFERENCE ID***

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## **KARADENIZ 12TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES**

**DATE – PLACE**  
**MARCH 3- 5, 2022**  
**RIZE**

**ORGANIZATION**  
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**EVALUATION PROCESS**  
All applications have undergone a double-blind peer review process.

**PARTICIPATING COUNTRIES**  
Turkey – Azerbaijan- Thailand - Malaysia - Iran- Egypt – India- Indonesia – Zurich ,  
Sudan - Cyprus – Pakistan - Australia. – Kuwait – Taiwan – Batna – Germany – Poland  
– Sweden – Palestine - Saudi Arabia, – Canada

**PRESENTATION**  
Oral presentation

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

**LANGUAGES**  
Turkish, English, Russian, Persian, Arabic

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KARADENIZ 12th INTERNATIONAL CONFERENCE ON SOCIAL SCIENCES  
KARADENIZ 12th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES  
March 3 - 5, 2023  
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*KARADENIZ 12th INTERNATIONAL CONFERENCE ON SOCIAL SCIENCES*  
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## CONFERENCE PROGRAM

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## IMPORTANT, PLEASE READ CAREFULLY

- To be able to make a meeting online, login via <https://zoom.us/join> site, enter ID instead of “Meeting ID
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04. 03. 2023

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

Meeting ID: 827 8823 1932

Passcode: 350323

**HALL: 1 SESSION: 1**

**MODERATOR: DR. ÖĞR. ÜYESİ, AYSEL ARSLAN**

*MEHMET ASLAN  
DOÇ. DR. BÜLENT ALCI*

MESLEKİ VE TEKNİK LİSE ÖĞRETMENLERİNİN 21.YY BECERİLERİ  
ALGILARI İLE OKUL YÖNETİCİLERİNE YÖNELİK 21.YY  
BECERİLERİ ALGILARI ARASINDAKİ İLİŞKİ

PROF.DR, SAİT BULUT  
PHD STUDENT, GÜLHAN  
ÖZBAKIR DEMİREL  
GRADUATE STUDENTS,  
ZEYNEP KUBİLAY

INVESTIGATION OF THE EFFECT OF GARDEN-BASED  
EDUCATIONAL PRACTICES ON THE ACADEMIC MOTIVATION OF  
VOCATIONAL HIGH SCHOOL STUDENTS TO LEARN IN BIOLOGY

PROF.DR, SAİT BULUT  
PHD STUDENT, GÜLHAN  
ÖZBAKIR DEMİREL  
GRADUATE STUDENTS,  
ZEYNEP KUBİLAY

INVESTIGATION OF VOCATIONAL HIGH SCHOOL STUDENTS'  
ATTITUDES TO THE ENVIRONMENT

DR. ÖĞR. ÜYESİ, SENEM  
ÇOLAK YAZICI  
BARIŞ GÜNDOĞDU

KİMYA ÖĞRETMENLERİNİN DERSLERİNDE TEKNOLOJİ  
KULLANIMI VE TERS-YÜZ SINIF MODELİ KULLANIM  
DURUMLARININ İNCELENMESİ

AYSİMA DURMAZ  
ŞÜKRÜ ALTUNTAŞ  
ZEYNEP ALTUNTAŞ

TRADITIONAL APPROACHES AND INNOVATIVE PRACTICES IN  
SOCIAL STUDIES EDUCATION

DR. ÖĞR. ÜYESİ, AYSEL  
ARSLAN

ORTAÖĞRETİM ÖĞRENCİLERİNİN BAŞARI MOTİVASYONLARI

DR. ÖĞR. ÜYESİ, AYSEL  
ARSLAN

ÖĞRETMEN ADAYLARININ DİJİTAL OKUMA ÖZYETERLİKLERİ

DR. ÖĞR. ÜYESİ EMRAH  
ÖZBUĞUTU

OPINIONS OF SCIENCE TEACHERS ON THE 7TH GRADE SCIENCE  
TEXTBOOK

DR. ÖĞR. ÜYESİ AYŞE  
ARSLAN ÇAVUŞOĞLU

ALMANCA ÖĞRETMENLİĞİ MÜFREDATINDA YER ALAN ALMANCA  
ÖĞRETİMİNDE YAKLAŞIMLAR DERSİNE YÖNELİK DERS PLANI  
ÖNERİSİ



04. 03. 2023

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**HALL: 2 SESSION: 1**

**MODERATOR: DOÇ. DR. HÜSEYİN TUTAR**

MÍHAELA CUREA  
MARILENA MIRONIUC  
MARIA CARMEN HUIAN

ACHILLES HEEL OF THE FINANCIAL STATEMENTS

DR.ÖĞR.ÜYS. ZEKERİYA ŞAHİN  
DR.ÖZGÜR ARLI

IMPORTANCE OF DIGITAL TRANSFORMATION AND EMPLOYEE  
COLLABORATION RELATIONS FOR SUSTAINABILITY IN  
BUSINESSES

DOÇ. DR. HÜSEYİN TUTAR

KALKINMA AJANSLARININ YEREL AKTÖRLER ARASINDAKİ İŞ  
BİRLİĞİNİN GELİŞİMİ ÜZERİNDEKİ ETKİSİ

ARŞ. GÖR. PINAR SARP  
ARŞ. GÖR. DR. SELÇUK YEKE

İNSAN KAYNAKLARI YÖNETİMİNDE YENİ DÖNÜŞÜM: İNSAN &  
KÜLTÜR DEPARTMANI

DR, DİDEM GEZMİŞOĞLU ŞEN

YENİ NESİL İKİNCİ EL MAĞAZA ATMOSFERİNİN ANLIK SATIN  
ALMA DAVRANIŞINA ETKİSİ

ASSOC. PROF. DR. ALİ APALI  
TUĞBA ÇULCU

ADVENTURE OF ACCOUNTING PROFESSION DURING THE PAST  
CENTURY

ASSOC. PROF. DR. ALİ APALI  
TUĞBA ÇULCU

ACCOUNTING FINDINGS IN THE BABYLONIAN KING AMMI-  
SADUQA'S ORDINANCE

DR. ÖĞR. ÜYESİ, TUBA  
GÜLCEMAL  
DOÇ. DR. ZEKAİ ŞENOL

BORSALAR ARASINDAKİ VOLATİLİTE YAYILIMLARI: BRICS+T  
ÜLKELERİ ÖRNEĞİ

DR. ÖĞR. ÜYESİ BORA ÖÇAL

TÜRKİYE CUMHURİYETİ DEVLET DEMİRYOLLARI TEKNİK  
PERSONELİNİN DEMİRYOLU LOJİSTİK FAALİYETLERİ  
HAKKINDAKİ FARKINDALIKLARININ DEĞERLENDİRİLMESİ

DR.ÖĞR.ÜYESİ ARİFE  
ÖZDEMİR HÖL

RELATIONS BETWEEN CLEAN ENERGY AND PRECIOUS METALS:  
FREQUENCY DOMAIN CAUSALITY TEST

DR. GÜVEN ŞAHİN

TARIM ÜRÜNLERİNDE MARKALAŞMA VE BUNLARIN KATMA  
DEĞERLİ HALE GETİRİLMESİ: TÜRKİYE ELMALARI ÖZELİNDE BİR  
İNCELEME



04. 03. 2023

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**HALL: 3 SESSION: 1**

**MODERATOR:**

**DR. ÖĞR. ÜYESİ, YASİN SÖĞÜT**

DR.ÖĞR.ÜYESİ ALİ İSKENDER

EXAMINATION OF ENGLISH POSTERS PREPARED BY THE  
MINISTRY OF CULTURE and TOURISM

ÖĞR. GÖR. DR., ZUHAL DEMİR

KİMLİK VE ‘ÖTEKİ’LİĞİN İNŞASINDA GAZETELERİN ROLÜ:  
İLETİŞİM ÇALIŞMALARINDA VARLIK VERGİSİ

DR. ÖĞR. ÜYESİ, YASİN  
SÖĞÜT

YENİ MEDYADA POPÜLER ALANLAR: NETFLİX “YOU” DİZİSİNDE  
BİREYE EĞLENCE VE KÜLTÜR ÖNERMELERİ

MEHMET EMİN DEREÇİNELİ

DİN OLGUSUNA SEMİH KAPLANOĞLU FİMLERİ ÜZERİNDEN  
METAFORİK ÖGELER BAĞLAMINDA DEĞERLENDİRME: ‘BUĞDAY  
FİLMİ ÖRNEĞİ’

YÜKSEK LİSANS ÖĞRENCİSİ  
FATİH KILIÇ

TWITTER’IN BÜYÜKŞEHİR BELEDİYELERİ TARAFINDAN HALKLA  
İLİŞKİLER ARACI OLARAK KULLANILMASI: SAKARYA  
BÜYÜKŞEHİR BELEDİYESİ ÖRNEĞİ

ŞEYMA NUR ATASOY  
DR. ÖĞR. ÜYESİ SÜLEYMAN  
BALCI

THE IMPORTANCE OF PSYCHOLOGICAL RESILIENCE TO ACHIEVE  
CAREER MATURITY FOR INDIVIDUALS

ARŞ. GRV. DR AYTEKİN  
ÇELİK  
ÖĞR. GRV. ENGİN TURĞUT

PSYCHO-SOCIAL CRITIQUE OF “GENERATION Z” IN SEARCH OF  
“EFFORTLESS LIFE” IN THE FOCUS OF BYUNG CHUL HAN’S  
CONCEPTUALIZATION OF “PALLIATIVE SOCIETY”

DR. ASLIHAN B. ÖZTÜRK  
ÇIPLAK

PROPERTY CRIMES, POVERTY AND SOCIAL EXCLUSION: A  
QUALITATIVE RESEARCH WITH JUVENILE OFFENDERS FROM  
TURKEY



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**HALL: 4 SESSION: 1**

**MODERATOR: DOÇ. DR. YASIN ULUTAŞ**

YL. ÖĞR. SÜMEYRA UÇAR

İSLAM FELSEFE GELENEĞİNDE KIDEM HUDÛS TARTIŞMALARI VE  
İMAM MÂTÜRÎDÎ'NİN ÂLEMİN KIDEMİ KONUSUNDA  
FİLOZOFLARI ELEŞTİRİSİ

DOÇ. DR. YASİN ULUTAŞ

REASONS THAT LEAD TO TAKFİRİ THOUGHT (HARİCİ EXAMPLE)

DR. MEHMET SULHAN

ROGER GARAUDY'NİN EKONOMİ VE MÛLKİYET ANLAYIŞI

DR. MEHMET SULHAN

WILLIAM JAMES'İN PRAGMATİZMİ BAĞLAMINDA DİN

EDA GÜNAY

STATES AND MAQAMS IN EARLY TIME SUFİSM

ASSOC. PROF. DR.  
ABDULKERİM BİNGÖL

KUR'AN'IN HİYERARŞİYE YAKLAŞIMI

ASSOC. PROF. DR. YAKUP  
YÜKSEL

KUR'AN'DA LÂ YESTEVÎ İLE BAŞLAYAN ÂYETLERİN KONUSU VE  
İÇERDİĞİ MESAJLAR

ASSOC. PROF. DR. YAKUP  
YÜKSEL

MÜFESSİR TÂHİR B. ÂŞÛR'UN İSRÂ SÛRESİ'NİN 70. ÂYETİ  
HAKKINDAKİ YORUMLARI

DR. ÖĞR. ÜYESİ RAMİ  
İBRAHİM MAHMUT

THEOLOGICAL PERSPECTIVES ON EARTHQUAKES IN ISLAM

DR. ÖĞR. ÜYESİ RAMİ  
İBRAHİM MAHMUT

REINCARNATION IN NUSAYRIS THOUGHT



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**Öngörü Yöntemleri Özel Oturumu (Special Session for Forecasting Methods)**

**HALL: 5**

**SESSION: 1**

**MODERATOR: Prof. Dr. Erol Eğrioğlu**

EMİNE KÖLEMEN  
ÖZLEM KARAHASAN  
TURAN CANSU  
PROF. DR. EREN BAŞ  
PROF. DR. EROL EĞRİOĞLU

DÜNYADAKİ TATLI SU KULLANIM MİKTARLARININ GEÇİTLİ  
TEKRARLAYAN BİRİM YAPAY SİNİR AĞI İLE ÖNGÖRÜSÜ

PROF. DR. EREN BAŞ  
PROF. DR. EROL EĞRİOĞLU

Pİ-SİGMA YAPAY SİNİR AĞI İÇİN YENİ BİR SAĞLAM ÖĞRENME  
ALGORİTMASI

PROF. DR. EREN BAŞ  
PROF. DR. EROL EĞRİOĞLU

BULANIK REGRESYON FONKSİYONLARI YAKLAŞIMLARI İLE  
BIST100 ÖNGÖRÜSÜ

PROF. DR. EROL EĞRİOĞLU  
PROF. DR. EREN BAŞ

GERİ BESLEMELİ Pİ-SİGMA YAPAY SİNİR AĞI İLE GİRESUN  
RÜZGAR HIZI ÖNGÖRÜSÜ

PROF. DR. EROL EĞRİOĞLU  
PROF. DR. EREN BAŞ

OTOMATİK ÖNGÖRÜ YÖNTEMİ İLE GİRESUN GÜNLÜK MİNİMUM  
SICAKLIK ÖNGÖRÜSÜ

ÖZLEM KARAHASAN  
TURAN CANSU  
EMİNE KÖLEMEN  
PROF. DR. EROL EĞRİOĞLU  
PROF. DR. EREN BAŞ

OECD ÜLKELERİNİN TATLI SU KULLANIM MİKTARLARININ  
WINSORİZE DENDRİTİK NÖRON MODEL YAPAY SİNİR AĞI İLE  
ÖNGÖRÜSÜ

TURAN CANSU  
ÖZLEM KARAHASAN  
EMİNE KÖLEMEN  
PROF. DR. EROL EĞRİOĞLU  
PROF. DR. EREN BAŞ

İSTANBUL AYLIK SU TÜKETİMİNİN UZUN KISA SÜRELİ HAFIZA İLE  
ÖNGÖRÜSÜ



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Meeting ID: 827 8823 1932		Passcode: 350323	
HALL: 6 SESSION: 1		MODERATOR: Kehinde Augustina Odukoya	
NUNTAPORN AUKKANIT	EFFECT OF DIFFERENT OILS ON QUALITY OF DEEP-FRIED DOUGH STICK		
ABTEHAL Y. ANAAS MOHD NAZMI BIN ABD. MANAP	ASSOCIATION BETWEEN SINGLE NUCLEOTIDE POLYMORPHISM OF CALPAIN1 GENE AND MEAT TENDERNESS TRAITS IN DIFFERENT GENOTYPES OF CHICKEN: MALAYSIAN NATIVE AND COMMERCIAL BROILER LINE		
AMIR SABER GHARAMALEKI, BEITOLLAH ALIPOUR ZEINAB FAGHFOORI AHMAD YARIKHOSROUSHAHI	PROPHYLACTIC EFFECTS OF DAIRY KLUYVEROMYCES MARXIANUS YAS THROUGH OVEREXPRESSION OF BAX, CASP 3, CASP 8 AND CASP 9 ON HUMAN COLON CANCER CELL LINES		
KHAIRUL BARIAH SULAIMAN TAJUL ARIS YANG	COLOR CHARACTERISTICS OF DRIED COCOA USING SHALLOW BOX FERMENTATION TECHNIQUE		
AHMED M. S. HUSSEIN SAHAR Y. AL-OKBI	EVALUATION OF BAKERY PRODUCTS MADE FROM BARLEY-GELATINIZED CORN FLOUR AND WHEAT-DEFATTED RICE BRAN FLOUR COMPOSITES		
MAMTA KUMARI SHASHI JAIN	SCREENING OF POTENTIAL SOURCES OF TANNIN AND ITS THERAPEUTIC APPLICATION		
KUBRA SAYIN DERYA ARSLAN	ANTIOXIDANT PROPERTIES, ASCORBIC ACID AND TOTAL CAROTENOID VALUES OF SWEET AND HOT RED PEPPER PASTE: A TRADITIONAL FOOD IN TURKISH DIET		
DEWI FATMANINGRUM ADE WIRADNYANI	INADEQUACY OF MACRONUTRIENT AND MICRONUTRIENT INTAKE IN CHILDREN AGED 12-23 MONTHS OLD: AN URBAN STUDY IN CENTRAL JAKARTA, INDONESIA		



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<b>HALL: 7 SESSION: 1</b>		<b>MODERATOR: Naeem Ahmed</b>	
MAJEED MOHAMMED MIDHIN CLARE FINBURGH	TOM STOPPARD: THE AMORALITY OF THE ARTIST		
YESUSELVI MANICKAM TAN SOON CHIN	ASSESSMENT ON COMMUNICATION STUDENTS' INTERNSHIP PERFORMANCES FROM THE EMPLOYERS' PERSPECTIVE		
AHMED USMAN EGYE HAMZA MUHAMMAD	ANALYSIS OF POVERTY REDUCTION STRATEGIES AS MECHANISM FOR DEVELOPMENT IN NIGERIA FROM 1999-2019		
SAMIA AIT ALI YAHIA	ANALYSIS OF STELES WITH LIBYAN INSCRIPTIONS OF GRANDE KABYLIA, ALGERIA		
NAEEM AHMED	SOCIAL WORK PRACTICE TO LABOUR WELFARE: A PROPOSED MODEL OF FIELD WORK PRACTICUM AND ROLE OF SOCIAL WORKER IN INDIA		
SAYANTAN KHANRA ROJERS P. JOSEPH	ADOPTION AND DIFFUSION OF E-GOVERNMENT SERVICES IN INDIA: THE IMPACT OF USER DEMOGRAPHICS AND SERVICE QUALITY		



04. 03. 2023

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**HALL: 8 SESSION: 1**

**MODERATOR:**

**Khodr Fasih**

ASMA MEHAN

PUBLIC SQUARES AND THEIR POTENTIAL FOR SOCIAL INTERACTIONS: A CASE STUDY OF HISTORICAL PUBLIC SQUARES IN TEHRAN

SAULE MUSSABEKOVA

ORENSIC MEDICAL CAPACITIES OF RESEARCH OF SALIVA STAINS ON PHYSICAL EVIDENCE AFTER WASHING

KHADIJA ALI

SEXUAL AND GENDER BASED CRIMES IN INTERNATIONAL CRIMINAL LAW: MOVING FORWARDS OR BACKWARDS?

FAHAD ALANAZI ANDREW JONES

A METHOD TO ENHANCE THE ACCURACY OF DIGITAL FORENSIC IN THE ABSENCE OF SUFFICIENT EVIDENCE IN SAUDI ARABIA

UMAR UBANDAWAKI

CONTROLLING YOUTHS PARTICIPATION IN POLITICS IN SOKOTO STATE: A CONSTRUCTIVE INCLUSIVENESS FOR GOOD GOVERNANCE IN NIGERIA

DINI DEWI HENIARTI

MILITARY COURT'S JURISDICTION OVER MILITARY MEMBERS WHO COMMIT GENERAL CRIMES UNDER INDONESIAN MILITARY JUDICIARY SYSTEM IN COMPARISON WITH OTHER COUNTRIES

ARMEN YEZEKYAN

THE LEGAL PROCEDURE OF ATTESTATION OF PUBLIC SERVANTS

KHODR FAKIH

THE OMBUDSMAN: DIFFERENT TERMINOLOGIES SAME MISSIONS





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HALL: 9	SESSION: 1	MODERATOR:	Marzieh Talebzadeh Shoushtari
MOHAMED M. ELSHERBINY		THE EFFECTIVENESS OF COGNITIVE BEHAVIOURAL INTERVENTION IN ALLEVIATING SOCIAL AVOIDANCE FOR BLIND STUDENTS	
MARZIEH TALEBZADEH SHOUSHTARI		THE EFFECTIVENESS OF METAPHOR THERAPY ON DEPRESSION AMONG FEMALE STUDENTS	
A. GAGAT-MATUŁA		FAMILY RELATIONSHIPS AND COPING WITH THE STRESS OF YOUNG PEOPLE FROM MIGRANT FAMILIES WITH CEREBRAL PALSY	
ASIF ALI DAUD SALIM FARUQUE		A QUASI-SYSTEMATIC REVIEW ON EFFECTIVENESS OF SOCIAL AND CULTURAL SUSTAINABILITY PRACTICES IN BUILT ENVIRONMENT	
ABDULKAREEM HUSSEIN BIBIRE		JOB SATISFACTION AND MOTIVATION AS PREDICTORS OF LECTURERS' EFFECTIVENESS IN NIGERIA POLICE ACADEMY	
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	
ASMITA SHUKLA SOMA PARIJA		IMPACT OF PERSONALITY AND LONELINESS ON LIFE: ROLE OF ONLINE FLOW EXPERIENCES	



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<b>HALL: 10</b>		<b>SESSION: 1</b>	
<b>MODERATOR:</b>		<b>Katerina Antoniou</b>	
ASHKAN EBADI ANDREA SCHIFFAUEROVA		GENDER DIFFERENCES IN RESEARCH OUTPUT, FUNDING AND COLLABORATION	
JAWAD ALZEER		SWISS SCIENTIFIC SOCIETY FOR DEVELOPING COUNTRIES: A CONCEPT OF RELATIONSHIP	
MIHO TSUKAMOTO		ACADEMIC LOSS IN JAPANESE SOCIETY: SUICIDE AND HARASSMENT	
AHMAD KHOIRUL UMAM		DEMOCRATIZATION, MARKET LIBERALIZATION AND THE RAISE OF VESTED INTERESTS AND ITS IMPACTS ON ANTI-CORRUPTION REFORM IN INDONESIA	
M. AMINU SANDA K. EWONTUMAH		ORGANIZATIONAL INVOLVEMENT AND EMPLOYEES' CONSUMPTION OF NEW WORK PRACTICES IN STATE-OWNED ENTERPRISES: THE GHANAIAN CASE	
KATERINA ANTONIOU		DE-SECURITIZING IDENTITY: NARRATIVE (IN)CONSISTENCY IN PERIODS OF TRANSITION	



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HALL: 11	SESSION: 1	MODERATOR:	AHMAD H. ABDELGWAD
R. SEKULA		MATERIAL CONCEPTS AND PROCESSING METHODS FOR ELECTRICAL INSULATION	
ALLURU GOPALA KRISHNA THELLA BABU RAO		PERFORMANCE ASSESSMENT OF CARBON NANO TUBE BASED CUTTING FLUID IN MACHINING PROCESS	
AYMEN LAADHARI		AN IMPLICIT METHODOLOGY FOR THE NUMERICAL MODELING OF LOCALLY INEXTENSIBLE MEMBRANES	
AHMAD H. ABDELGWAD		MICROSTRIP PATCH ANTENNA ENHANCEMENT TECHNIQUES	
LOCHAN BASYAL		EMAIL BASED GLOBAL AUTOMATION WITH RASPBERRY PI AND CONTROL CIRCUIT MODULE: DEVELOPMENT OF SMART HOME APPLICATION	
SHAIBU BAANNI AZUMAH WILLIAM ADZAWLA		EFFECT OF UREA DEEP PLACEMENT TECHNOLOGY ADOPTION ON THE PRODUCTION FRONTIER: EVIDENCE FROM IRRIGATION RICE FARMERS IN THE NORTHERN REGION OF GHANA	
NURLIANI, IDA ROSADA		STRATEGY IN CONTROLLING RICE-FIELD CONVERSION IN PANGKEP REGENCY, SOUTH SULAWESI, INDONESIA	
AYUKO ITSUKI SACHIYO ABURATANI		COMPARATIVE ANALYSIS OF SOIL ENZYME ACTIVITIES BETWEEN LAUREL-LEAVED AND CRYPTOMERIA JAPONICA FORESTS	



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Meeting ID: 827 8823 1932		Passcode: 350323	
HALL: 1 SESSION: 2		MODERATOR: ASSOC. PROF. DR. OKAN SEZER	
YUSUF AKBABA FATMA NECMİYE KACI	IN VITRO CYTOTOXIC AND ANTIBACTERIAL ACTIVITY OF SUBSTITUTED TETRAHYDRONAPHTHALEN-1-YL-PHENETHYL UREAS: SYNTHESIS AND BIOLOGICAL EVALUATION		
DOÇ. DR. DİLEK ÇAVUŞOĞLU PROF. DR. KÜRŞAT ÇAVUŞOĞLU PROF. DR. EMİNE YALÇIN PROF. DR. KÜLTİĞİN ÇAVUŞOĞLU	SOME ASPECTS OF THE PHYTOTOXIC ACTION OF FUSARIC ACID ON CERTAIN PHYSIOLOGICAL, CYTOGENETIC, BIOCHEMICAL, MOLECULAR AND ANATOMICAL PARAMETERS OF ALLIUM CEPA L. BULBS		
DOÇ. DR. DİLEK ÇAVUŞOĞLU PROF. DR. KÜRŞAT ÇAVUŞOĞLU	AN OVERVIEW INTO THE POTENTIAL ROLE OF CORONATINE, A BACTERIAL TOXIN, IN MITIGATING SALT STRESS IN ONION ROOTS		
АБДУЛЛАЕВА ШАХЛИА АЯЗ	FUNGAL DISEASES OF VEGETABLES IN THE CENTRAL CITIES OF AZERBAIJAN		
TUĞÇE AKMAN PROF. DR. ZEHRANUR YÜKSEKDAĞ DR. ÖĞR. ÜYESİ TUĞBA KILIÇ ÖĞR. GÖR. DR. BERAT ÇINAR ACAR	SCREENING OF BIOFILM FORMATION IN CHICKEN DELIVERED LACTIC ACID BACTERIA		
ASSIST. PROF. DR. ATA ESKİN	DETERMINATION OF THE LETHAL CONCENTRATIONS OF STERNBERGIA LUTEA (L.) (ALLIACEAE, AMARYLLIDOIDEAE) METHANOL EXTRACT ON GALLERIA MELLONELLA LARVAE (L.) (LEPIDOPTERA: PYRALIDAE)		
PROF. DR. İSMÜHAN POTOĞLU ERKARA ASSOC. PROF. DR. OKAN SEZER	ETHNOBOTANICAL VALUE OF ELAEAGNUS ANGUSTIFOLIA L. (ELEAGNACEAE) WHICH SHOWS NATURALLY DISTRIBUTION IN AND AROUND ESKİSEHIR		
PROF. DR. İSMÜHAN POTOĞLU ERKARA ASSOC. PROF. DR. OKAN SEZER	POLLEN MORPHOLOGY IN <i>Cotinus coggygria</i> Scop. (ANACARDIACEAE) SAMPLE ACCORDING TO ERDTMAN METHOD		
ASSOC. PROF. DR. OKAN SEZER PROF. DR. İSMÜHAN POTOĞLU ERKARA	POLLEN MORPHOLOGY IN <i>Chaenomeles speciosa</i> (Sweet) Nakai (ROSACEAE) SAMPLE ACCORDING TO WODEHOUSE METHOD		
ASSOC. PROF. DR. OKAN SEZER PROF. DR. İSMÜHAN POTOĞLU ERKARA	ETHNOBOTANICAL RESEARCHES ON <i>Hypericum montbretii</i> Spach THAT SHOWS NATURALLY DISTRIBUTION IN ESKİSEHIR AND ITS SURROUNDINGS		



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MODERATOR: DR. ÖĞR. ÜYESİ AHMET CAF

Z. F. DJUMAEVA

ON THE REPRODUCTION OF SOME FORAGE PLANTS OF THE  
GENUS ONOBRYCHIS(FABACEAE) IN THE ARID ZONE OF  
UZBEKISTAN

DR. ÖĞR. ÜYESİ AHMET CAF

YOĞUN KAR YAĞIŞI OLAN İLLERDE BİTKİSEL TASARIMIN  
İRDELENMESİ

PROF. DR. İSMET YILDIRIM  
ZİRAAT MÜHENDİSİ  
MUSTAFA SÖNMEZ  
ZİRAAT MÜHENDİSİ  
BATUHAN ŞİMŞEK

FINDIKTA KÜLLEME HASTALIĞINA (*Erysiphe corylacearum* BRAUN  
& TAKAM) KARŞI DOĞA DOSTU İLAÇLAMA PROGRAMLARI

ARAŞ.GÖR.DR., ELİF ÖZER  
DOÇ.DR., CÜNEYT DİNÇER

FARKLI HAMMADDELERDEN ALTERNATİF KEFİR ÜRETİMİ

DR. ÖĞRETİM ÜYESİ, NERGİS  
KAYA

ARONIA MELANOCARPA VE VITIS VINIFERA ÇEKİRDEĞİ  
EKSTRAKTI TİCARİ FORMÜLASYONUNUN ANTI-SİTOTOKSİK  
AÇIDAN DEĞERLENDİRİLMESİ



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**HALL: 3 SESSION: 2**

**MODERATOR: Prof. Dr. Naile BİLGİLİ**

K.R.PADMA  
K.R.DON

MENTAL HEALTH DISRUPTION AND LIFE STYLE CHANGE AMONG  
HEALTH CARE WORKERS DURING CORONA PANDEMIC

ÖĞR. GÖR. DR. FATMA  
ZEHRA GENÇ  
PROF. DR. NAİLE BİLGİLİ

THE EFFECT OF OTAGO EXERCISES ON FEAR OF FALLING,  
BALANCE, EMPOWERMENT AND FUNCTIONAL MOBILITY IN THE  
ELDERLY: A RANDOMIZED CONTROLLED TRIAL

ÖĞR. GÖR. DR. ARZU USLU  
ÖĞR. GÖR. DR. FATMA ZEHRA  
GENÇ

HEALTH EFFECTS OF IRISIN HORMONE AND NURSING

ARAŞTIRMA GÖREVLİSİ,  
PERVİN KÖKSEL  
DOKTOR ÖĞRETİM ÜYESİ,  
AYŞE TOPAL HANÇER

GERİATRİK CERRAHİ VE PERİOPERATİF YÖNETİMİ

DİLARA GÖZDENUR KÖSE  
VUSLAT ÖZTÜRK  
DR.ÖĞR.ÜYESİ MUSTAFA  
CİHANGİROĞLU  
DR.ÖĞR.ÜYESİ MUSTAFA  
ÇAPRAZ  
DR.ÖĞR.ÜYESİ AYLİN ÇAPRAZ  
DR.ÖĞR.ÜYESİ MEHMET ALİ  
GÜL  
DR.ÖĞR.ÜYESİ DUYGU TOZCU  
DOÇ. DR. AKIN TEKCAN

INVESTIGATION OF VITAMIN D RECEPTOR GENE BSMI VARIANT  
IN COVID- 19 PATIENTS WITH PANCREAS INVOLVEMENT

VUSLAT ÖZTÜRK  
DİLARA GÖZDENUR KÖSE  
DR.ÖĞR.ÜYESİ MUSTAFA  
ÇAPRAZ  
DR.ÖĞR.ÜYESİ MUSTAFA  
CİHANGİROĞLU  
DR.ÖĞR.ÜYESİ AYLİN  
ÇAPRAZ  
DR.ÖĞR.ÜYESİ DUYGU  
TOZCU  
DR.ÖĞR.ÜYESİ MEHMET ALİ  
GÜL  
DOÇ. DR. AKIN TEKCAN

COVID-19'LU HASTALARDA PANKREAS TUTULUMU İLE VDBP  
GENİ rs7041 VARYANTI İLİŞKİSİNİN ARAŞTIRILMASI



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**HALL: 4 SESSION: 2**

**MODERATOR: DR. ÖĞR. ÜYESİ, AHMET ERMAN ARAL**

DR. NAJM AL-DEEN M.  
YASEEN REAKANY

CIVIL SOCIETY IN THE NEW IRAQ (A STUDY ON THE ROLE OF  
CIVIL SOCIETY IN PROMOTING DEMOCRATIC TRANSITION IN  
POST-2003 IRAQ)

DR. ÖĞR. ÜYESİ, AHMET  
ERMAN ARAL

ÇAY KÜLTÜRÜNÜN KORUNMASINDA YENİ BOYUTLAR: UNESCO  
VE SOMUT OLMAYAN KÜLTÜREL MİRASIN KORUNMASI  
SÖZLEŞMESİ

DR. ÖĞR. ÜYESİ, YASİN  
AKYILDIZ

CURRENT PRACTICES ON SUBSTANCE ADDICTION

DR. ÖĞR. ÜYESİ, MEHMET  
SİNAN TAM

GÖSTERİŞÇİ TOPLUM VE POPÜLER KÜLTÜR BAĞLAMINDA  
INSTAGRAM'DA KAHVE TÜKETİMİNİN PAYLAŞIMI

DR. TOLGA KÖROĞLU

ANTROPOLOJİ, KÜLTÜREL ANTROPOLOJİ VE SOSYOLOJİ ÜZERİNE

YÜKSEK LİSANS ÖĞRENCİSİ  
SÜLEYMAN İLERİ  
DR. ÖĞR. ÜYESİ ELVAN  
ATAMTÜRK

SOSYAL HİZMET ALANI VE ELEŞTİREL PERSPEKTİF OLARAK  
ENDÜSTRİYEL SOSYAL HİZMET



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**HALL: 5 SESSION: 2**

**MODERATOR: DR. ÖĞR. ÜYESİ, GÖZDE TEKİN**

ARŞ. GÖR. FATMA ÖZTAT

İBN RÜŞD'ÜN BİLİM FELSEFESİNE KATKILARI: BURHAN METODU

DR. ÖĞR. ÜYESİ, GÖZDE  
TEKİN

GELENEKSEL BİLGİ VE AKTARIM BAĞLAMINDA KÜLTÜREL  
MİRAS UNSURU OLARAK KARADENİZ'DE YAYLACILIK GELENEĞİ

ÖĞR.GÖR.DR. RASİM BAĞIRLI

JOHNSON TSANG CREATED WITH CERAMIC PORTRAITS  
ON ARTISTIC LANGUAGE

SERKAN YAR

SÖMÜRGEÇİLİK SONRASI ÇEVİRİ METİNLERDE ÇEVİRMENİN  
'GÖRÜNÜRLÜĞÜ' VE 'GÖRÜNMEZLİĞİ'

YL. ÖĞRENCİSİ, NURCİHAN  
ATA

ÇORUMİ'NİN "REDDİ BATIL" ESERİNDE ŞİA'NIN SAHÂBE VE EHL-İ  
BEYT HAKKINDAKİ GÖRÜŞLERİNE TENKİTLERİ

GÜLTEN AKGÜL

THE THEME OF FAMILY IN THE NOVELS OF PRIDE AND  
PREJUDICE BY JANE AUSTEN AND YAPRAK DÖKÜMÜ BY REŞAT  
NURİ GÜNTEKİN

FERAY SARI

KISSA-İ KERİB GÂZİ VE MERD-İ HİCÂZİ ÜZERİNE





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**HALL: 6 SESSION: 2**

**MODERATOR:**

**Iorgos Hadjichristou**

IBRAHIM ABDEL GADIR  
MALIK DAFALLA SIDDIG  
DAFALLA  
ABDELAZIM IBRAHIM

ROCK SLOPE STABILIZATION AND PROTECTION FOR ROADS AND  
MULTI-STOREY STRUCTURES IN JABAL OMAR, SAUDI ARABIA

IORGOS HADJICHRISTOU

HYBRID LIVING: EMERGING OUT OF THE CRISES AND DIVISIONS

RAMIN JAVADZADEH  
EMAD JAVADZADEH

LOCATING CRITICAL FAILURE SURFACE IN ROCK SLOPE  
STABILITY WITH HYBRID MODEL BASED ON ARTIFICIAL IMMUNE  
SYSTEM AND CELLULAR LEARNING AUTOMATA (CLA-AIS)

AHMED T. FARID  
MUHAMMED RIZWAN

PREDICTION OF IN SITU PERMEABILITY FOR LIMESTONE ROCK  
USING ROCK QUALITY DESIGNATION INDEX

REZA ZIAIE MOAYED  
HAMIDREZA RAHMANI

EFFECT OF NANO-SIO<sub>2</sub> SOLUTION ON THE STRENGTH  
CHARACTERISTICS OF KAOLINITE

IRFAN AHMAD  
TAHIR SIDDIQUI  
RASHID AHMAD KHAN  
TAHIR MUNIR BUTT

ROOT GROWTH OF MORUS ALBA AS AFFECTED BY SIZE OF  
CUTTINGS AND POLYTHENE LOW TUNNEL

BEATE NIEMANN  
FABIAN PRAMEL

RENEWED URBAN WATERFRONT: SPATIAL CONDITIONS OF A  
CONTEMPORARY URBAN SPACE TYPOLOGY



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**MODERATOR:**

**Khawtar Hasan Ahmed**

AESLINA ABDUL KADIR  
ABBAS MOHAJERANI  
FELICITY RODDICK  
JOHN BUCKERIDGE

DENSITY, STRENGTH, THERMAL CONDUCTIVITY AND LEACHATE CHARACTERISTICS OF LIGHT-WEIGHT FIRED CLAY BRICKS INCORPORATING CIGARETTE BUTTS

MEHDI SAEIDMANESH  
RAZALI ISMAIL

CHANNEL LENGTH MODULATION EFFECT ON MONOLAYER GRAPHENE NANORIBBON FIELD EFFECT TRANSISTOR

KRISHNAIAH ARKANTI  
RAMULU MALOTHU

EXPERIMENTAL STUDY ON MECHANICAL PROPERTIES OF COMMERCIALY PURE COPPER PROCESSED BY SEVERE PLASTIC DEFORMATION TECHNIQUE-EQUAL CHANNEL ANGULAR EXTRUSION

DARIUSH SEMNANI  
HOSSEIN GHAYOOR

DETECTING AND MEASURING FABRIC PILLS USING DIGITAL IMAGE ANALYSIS

HABIB SHABAN

SYNTHESIS AND CHARACTERIZATION OF RECYCLED ISOTACTIC POLYPROPYLENE NANOCOMPOSITES CONTAINING DATE WOOD FIBER

KHAWTAR HASAN AHMED  
SASHA OMANOVIC

THE INFLUENCE OF SURFACE POTENTIAL ON THE KINETICS OF BOVINE SERUM ALBUMIN ADSORPTION ON A BIOMEDICAL GRADE 316LVM STAINLESS STEEL SURFACE

ULNAZIYA ISSABAYEVA  
MOHAMED KHEIREDDINE  
AROUA

REMOVAL OF COPPER AND ZINC IONS ONTO BIOMODIFIED PALM SHELL ACTIVATED CARBON



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**MODERATOR:**

**NGUYEN MINH TUAN**

YAHIA I. MOHAMED  
AHMED I. MARZOUK  
MOHAMED A. YACOUT

ISOLATION AND IDENTIFICATION OF DIACYLGLYCEROL  
ACYLTRANSFERASE TYPE- 2 (GAT2) GENES FROM THREE  
EGYPTIAN OLIVE CULTIVARS

NGUYEN MINH TUAN  
YEN CHUNG-RUEY

EFFECT OF VARIOUS POLLEN SOURCES TO ABILITY FRUIT SET  
AND QUALITY IN 'LONG RED B' WAX APPLE

JAFAR KHAN KASI  
AJAB KHAN KASI  
MUZAMIL BOKHARI

ELECTROCHEMICAL PERFORMANCE OF CARBON NANOTUBE  
BASED SUPERCAPACITOR

MOHD SIDEK AHMAD  
ZAINON MOHD NOOR  
ZAIDAH ZAINAL ARIFFIN

ISOLATION AND IDENTIFICATION FIBRINOLYTIC PROTEASE  
ENDOPHYTIC FUNGI FROM HIBISCUS LEAVES IN SHAH ALAM

SHWETA KUMARI  
PARMJIT S. PANESAR  
MANAB B. BERA

STATISTICAL MODELING FOR PERMEABILIZATION OF A NOVEL  
YEAST ISOLATE FOR B-GALACTOSIDASE ACTIVITY USING  
ORGANIC SOLVENTS

ALI MOHAMADI SANI

INHIBITORY EFFECT OF HELICHRYSUM ARENARIUM ESSENTIAL  
OIL ON THE GROWTH OF FOOD CONTAMINATED  
MICROORGANISMS

MOUNA MALLEM,  
MAJID TLIDJANE

INFLUENCE OF THE FIELD TYPE (MOUNTAIN AND PLAIN) ON THE  
CUPRIC STATUS OF LAMBS



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PARCHAMI A. FATAHIAN DEHKORDI RF	SEX DIFFERENCES IN THYROID GLAND STRUCTURE OF RABBITS		
ISMAIL I. ABO GHANEMA KADRY M. SADEK	OLIVE LEAVES EXTRACT RESTORED THE ANTIOXIDANT PERTURBATIONS IN RED BLOOD CELLS HEMOLYSATE IN STREPTOZOTOCIN INDUCED DIABETIC RATS		
AHMAD KHALESIZADEH ALIREZA VAKILI MOHSEN DANESH MESGARAN REZA VALIZADEH	THE EFFECTS OF GARLIC OIL (ALLIUM SATIVA), TURMERIC POWDER (CURCUMA LONGA LINN) AND MONENSIN ON TOTAL APPARENT DIGESTIBILITY OF NUTRIENTS IN BALOOCHI LAMBS		
AGATA KOWALSKA RADOSŁAW K. KOWALSKI ZDZISŁAW ZAKĘŚ	THE EFFECT OF SELECTIVE CYCLOOXYGENASE (COX) INHIBITORS ON JAPANESE MEDAKA (ORYZIAS LATIPES) REPRODUCTION PARAMETERS		
ALI NOURI EMAMZADEH	THE RELATIONSHIP BETWEEN EXCRETA VISCOSITY AND TMEN IN SBM		
E. RAMARAJ, A. PADMAPRIYA	PRAGATI NODE POPULARITY (PNP) APPROACH TO IDENTIFY CONGESTION HOT SPOTS IN MPLS		
S. ASADZADEH VOSTAKOLAEI	EFFECT OF L-ARGININE ON NEUROMUSCULAR TRANSMISSION OF THE CHICK BIVENTER CERVICIS MUSCLE		



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ÅSA SMEDBERG		TO DESIGN HOLISTIC HEALTH SERVICE SYSTEMS ON THE INTERNET	
ELHAM RASTEGARI AMIRMASOOD RAHMANI SAEED SETAYESHI		PERVERSIVE COMPUTING IN HEALTHCARE SYSTEMS	
S.S.MOHANAVALLI SHEILA ANAND		SECURITY ARCHITECTURE FOR AT-HOME MEDICAL CARE USING SENSOR NETWORK	
ALIREZA SHIRVANI SHADI EBRAHIMI MEHRABANI		EXPLORING THE APPLICATION OF KNOWLEDGE MANAGEMENT FACTORS IN ESFAHAN UNIVERSITY'S MEDICAL COLLEGE	
SALAMA MEGHRICHE, AMER DRAA MOHAMMED BOULEMDEN		ON THE ANALYSIS OF A COMPOUND NEURAL NETWORK FOR DETECTING ATRIO VENTRICULAR HEART BLOCK (AVB) IN AN ECG SIGNAL	
KIRANMAI S.RAI		NEUROGENIC POTENTIAL OF CLITORIA TERNATEA AQUEOUS ROOT EXTRACT–A BASIS FOR ENHANCING LEARNING AND MEMORY	
MAHMOOD AHMAD, GHULAM MURTAZA SONIA KHILJEE MUHAMMAD ASADULLAH MADNI		VALIDATION AND APPLICATION OF A NEW OPTIMIZED RP-HPLC-FLUORESCENT DETECTION METHOD FOR NORFLOXACIN	
SANAË KAEWNOPPARAT NATTHA KAEWNOPPARAT		FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS	



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HALL: 11	SESSION: 2	MODERATOR:	KIRANMAI S.RAI
SANDHYA RIJAL SAROJ ADHIKARI RAMESH R. PANT	NON-TIMBER FOREST PRODUCTS AND LIVELIHOOD LINKAGES: A CASE OF LAMABAGAR, NEPAL		
ERIC HAWKINSON EDGARAS ARTEMCIUKAS	SIMPLIFIED MOBILE AR PLATFORM DESIGN FOR AUGMENTED TOURISM		
NGONO MINDZENG TERENCEA	COMMUNITY BASED TOURISM AND DEVELOPMENT IN THIRD WORLD COUNTRIES: THE CASE OF THE BAMILEKE REGION OF CAMEROON		
ELDAH EPHRAIM BUBA	AN EVALUATION OF TOURISM EDUCATION IN NIGERIA'S HIGHER INSTITUTIONS		
BITA MASHAYEKHI MOHAMMAD ARA	ACTIVITY-BASED COSTING IN THE HOSPITALITY INDUSTRY: A CASE STUDY IN A HOTEL		
CHUKIAT CHAIBOONSRI SATAWAT WANNAPAN	ASYMMETRICAL INFORMATIVE ESTIMATION FOR MACROECONOMIC MODEL: SPECIAL CASE IN THE TOURISM SECTOR OF THAILAND		
MAJA MARTINOVIC VALENTINA ZARKOVIC HRVOJE MALJAK	POTENTIAL OF CROATIA AS AN ATTRACTIVE TOURIST DESTINATION FOR THE RUSSIAN MARKET		
CHUTIMA KLAYSUNG	BEHAVIORS AND FACTORS AFFECTING THE SELECTION OF SPA SERVICES AMONG CONSUMERS IN AMPHAWA, SAMUT SONGKHRAM, THAILAND		



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**HALL: 1 SESSION: 1**

**MODERATOR: Prof. Dr. Murat KİBAR**

PROF. DR. MURAT KİBAR

RANDEVULU KASTASYON YAPILAN KEDİLERDE TESTİS İÇİ  
LİDOKAİN VE PROKAİN UYGULAMASININ HEMODİNAMİK  
DEĞERLERE ETKİLERİNİN KARŞILAŞTIRILMASI

PROF. DR. MURAT KİBAR

KÖPEKLERDE MEDETOMİDİN/KETAMİN ANESTEZİSİNİN VE  
BUNUN ATİPAMEZOL İLE ETKİNİN TERS ÇEVİRİLMESİNİN  
EKOKARDİOGRAFİK DEĞERLER ÜZERİNDEKİ ETKİLERİ

DR. ZEHRA ALBAY

HIGH PRESSURE APPLICATIONS IN REDUCED-FAT CHEESE

ARŞ. GÖR. DR. ESRA ESİN  
YÜCEL  
PROF. DR. CEMAL KAYA

EFFECT OF TANNASE ENZYME APPLICATION ON COLOR AND  
SENSORY PROPERTIES OF BLACK TEA EXTRACTS

DR. ÖĞR. ÜYESİ SERTAN  
ÇEVİK

KADMİYUM STRESİNE MARUZ BIRAKILAN ARPA TOHUMLARINDA  
DIŞSAL ASKORBAT UYGULAMASININ ÇİMLENME PARAMETRELERİ  
ÜZERİNE ETKİLERİNİN İNCELENMESİ

ASSOCIATE PROFESSOR,  
SEVDA BORAN TORUN

THE PERFORMANCE OF WOOD MATERIAL DURING NATURAL  
WEATHERING

ASSIST. PROF. DR. MEHMET  
EMİN ŞEKER  
ASSIST. PROF. DR. AYÇA  
AKTAŞ KARAÇELİK

DETERMINATION OF PHENOLIC CONTENTS AND ANTIOXIDANT  
ACTIVITIES OF THREE PLANTS COLLECTED FROM GİRESUN



05. 03. 2023

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

Meeting ID: 827 8823 1932

Passcode: 350323

**HALL: 2 SESSION: 1**

**MODERATOR: DR. ÖĞR. ÜYESİ, HALİM BAŞ**

FERİDUN KAYA  
OKAN YETİŞENSOY  
FATİH AYDIN  
MEVA DEMİR KAYA

YAPAY ZEKÂ KORKUSU ÖLÇEĞİNİN TÜRKÇE' YE UYARLAMA  
ÇALIŞMASI

ÖĞRETMEN, NİL AYKOL  
DOÇ. DR., ÖNER USLU

PSİKOLOJİK İHTİYAÇLARA DUYARLI ÖĞRETİM STİLİ ÖLÇEĞİNİN  
GELİŞTİRİLMESİ

DOÇ. DR., ÖNER USLU  
ÖĞRETMEN, NİL AYKOL

ÖĞRETME MOTİVASYONU ÖLÇEĞİNİN PSİKOMETRİK  
ÖZELLİKLERİNİN ÖĞRETMENLER İÇİN İNCELENMESİ

UĞUR NADİR DEMİRBİLEK  
PROF. DR., MEHMET  
BAHADDİN ACAT

SOSYAL BECERİLERİN İLKÖĞRETİM SOSYAL BİLGİLER DERS  
PROGRAMINDA YER ALMA DURUMU

DR. ÖĞR. ÜYESİ, HALİM BAŞ

DETERMINING STRATEGIES TO REDUCE THE SOCIAL EXCLUSION  
OF INTERNATIONAL STUDENTS: EVALUATION WITH FUZZY  
DEMATEL

DR. ÖĞR. ÜYESİ BUĞRA  
ÇAĞATAY SAVAŞ  
DR. ÖĞR. ÜYESİ  
MUHAMMET MAVİBAŞ  
ARŞ. GÖR. BURAK KARABABA

SPOR BİLİMLERİ FAKÜLTESİNDEKİ ÖĞRENCİLERİN SPORCU  
KİMLİĞİ DÜZEYLERİNİN İNCELENMESİ





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**HALL: 3 SESSION: 1**

**MODERATOR: Dr. Tuğba ASLAN**

DR. TUĞBA ASLAN

BECOMING THE KNOWLEDGEABLE TO REPAIR THE PEERS IN L2  
CONVERSATIONS

DR. TUĞBA ASLAN

GENDER PATTERNS OF TEACHERS PORTRAYED IN TURKISH EFL  
COURSEBOOKS

ÖĞRETMEN, BURCU SAĞSÖZ  
DOÇ. DR. MELTEM YALIN  
UÇAR

ORTAOKUL ÖĞRETMENLERİNİN LİSANSÜSTÜ EĞİTİME YÖNELİK  
GÖRÜŞLERİ

ÖĞRETMEN ÖMRÜYE  
DURMUŞ YEŞİL  
DOÇ.DR. MELTEM YALIN  
UÇAR

ÖĞRETMENLERİN ETWINNING PROJELERİ HAKKINDAKİ  
GÖRÜŞLERİ (DİDİM ÖRNEĞİ)

ÖĞRETMEN, FERİDE EYRİ  
DOÇ. DR. MELTEM YALIN  
UÇAR

MESLEK LİSESİ ÖĞRENCİLERİNİN EDEBİYAT DERSİNE İLİŞKİN  
GÖRÜŞLERİ

ARŞ. GÖR. ABDULKADİR  
OKCU

SOSYAL BİLGİLER 6. VE 7. SINIF DERS KİTAPLARININ TÜRKİYE  
YETERLİLİKLER ÇERÇEVESİ KAPSAMINDA DEĞERLENDİRİLMESİ

KAMİLE KILIÇKAYA  
PROF. DR ALİ MEYDAN

6. SINIF SOSYAL BİLGİLER DERS KİTABINDA YER ALAN BEŞERİ  
COĞRAFYA İLE İLGİLİ BAZI KAVRAMLARA İLİŞKİN  
ÖĞRENCİLERİN YETERLİLİKLERİNİN BELİRLENMESİ



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**HALL: 4 SESSION: 1**

**MODERATOR: DR. ÖĞR. ÜYESİ HALİL KANADIKIRIK**

DR. ÖĞR. ÜYESİ HALİL  
KANADIKIRIK

FROM GIFT TO POWER: ON THE RELATIONSHIP BETWEEN THE  
IRRATIONAL CONSUMPTION AND THE LEGITIMACY OF  
POLITICAL AUTHORITY

DR.EMİNE ATEŞ TAN

ÖĞRENME TEORİSİ ÇERÇEVESİNDE DEMOKRAT PARTİ VE  
NATO'YA GİRİŞ SÜRECİ

HAMZA TÜRKMEN

ÖRTÜLÜ ÖRGÜTLERİN ORTAYA ÇIKARILMASINDA SOSYAL AĞ  
ANALİZİ YÖNTEMLERİNİN KULLANILMASI

DR. FATİH GÜLER

DEPREM AFETİ ETKİLERİNİN AZALTILMASINDA TAVŞANCIL  
BELEDİYESİ ÖRNEĞİ: İSTİSNA MI? ÜTOPYA MI? PARADOKS MU?

DR. FATİH GÜLER

DOĞAL AFETLER NEDENİYLE SEÇİMLERİN GERİYE BIRAKILMASI

Asst. Prof. Dr. İLHAN BİLİCİ  
INSTRUCTOR ÖZLEM UTKU  
BİLİCİ

A MODERATE ATTEMPT TO CRITICALLY ANALYSE A DISCOURSE:  
A REPRESENTATIVE EXAMPLE OF A POLITICAL SPEECH

DOKTORA ÖĞRENCİSİ,  
GÜLŞAH ÇETİN

ECONOMIC APPROACH WITHIN THE FRAMEWORK OF TAX  
COMPLIANCE

FAHMİ BABAYEV

THE INCREASING IMPORTANCE OF THE ECONOMY IN AZERBAIJAN-  
TURKEY RELATIONS

FAHMİ BABAYEV

ASSESSMENT OF MILİTARY RELATIONS BETWEEN AZERBAIJAN  
AND ISRAEL

HİKMATULLAH WAHIDI

AN ANALYSIS ON THE PROBLEM OF THE MUNICIPAL PERSONNEL  
SYSTEM IN AFGHANISTAN

YÜKSEL KÜÇÜKER

BİR İNGİLİZ RAPORUNA GÖRE TÜRK-YUNAN MÜBADELE ALT  
KOMİSYONUN SAMSUN VE TRABZON'DAKİ FAALİYETLERİ



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**HALL: 5**

**SESSION: 1**

**MODERATOR: DOÇ.DR., BÜLENT EŞİYOK**

CHEMS EDDINE BOUKHEDIMI

IMPACT OF NATIONALITY ON THE WILLINGNESS TO PAY FOR ORGANIC FOOD: INTERNATIONAL SURVEY

DOKTOR ÖĞRETİM ÜYESİ,  
GÜRKAN ATEŞ

SERMAYE PİYASALARINDA KÜÇÜK YATIRIMCILARIN KORUNMASI YÖNELİK ÇALIŞMA

**DR. ÖĞR. ÜYESİ BORA  
YILDIRIM**

A SUSTAINABLE DESIGN PROPOSAL FOR PLASTIC PACKAGING

DR. ÖĞR. ÜYESİ YUSUF DİNÇ

BDS 701 KAPSAMINDA BAĞIMSIZ DENETİM RAPORLARINDA YER ALAN KİLİT DENETİM KONULARI: BİST İMALAT SEKTÖRÜNDE BİR UYGULAMA

DR. ÖĞR. ÜYESİ YUSUF DİNÇ

BAĞIMSIZ DENETİMDE ZORUNLU ROTASYON UYGULAMASININ BAĞIMSIZ DENETİM KALİTESİ ÜZERİNE ETKİSİ: BİST İMALAT SEKTÖRÜNDE BİR ARAŞTIRMA

DOÇ.DR., BÜLENT EŞİYOK

GİRDİ TEDARİK STRATEJİSİ PLANI ÜZERİNE BİR DEĞERLENDİRME

DR. ÖĞR. ÜYESİ, BUKET  
ÇATAKOĞLU AYDIN

AÇIK BANKACILIK UYGULAMALARININ HUKUKİ BOYUTU

ARAŞTIRMA GÖREVLİSİ,  
BÜKRE ASLAN SAVAŞAN  
PROF. DR., ATILLA AKBABA

VEJETARYEN VE VEGAN RESTORAN ARAŞTIRMALARININ BİBLİYOMETRİK ANALİZİ

ASST. PROF. DR. RAFET  
BEYAZ

ANALYSIS OF THE RELATIONSHIP BETWEEN TOP MANAGEMENT MARKETING CAPABILITIES AND BRAND VALUE

EMİN GÜLDEN  
ÖĞR. GÖR. SELMA LUBABE  
ERDOĞAN

LEZZET ALGISINDA GÜNCEL BİR AKIM - GASTROFİZİK

**PHD STUDENT BAĞDAGÜL  
GÜMÜŞ AKYOL**  
ASST. PROF. SİNAN YILMAZ

STEWARDSHIP THEORY AND FEATURES THE STEWARD MUST HAVE



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<b>HALL: 6</b>	<b>SESSION: 1</b>	<b>MODERATOR: GERGELY HORVÁTH</b>	
LASZLO VARI	FREEDOM WITH LIMITATIONS: THE NATURE OF FREE EXPRESSION IN THE EUROPEAN CASE-LAW		
EREZ COHEN	THE IMPACT OF GLOBALIZATION ON THE DEVELOPMENT OF ISRAEL ADVANCED CHANGES		
GERGELY HORVÁTH	THE TWO LAYERS OF FOOD SAFETY AND GMOS IN THE HUNGARIAN AGRICULTURAL LAW AUTHORS: GERGELY HORVÁTH		
MARÍA JOSÉ BENÍTEZ JIMÉNEZ	JURISPRUDENCIAL ANALYSIS OF TORTURE IN SPAIN AND IN THE EUROPEAN HUMAN RIGHTS SYSTEM		
MOHSEN DAVARZANI EHSAN LAME MOHAMMAD TAGHI HASSAN ZADEH	REVIEWING THE RELATION OF LANGUAGE AND MINORITIES' RIGHTS		
ADA YURMAN	THE SOCIAL REACTION TO THE WADI SALIB RIOTS (1959) AS REFLECTED IN CONTEMPORARY ISRAELI PRESS		
DIYA SARKAR PRAFULLA C. MISHRA	AN ANALYTICAL STUDY ON THE POLITICS OF DEFECTION IN INDIA		
ISAIAS TEKLIYA BERHE	THE ETHIO-ERITREA CLAIMS COMMISSION ON USE OF FORCE: ISSUE OF SELF-DEFENSE OR VIOLATION OF SOVEREIGNTY		
MARISA CATARINA DA CONCEIÇÃO DINIS	DIRECTORS' DUTIES, CIVIL LIABILITY, AND THE BUSINESS JUDGMENT RULE UNDER THE PORTUGUESE LEGAL FRAMEWORK		



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HALL: 7	SESSION: 1	MODERATOR: ASSOC. PROF. DR. YOKO SUGANUMA OI	
DR. ABA-CARINA PÂRLOG	READING AGAINST THE GRAIN: TRANSCODIFYING STIMULUS MEANING		
DARIA N. PODVIGINA, TATIANA V. CHERNIGOVSKAYA	TOP-DOWN INFLUENCES TO MULTISTABLE PERCEPTION: EVIDENCE FROM TEMPORAL DYNAMICS		
LECTURE MAY GEORGE	THE EFFECTS OF THE INFERENCE PROCESS IN READING TEXTS IN ARABIC		
ROSE SHAYEGHI PEJMAN HOSSEINIOUN	THE RELATIONSHIP BETWEEN IRANIAN EFL LEARNERS' MULTIPLE INTELLIGENCES AND THEIR PERFORMANCE ON GRAMMAR TESTS		
ASSOC. PROF. DR. YOKO SUGANUMA OI	EFFICACY OF SELF-ASSESSMENT IN WRITTEN PRODUCTION AMONG HIGH SCHOOL STUDENTS		
AZIZEH CHALAK NILOUFAR NASRI	THE INTERPLAY OF LOCUS OF CONTROL, ACADEMIC ACHIEVEMENT, AND BIOLOGICAL VARIABLES AMONG IRANIAN ONLINE EFL LEARNERS		
DR. AZIZEH CHALAK FIROUZEH BAKTASH	AN INVESTIGATION ON STUDENTS' RETICENCE IN IRANIAN UNIVERSITY EFL CLASSROOMS		
CHAIWAT TANTARANGSEE	A SURVEY OF 2ND YEAR STUDENTS' FREQUENT ENGLISH WRITING ERRORS AND THE EFFECTS OF PARTICIPATORY ERROR CORRECTION PROCESS		
PROF. DR. ROWLAND M. BRUCKEN	BOTSWANA AND NATION-BUILDING THEORY		
PHD. CAN. ABDUL AMIR HAZBAVI	PERCEPTION AND IMPLEMENTATION OF MACHINE TRANSLATION APPLICATIONS BY THE IRANIAN ENGLISH TRANSLATORS		



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<b>HALL: 8</b>		<b>SESSION: 1</b>	
<b>MODERATOR: ASSIS. PROF.KATHARINA BUTTENBERG</b>			
HELENE ELLER		CORPORATE GOVERNANCE AND CORPORATE SOCIAL RESPONSIBILITY: RESEARCH ON THE INTERCONNECTION OF BOTH CONCEPTS AND ITS IMPACT ON NON-PROFIT ORGANIZATIONS	
ASSIS. PROF.KATHARINA BUTTENBERG		0 THE INFLUENCE OF CONSUMER AND BRAND-ORIENTED CAPABILITIES ON BUSINESS PERFORMANCE IN YOUNG FIRMS: A QUANTITATIVE CAUSAL MODEL ANALYSIS	
PROF. DR. MOSSES E. LUFUKE		ENVIRONMENTAL IMPACT OF TRADE SECTOR GROWTH: EVIDENCE FROM TANZANIA	
PISIT POTJANAJARUWIT		THE CORPORATE VISION EFFECT ON RAJABHAT UNIVERSITY BRAND BUILDING IN THAILAND	
NARONG ANURAK		PUBLIC RELATIONS FOR THE FACULTY OF MANAGEMENT SCIENCE IN SUAN SUNANDHA RAJABHAT UNIVERSITY	
DR. CHARAWEE BUTBUMRUNG		CUSTOMER RELATIONSHIP MANAGEMENT ON SOCIAL MEDIA AFFECTING BRAND LOYALTY OF SIAM COMMERCIAL BANK IN BANGKOK	
DR. SUPAPORN WIMONCHAILERK		CREATE AND DESIGN VISUAL PRESENTATION TO PROMOTE THAI CUISINE	
MANANYA MEENAKORN		THE QUALITY OF WORKING LIFE AND THE ORGANIZATIONAL COMMITMENT OF MUNICIPAL EMPLOYEE IN SAMUT SAKHON PROVINCE	
JINGYA LIU YUE WU JIABIN LUO		OPTIMISATION OF INTERMODAL TRANSPORT CHAIN OF SUPERMARKETS ON ISLE OF WIGHT, UK	
NAZIRA KAKULIA		THE CHARACTERISTICS OF TRANSFORMATION OF INSTITUTIONAL CHANGES AND GEORGIA	



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HALL: 9		SESSION: 1	
MODERATOR: DR. FURY KHRISTIANTY FITRIYAH			
MÁRIA HUDÁKOVÁ MÁRIA LUSKOVÁ	RISK MANAGEMENT THROUGH CONTROLLING IN INDUSTRIAL ENTERPRISES OPERATING IN SLOVAKIA		
DR. FURY KHRISTIANTY FITRIYAH	THE ROLE OF THE INTERNAL AUDIT UNIT IN DETECTING AND PREVENTING FRAUD AT PUBLIC UNIVERSITIES IN WEST JAVA, INDONESIA		
HOSSEIN TAHERIAN FAR ALI BAZAEI	EVALUATING EFFICIENCY OF NINA DISTRIBUTION COMPANY USING WINDOW DATA ENVELOPMENT ANALYSIS AND MALMQUIST INDEX		
JAVAD ELKAIE BEHJATI MEHRZAD MINOUEI	THE MODEL TO CALCULATE THE COST OF MONEY TO THE BREAKDOWN OF DEPOSITS AND BANKING SERVICE		
KUPPUSAMY SINGARAVELLOO ZAHRA KAMIAB	THE RELATIONSHIP BETWEEN HUMAN VALUES AND SERVICE QUALITY WITH THE MEDIATING ROLE OF MOTIVATION: A QUANTITATIVE STUDY ON MALAYSIAN COMMERCIAL BANKS		
PHD. SITI MUTMAINAH ASSIS. PROF. SLAMET SUGIRI	THE INFLUENCE OF CONGRUENCE BETWEEN INCENTIVE SYSTEM AND LOCUS OF CONTROL ON TEAM PERFORMANCE: AN EXPERIMENT		
ASSOS. PROF. DR. SUNAITAN AL MUTAIRI	ANALYSIS OF DELAYS DURING INITIAL PHASE OF CONSTRUCTION PROJECTS AND MITIGATION MEASURES		
DR. BARBORA CHMELÍKOVÁ	FINANCIAL DECISION-MAKING AMONG FINANCE STUDENTS: AN EMPIRICAL STUDY FROM THE CZECH REPUBLIC		
MOHAMMAD IRFAN	A STUDY OF ISLAMIC STOCK INDICES AND MACROECONOMIC VARIABLES		
WONG HOCK TSEN	THE IMPACT OF EXCHANGE RATE VOLATILITY ON REAL TOTAL EXPORT AND SUB-CATEGORIES OF REAL TOTAL EXPORT OF MALAYSIA		



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HALL: 10	SESSION: 1	MODERATOR : T. SOLONCHAK	
ASSOC. PROF. DR. DIVYA SHARMA	TRUE DETECTIVE AS A SOUTHERN GOTHIC: A STUDY OF ITS MUSIC-LYRICS		
MOHAMMED S. ASSIRI	DEVELOPMENT OF A RATING SCALE FOR ELEMENTARY EFL WRITING		
PREMVADEE NA NAKORNPANOM	THE CODE-MIXING OF JAPANESE, ENGLISH AND THAI IN LINE CHAT		
TINATIN KURDGHELASHVILI	SPEECH ACTS AND POLITENESS STRATEGIES IN AN EFL CLASSROOM IN GEORGIA		
DR. ASMA ALYAHYA	DIALOGUE JOURNALS AS AN EFL LEARNING STRATEGY IN THE PREPARATORY YEAR PROGRAM: LEARNERS' ATTITUDES AND PERCEPTIONS		
LECTURE KURALAY KENZHEKANOVA PHD. CAN. AKMARAL DALELBEKKYZY	MYTH IN POLITICAL DISCOURSE AS A FORM OF LINGUISTIC CONSCIOUSNESS		
S. PESINA T. SOLONCHAK	THE SIGN IN THE COMMUNICATION PROCESS		
HAIYAN WANG	THE COMPARATIVE ANALYSIS OF MICRO-READING AND TRADITIONAL READING BASED ON SCHEMA THEORY		
RESS. ASSIS. IVANA ŠIMONOVÁ	STUDENTS' KNOWLEDGE, OR RANDOM CHOICE IN ESP?		
SUWAREE YORDCHIM, TOBY J. GIBBS	ERROR ANALYSIS OF ENGLISH INFLECTION AMONG THAI UNIVERSITY STUDENTS		





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HALL: 11	SESSION: 1	MODERATOR: ASSIS. PROF. DR. SHOJI KATAGIRI	
SOHEILA RAEISI MENG LINGJIE	THE IMPORTANCE OF CUSTOMER ENGAGEMENT AND SERVICE INNOVATION IN VALUE CO-CREATION		
ASSIS. PROF. DR. SHOJI KATAGIRI	ROLE OF ICT AND WAGE INEQUALITY IN ORGANIZATION		
DR. KATI SKARP ASSIS. PROF. DR. KEIJO VARIS ASSIS. PROF. DR. JUHA KETTUNEN	EVALUATION OF TOP-DOWN AND BOTTOM-UP LEADERSHIP DEVELOPMENT PROGRAMS IN A FINNISH COMPANY		
IBRAHIM HAMIDU MAGEM	A REVIEW OF THE ANTECEDENTS AND CONSEQUENCES OF EMPLOYEE ENGAGEMENTC		
ASSIS. PROF. DR. MANUELA NAYANTARA JEYARAJ	VIABILITY OF SMART GRIDS FOR GREEN IT SUSTAINABILITY: CONTEMPLATED WITHIN THE CONTEXT OF SRI LANKA		
WEN-SHAN LIN SHU-LU HSU	A FRAMEWORK FOR INVESTIGATING REVERSE LOGISTICS CAPABILITY OF E-TAILERS		
EJAZ ALI MUHAMMAD YOUNAS TAHIR SAEED	IMPACT OF MODERATING ROLE OF E-ADMINISTRATION ON TRAINING, PERFROMANCE APPRAISAL AND ORGANIZATIONAL PERFORMANCE		
MOHAMMED ALI AHMED PROF. DR. VAUGHAN COFFEY BO XIA	THE REQUIREMENTS OF DEVELOPING A FRAMEWORK FOR SUCCESSFUL ADOPTION OF QUALITY MANAGEMENT SYSTEMS IN THE CONSTRUCTION INDUSTRY		
LEANDI STEENKAMP	RISK IN THE SOUTH AFRICAN SECTIONAL TITLE INDUSTRY: AN ASSURANCE PERSPECTIVE		
PHD. SHASHWAT GANGWAL	ANALYZING THE EFFECTS OF ADDING BITCOIN TO PORTFOLIO		



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**HALL: 1 SESSION: 2**

**MODERATOR: DR. ÖĞRETİM ÜYESİ FUAD SELAMZADE**

MURAT KARA  
DR. ÖĞRETİM ÜYESİ, ESRA  
KILIÇ

KOVID-19 DÖNEMİNDE TÜRKİYE EKONOMİSİNİN MAKRO  
EKONOMİK GENEL GÖRÜNÜMÜ

DR. BURAK BÜYÜKOĞLU

THE EFFECTS OF BUDGET DEFICIENCIES ON FINANCIAL  
DEVELOPMENT AND GROWTH IN EUROPEAN UNION CANDIDATE  
COUNTRIES

DOÇ. DR. FATMA NUR  
YORGANCILAR ATATOPRAK  
TAHSİN AYATA

THE EFFECT OF EXCHANGE RATE FLUCTUATIONS AND THE  
AMERICAN CENTRAL BANK (FED) INTEREST DECISIONS ON THE  
CENTRAL BANK OF THE REPUBLIC OF TURKEY INTEREST  
DECISIONS

DOÇ. DR. FATMA NUR  
YORGANCILAR ATATOPRAK

AN EVALUATION FOR ELECTRONIC TRADE PROJECTS IN TURKEY

DR. ÖĞR. ÜYESİ BURAK  
SERTKAYA

A COMPARATIVE ANALYSIS OF THE COVID-19 PANDEMIC AND  
THE RUSSIA- UKRAINE WAR WITH THE 2010-12 EUROPEAN DEBT  
CRISIS: THE CASE OF EU COUNTRIES

DR. MERAL ÇABAŞ

FOURIER APPROACH TO THE RELATIONSHIP OF FOREIGN DIRECT  
INVESTMENTS AND ECOLOGICAL FOOTPRINT IN TURKEY

DR. ÖĞRETİM ÜYESİ FUAD  
SELAMZADE

ESKİ SSCB ÜLKELERİNİN MAKROEKONOMİK GÖSTERGELERİNİN  
KARŞILAŞTIRILMASI: 1991-2021

DR. ÖĞRETİM ÜYESİ FUAD  
SELAMZADE

ESKİ SSCB ÜLKELERİNİN SAĞLIK STATÜSÜ PERFORMANS  
DEĞİŞİMİNİN ÖLÇÜLMESİ: 2005-2014



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**HALL: 2 SESSION: 2**

**MODERATOR: DR. ÖĞR. ÜYESİ YILDIRAY YILDIRIM**

ASSIST. PROF. DR.,  
ABDÜLHAKİM BAHADIR  
DARI  
ASSIST. PROF. DR., CANER  
ÇAKI

HONG KONG PROPAGANDA IN THE PROCESS OF THE CHINESE  
CULTURAL REVOLUTION

ÖĞR.GÖR.DR. BARIŞ EMRE  
SÖNMEZ

TERRA-COTTA UNGUENTARIUM LOCATED IN URGUP MUSEUM

DR. ÖĞRENCİSİ YASEMİN  
TURAN

SASANI EFFECTS OF THE SAMANIDS AT THE STATE  
ORGANIZATION

DR. ÖĞR. ÜYESİ, YILDIRAY  
YILDIRIM

ERZURUM VİLAYET SALNAMELERİNE GÖRE BAYBURT'UN  
TARİHİ COĞRAFYASI VE BUNUN ÜRETİME ETKİSİ (1870-1901)

DR. GÜLCAN ÖZBEK  
DR. ÖĞR.ÜYESİ, OSMAN  
AYTEKİN

AN EVALUATION OF THE ETNOGRAPHIC MUSEUM IN ARTVIN-  
HOPA AND BORJGALO ETNOGRAPHY MUSEUM IN BATUUM-  
ACARA IN TERMS OF THE COMMON COMPONENTS

TUĞBA TÜFEKÇİOĞLU  
DR. ÖĞR. ÜYESİ, ZEHRA  
ÖZBULUT  
PROF. DR. ESVET AKBAŞ

İNSAN KEMİKLERİNDEN ESER ELEMENT ANALİZİYLE  
PALEODİYETİN BELİRLENMESİ: VAN KALESİ HÖYÜĞÜ ÖRNEĞİ

DR. TUĞBA MEMİŞOĞLU  
BAYKAL

ANALYSIS OF PEDESTRIAN TRAFFIC ACCIDENTAL RISK AREAS  
WITH SPATIAL HOT SPOT CLUSTERING METHODS: CASE STUDY  
OF TURKEY



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Passcode: 350323

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**MODERATOR : Dr. Beşir DAĞ**

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ABDÜLHAKİM BAHADIR DARI

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A. I. KESKİN		PROPOSAL FOR A TWO-STAGE EARLY UNIVERSE MODEL
MERT GÜLŞAN TURAN TOPSELVİ DOÇ. DR. HAYATİ MAMUR		ATIK ISININ GERİ ÇEVİRİMİNDE TERMOELEKTRİK JENERATÖRLERİN KULLANILMASI İÇİN EĞİTİM SETİ UYGULAMASI
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ARAŞTIRMA GÖREVLİSİ, EYYUP ENSAR BAŞAKIN PROF. DR., MEHMET ÖZGER		NASA POWER SİSTEMİNDE SUNULAN UZAKTAN ALGILAMA VERİLERİNİN YER GÖZLEM VERİLERİ İLE UYUMUNUN İNCELENMESİ
ARAŞTIRMA GÖREVLİSİ, EYYUP ENSAR BAŞAKIN PROF. DR., MEHMET ÖZGER		NASA POWER SİSTEMİNDE SUNULAN UZAKTAN ALGILAMA VERİLERİ KULLANILARAK REFERANS EVAPOTRANSPIRASYON TAHMİNİ
DR. ÖĞR. ÜYESİ YAŞAR SELÇUK ERBAŞ DOÇ. DR. BUKET ÖZDEMİR IŞIK PROF. DR. FATİH BEKTAŞ ARŞ. GÖR. SABİHA KAYA		REKREASYON İÇİN COĞRAFİ BİLGİ SİSTEMLERİ YAZILIMI KULLANIMININ ÖNEMİ
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SELMAN FARUK GAYRETLİ  
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AHMAD THANYAN AL-SULTAN		AIRPORT CHECK-IN OPTIMIZATION BY IP AND SIMULATION IN COMBINATION	
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Gökyüzünde Süzülen	Ayşe DENİZLİ TÜZÜN
Varlık Alanı- Realm Of Existence	Ayfer KEÇECİ
"İnhilal İii." (Bölünme)	GÖKÇEN ŞAHMARAN CAN
Yeryüzünden Başka Bir Yer Yok	Ayşegül Türk
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Gelenekselden Çağdaşa	Dilber YILDIZ
Nereye? / To Where?	Duygu Ebru Öngen Corsini
Diversity	Ecem HATİPOĞLU KİRİŞ
Mısır Püskülü / Corn Tassel	Elif Özgen
Kapılar /Doors	Elif Özgen
Sessiz / Silence	Eşref AKMEŞE
Arayış /Guest	Eşref AKMEŞE
Çoruh	Esra ORHAN YILMAZ
Arayış	İhsan Tahir Erdal
-----	Uğur YILDIZ
Meraklı/Curious	Metin Kar
İçeride/Inside	Metin Kar
Lale Ve Karanfilin Bütünleşmesi-25x25-	Mikail SEVİNDİK
Korozyon	Nazan ÖZCAN
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## DÜNYADAKİ TATLI SU KULLANIM MİKTARLARININ GEÇİTLİ GERİ BESLEMELİ BİRİM YAPAY SİNİR AĞI İLE ÖNGÖRÜSÜ

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### ÖZET

Son yıllarda öngörü probleminin çözümünde derin yapay sinir ağları sıklıkla kullanılmaya başlandığı görülmektedir. Klasik zaman serisi öngörü yöntemlerine göre daha fazla sayıda parametre içeren ancak daha esnek doğrusal olmayan model yapıları oluşturan derin yapay sinir ağlarının daha başarılı öngörü yöntemlerinin üretilmesine olanak sağlayabileceği düşünülebilir. Derin yapay sinir ağlarının bir türü olan geçitli geri beslemeli birim yapay sinir ağı literatürde öngörü problemlerinin çözümünde başarılı sonuçlar vermektedir. Geçitli geri beslemeli birim yapay sinir ağları patlayan (exploding) ve kaybolan (vanishing) gradiyent probleminden etkilenmeyen bir yapay sinir ağı olarak ortaya atılmıştır. Literatür incelendiğinde yapay zekâ optimizasyon tekniklerinin geri beslemeli sinir ağlarının tahmin performansını iyileştirebileceği sonucuna varılabilir. Geri beslemeli sinir ağlarını eğitmek için en çok kullanılan sezgisel optimizasyon yöntemlerinden biri de parçacık sürüsü optimizasyonudur. Parçacık sürü optimizasyonu basit olması, kullanılan parametre sayısının az olması ve mükemmel yakınsama özelliklerinden dolayı tercih edilmektedir. Dünyada ve ülkemizde su tüketimi ve ihtiyacı her geçen gün hızla artarken su kaynakları da hızla tükenmekte ve kirlenmektedir. Artan nüfus, çarpık kentleşme, tarım alanlarının uygun kullanılmaması, ormanların yok edilmesi su kaynaklarını olumsuz yönde etkilemektedir. Bu gibi olumsuzlukların önüne geçmek için su yönetimi oldukça önemlidir. Bu çalışmada, dünyadaki tatlı su kullanım miktarlarının öngörüsü problemine odaklanılmıştır. Bu çalışmada geçitli geri beslemeli birim yapay sinir ağının eğitimi için parçacık sürü optimizasyonu dayalı yeni bir eğitim algoritması verilmiştir. Önerilen eğitim algoritması farklı stratejiler kullanarak geçitli geri beslemeli birimin eğitimini daha başarılı gerçekleştirebilmektedir. Çalışmanın motivasyonu dünyadaki tatlı su kullanım miktarlarının öngörüsünde önerilen eğitim algoritmasının performansının araştırılmasıdır. Önerilen yöntemin performansı, literatürde farklı optimizasyon algoritmaları kullanan yapay sinir ağları ile karşılaştırılmıştır.

**Anahtar Kelimeler:** GRU, PSO, Dünya, Tatlı Su Tüketimi

## PI-SİGMA YAPAY SİNİR AĞI İÇİN YENİ BİR SAĞLAM ÖĞRENME ALGORİTMASI

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### ÖZET

Pi-sigma yapay sinir ağları hem çarpımsal hem de toplamsal birleştirme fonksiyonlarına sahip bir yapay sinir ağıdır. Pi-sigma yapay sinir ağları, en popüler yapay sinir ağlarından olan çok katmanlı algılayıcı yapay sinir ağlarına göre de daha az sayıda eğitilebilir parametrelere sahip yapay sinir ağlarıdır. Literatürde Pi-sigma yapay sinir ağları üstün öngörü performansına sahip olmasına rağmen veri setinde bulunan aykırı değerlerden olumsuz etkilenmektedir. Bu çalışmada veri setinde aykırı değer olduğu durum da dahi üstün öngörü performansına sahip bir Pi-sigma yapay sinir ağı önerilmiştir. Önerilen Pi-sigma yapay sinir ağına Talwar'ın kayıp fonksiyonuna ve parçacık sürü optimizasyonuna dayalı sağlam bir öğrenme algoritması önerilmiştir. Önerilen yöntemin analiz performansı Almanya borsasına ait bir zaman serisi üzerinden değerlendirilmiştir. Önerilen yöntemin veri setinin hem aykırı değer içerdiği hem de içermediği durumdaki performansı birçok farklı yapay sinir ağı modeli ile karşılaştırılmıştır. Yapılan analiz sonuçlarına göre önerilen sağlam öğrenme algoritmasına dayalı Pi-sigma yapay sinir ağının aykırı değerlerden etkilenmediği ve üstün öngörü performansına sahip olduğu sonucuna varılmıştır.

**Anahtar Kelimeler:** Öngörü, Pi-Sigma Yapay Sinir Ağları, Talwar Kayıp Fonksiyonu, Aykırı Değer

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### ÖZET

Bulanık regresyon fonksiyonları yaklaşımları klasik bulanık çıkarım sistemlerinden farklı olarak uzman bilgisine ve belirli bir kural sistemine dayalı olmayan bulanık çıkarım sistemleridir. Bulanık regresyon fonksiyonları ve sezgici bulanık regresyon fonksiyonları yaklaşımları sırası ile bulanık kümeleme ve sezgici bulanık kümelemeye dayalı sistemlerdir. Bu sistemlerde bu kümeleme yöntemleri ile elde edilen üyelik değerleri ve üyelik olmama değerleri de sistemin bir girdisi olarak yer almaktadır. Yöntemlerin analiz performansı bir Borsa İstanbul zaman serisi üzerinden gerçekleştirilmiştir. Bulanık regresyon fonksiyonları ve sezgici bulanık regresyon fonksiyonları yaklaşımlarının analiz performansı literatürdeki birçok farklı öngörü yöntemleri ile karşılaştırılmıştır. Yöntemlerin karşılaştırılmasında hata kareler ortalaması, karekök ve ortalama mutlak yüzdelik hata kriterleri kullanılmıştır. Yapılan analiz sonuçlarına göre ise bulanık regresyon fonksiyonları yaklaşımları ile elde edilen analiz sonuçlarının literatürdeki birçok öngörü yönteminden daha iyi öngörü sonuçlarına sahip olduğu görülmüştür.

**Anahtar Kelimeler:** Öngörü, Bulanık Regresyon Fonksiyonları, Sezgici Bulanık Regresyon Fonksiyonları, Bulanık Çıkarım Sistemleri

## GERİ BESLEMELİ Pİ-SİGMA YAPAY SİNİR AĞI İLE GİRESUN RÜZGAR HIZI ÖNGÖRÜSÜ

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### ÖZET

Zaman serisi öngörüsü için kullanılan güncel yöntemler içinde yapay sinir ağları oldukça büyük bir yer kaplamaktadır. Yüksek dereceli yapay sinir ağları klasik çok katmanlı algılayıcıya göre daha başarılı öngörü sonuçları üretebilmektedir. Bunun yanında geri besleme mekanizması da yapay sinir ağının hatalar yardımı ile öngörülerini güncellemesine olanak sağlamaktadır. Bu çalışmada Giresun ili rüzgâr hızının öngörüsü için, basit üstel düzleştirmeden esinlenerek oluşturulan geri beslemeli pi-sigma yapay sinir ağının performansı literatürdeki diğer güncel ve klasik öngörü yöntemleri ile karşılaştırılmaktadır. Çalışma sonucunda Giresun ili rüzgâr hızının öngörüsü için geri beslemeli pi-sigma yapay sinir ağının performansının ortaya koyulması yanı sıra en iyi öngörü yöntemi belirlenmektedir.

**Anahtar Kelimeler:** Öngörü, Pi-Sigma Yapay Sinir Ağları, Geri Beslemeli Ağlar, Rüzgar Hızı.



## OTOMATİK ÖNGÖRÜ YÖNTEMİ İLE GİRESUN GÜNLÜK MİNİMUM SICAKLIK ÖNGÖRÜSÜ

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### ÖZET

Sıcaklık verilerinin öngörülerini günümüzde insanlar tarafından rutin olarak kontrol edilen ve hayatlarının önemli bir parçası olan unsur haline gelmiştir. Sıcaklık öngörülerinin gerçekleştirilmesinde birçok yardımcı araç yanında istatistiksel modellerde sıklıkla kullanılmaktadır. Bu çalışmada sıcaklık verilerinin otokorelasyon yapısına bağlı olarak, modelin girdilerini ve hiper parametrelerinin otomatik olarak belirleyebilen ve çarpımsal nöron modele dayalı otomatik öngörü yöntemi Giresun ili minimum sıcaklık verilerine uygulanmıştır. Yöntemin performansı güncel makine öğrenmesi ve istatistiksel yöntemler ile karşılaştırılmıştır. Bunun yanında Otomatik öngörü yöntemi için hazırlanan Matlab grafik arayüzü ile hazırlanan uygulamanın (application) bir tanıtımı yapılmıştır.

**Anahtar Kelimeler:** Öngörü, Yapay Sinir Ağları, Çarpımsal Nöron Model.

## OECD ÜLKELERİNİN TATLI SU KULLANIM MİKTARLARININ WINSORİZE DENDRİTİK NÖRON MODEL YAPAY SİNİR AĞI İLE ÖNGÖRÜSÜ

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### ÖZET

Son yıllarda yapay zekâ teknikleri bilimin birçok alanında kullanılmaya başlanmıştır. En yaygın kullanılan yapay zekâ yöntemlerinden biri olan yapay sinir ağları, zaman serisi öngörüsünde sıklıkla tercih edilmektedir. En sık kullanılan yapay sinir ağı olan çok katmanlı algılayıcının mimarisinde toplama işlevi olduğu için veri setindeki aykırı değerlerden etkilenebilmektedir. Mimari yapısında toplamsal ve çarpımsal toplama işlevlerine sahip olan dendritik nöron model yapay sinir ağı da aykırı değerlerden etkilenmektedir. Bu çalışmada dendritik nöron model yapay sinir ağının bir başka türü olan winsorize dendritik nöron model yapay sinir ağı OECD ülkelerinin tatlı su kullanım miktarlarının öngörüsü için kullanılmıştır. winsorize dendritik nöron model yapay sinir ağında, çıktıdaki uç değer etkisini azaltmak için dendritik nöron model yapay sinir ağının dendritik katmanında winsorize ortalama kullanılmıştır. Ayrıca winsorize dendritik nöron model yapay sinir ağının eğitimi için Tukey'in ağırlık fonksiyonuna dayalı dayanıklı bir öğrenme algoritması kullanılmaktadır. Kullanılan modelde, aykırı değerlerin olması durumunda modelin daha da iyi çalışması ve girdideki aykırı değerlerin etkisini azaltmak için dayanıklı bir standardizasyon yöntemi kullanılmıştır. Literatürde yapay sinir ağlarının eğitimi için hem sezgisel optimizasyon algoritmaları hem de türev tabanlı optimizasyon algoritmaları kullanılmaktadır. Sezgisel optimizasyon algoritmalarından biri olan parçacık sürü optimizasyon algoritması, çözünürlüğü, basitliği ve kullanılan parametre sayısının az olması nedeniyle ağın eğitiminde tercih edilmiştir. Dünyada meydana gelen yeni gelişmeler ve ortaya çıkan sorunları çözmek için 37 ülkenin daimi üyesi olduğu OECD topluluğu son yıllarda su politikalarının tasarımı ve uygulanmasındaki kritik yönetim boşluklarını belirlemek ve her düzeyde hükümetlere yardımcı olmak için su yönetim programını oluşturmuştur. Bu çalışmada, OECD ülkelerinin tatlı su kullanım miktarlarının winsorize dendritik nöron model yapay sinir ağı ile öngörüsü amaçlanmıştır. Çalışmanın motivasyonu hidrolojik verilerin öngörüsünde winsorize dendritik nöron model yapay sinir ağının kullanılması ve diğer alternatif yöntemler ile karşılaştırılmasıdır.

**Anahtar Kelimeler:** Winsorize Dendritik Nöron Model, Parçacık Sürü Optimizasyonu, OECD, tatlı su tüketimi

## İSTANBUL AYLIK SU TÜKETİMİNİN UZUN KISA SÜRELİ BELLEK İLE ÖNGÖRÜSÜ

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### ÖZET

Günümüzde yapay zeka teknikleri birçok bilim dalında olduğu gibi öngörü alanında da kullanılmaya başlanmıştır. Yapay zeka alanının önemli bir dalı olan yapay sinir ağları istatistiksel verilerin analizinde sıklıkla kullanılmaya başlanmıştır. Hem derin hem de sığ yapay sinir ağları zaman serisi öngörü probleminin çözümünde klasik öngörü yöntemlerine göre daha başarılı sonuçlar ürettiği bilinmektedir. Özel bir derin yapay sinir ağı modeli olan uzun-kısa süreli bellek, literatürde öngörü problemlerinin çözümü için birçok alanda başarılı sonuçlar vermektedir. Uzun kısa süreli bellek geri beslemeli yapay sinir ağlarında ortaya çıkan patlayan (exploding) ve kaybolan (vanishing) gradiyent problemlerini yok etmek için ortaya atılmıştır. Uzun kısa süreli bellek yapay sinir ağlarının en önemli başarı kriterlerinden biri birçok yapay sinir ağına olduğu gibi ağı eğitimi için kullanılan optimizasyon algoritmasıdır. Ağı eğitimi için kullanılan optimizasyon algoritmaları, türev tabanlı algoritmalar ve yapay zeka optimizasyon algoritmaları olarak ikiye ayrılmaktadır. Yapay zeka optimizasyon algoritmaları, birçok avantajından dolayı türev tabanlı algoritmalara kıyasla son yıllarda sıklıkla kullanılmaya başlanmıştır. Literatürde uzun kısa süreli bellek ağı eğitimi için birçok optimizasyon algoritması kullanılmıştır. Bu algoritmalarından biri olan parçacık sürü optimizasyon algoritması basitliği, yüksek çözüm kalitesi ve mükemmel yakınsama özellikleri nedeniyle sıklıkla tercih edilmektedir. Son yıllarda küresel bir sorun haline gelen su kaynaklarının yönetimi ve sürdürülebilirliği önem kazanmaktadır. Su kaynaklarının sürdürülebilirliği için su tüketimi oldukça önemlidir. İstanbul hem dünyanın hem de Türkiye'nin önemli metropol şehirlerinden biri olma özelliğini taşımaktadır. Yıllar içerisinde İstanbul'da nüfus yoğunluğunun artması su tüketiminde artışa sebep olmaktadır. Bu çalışmada, İstanbul'un aylık su tüketimi öngörüsü problemine odaklanılmıştır ve uzun kısa süreli belleğin eğitimi için parçacık sürü optimizasyonuna dayalı olarak yeni bir eğitim algoritması önerilmiştir. Önerilen yöntemin performansı İstanbul'un aylık su tüketimi verisi kullanılarak araştırılmıştır. Önerilen yöntemin performansı, literatürde farklı optimizasyon algoritmaları kullanan farklı yapay sinir ağları ile karşılaştırılmış ve sonuçlar tablo ve grafikler yardımı ile sunulmuştur.

**Anahtar Kelimeler:** RNN, LSTM, Su Tüketimi, İstanbul.

## IN VITRO CYTOTOXIC AND ANTIBACTERIAL ACTIVITY OF SUBSTITUTED TETRAHYDRONAPHTHALEN-1-YL-PHENETHYL UREAS: SYNTHESIS AND BIOLOGICAL EVALUATION

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### ABSTRACT

Today, many people develop drug resistance in cancer treatment, and some are affected by infectious diseases caused by antibiotic-resistant bacteria. Therefore, discovering new drugs exhibiting anticancer and antibacterial properties is one of the most critical steps. In this study, a new series of N,N'-dialkyl urea derivatives carrying methoxy substituents at different positions of phenethylamines were synthesized to constitute both anticancer and antimicrobial drug candidate compounds. For the efficient synthesis of N,N'-dialkyl urea derivatives 14-18, isocyanate was used, and target products 14 -18 were obtained in good yields. In the second stage of the study, we investigate their antibacterial and anticancer activity. Cytotoxicity analyses were performed on cancer cells, bacterial cultures, and healthy fibroblast cells. According to the antibacterial results, all tested compounds showed intense activity (MIC values: 0.97-15.82  $\mu$ M) against all tested bacterial strains except compound 14. Anticancer activity studies revealed that compounds 14-17 show the best activity against SH-SY5Y and HeLa cells. Especially compound 16 not only has low MIC and IC<sub>50</sub> values but also has less cytotoxicity than cisplatin. Considering these results, compound 16 could help treat related cancer and antibacterial diseases. Furthermore, additional pharmacological investigations should establish its promise as an antibiotic and anticancer medication.

**Keywords:** Antibacterial activity, anticancer activity, isocyanates, N,N'-dialkyl urea, phenethylamine

**SOME ASPECTS OF THE PHYTOTOXIC ACTION OF FUSARIC ACID ON CERTAIN PHYSIOLOGICAL, CYTOGENETIC, BIOCHEMICAL, MOLECULAR AND ANATOMICAL PARAMETERS OF *ALLIUM CEPA* L. BULBS**

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**ABSTRACT**

In this study, the multiple toxicity induced by three different doses (1, 5 and 10  $\mu$ M) of fusaric acid (FA), a mycotoxin, was investigated with the help of the *Allium* test. Physiological (percent germination, root number, root length and weight gain), cytogenetic (micronucleus=MN, chromosomal abnormalities=CAs and mitotic index=MI), biochemical (proline level, malondialdehyde=MDA level, catalase=CAT activity and superoxide dismutase=SOD activity) and anatomical (structural change in root tip cells) parameters were used as indicators of toxicity. *Allium cepa* L. bulbs were divided into four groups as one control and three applications. The bulbs in the control group were germinated with tap water for 7 days, and the bulbs in the treatment groups were germinated with three different doses (1, 5 and 10  $\mu$ M) of FA for 7 days. As a result, it was determined that FA exposure caused a decrease ( $p<0.05$ ) in all physiological parameters examined at all three doses. Besides, all FA doses caused a decrease ( $p<0.05$ ) in MI and an increase ( $p<0.05$ ) in the frequency of MN and the number of CAs. FA promoted CAs such as nucleus with vacuoles, nucleus buds, irregular mitosis, bridge, and misdirection in root meristem cells. DNA and FA interactions, which are the possible causes of genotoxic effects, were examined by spectral analysis and it was determined that FA could interact with DNA through intercalation, causing bathochromic and hypochromic shifts in the spectrum. FA also causes toxicity by inducing oxidative stress in cells, confirming this, dose-related increases ( $p<0.05$ ) in root MDA and proline levels were measured as a result of FA exposure. In the root SOD and CAT enzyme activities, increases ( $p<0.05$ ) up to 5  $\mu$ M doses

and decreases ( $p<0.05$ ) at 10  $\mu\text{M}$  doses were measured. FA exposure induced anatomical damage such as necrosis, epidermis cell damage, flattened cell nucleus, thickening of the cortex cell wall and unclear vascular tissue in root tip meristem cells. As a result, it was determined that FA caused multi-dimensional toxicity by showing an inhibitory effect in *A. cepa* test material, and the *Allium* test was a very useful test in determining this toxicity.

**Anahtar Kelimeler :** *Allium cepa* L., Antioxidant/oxidant dynamic, Fusaric acid, Genotoxicity, Meristematic cell damage, Physiology, Spectral shift



## AN OVERVIEW INTO THE POTENTIAL ROLE OF CORONATINE, A BACTERIAL TOXIN, IN MITIGATING SALT STRESS IN ONION ROOTS

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### ABSTRACT

Coronatine (COR), a bacterial phytotoxin produced by *Pseudomonas syringae*, plays important roles in many plant growth processes. Onion bulbs were divided four groups to investigate the effects of COR against sodium chloride (NaCl) stress exposure in *Allium cepa* L. root tips. While control group bulbs were soaked in tap water medium, treatment group bulbs were grown in 0.15 M NaCl, 0.01 µM COR and 0.01 µM COR+0.15 M NaCl medium, respectively. NaCl stress seriously inhibited the germination, root length, root number and fresh weight of the bulbs. It significantly decreased the mitotic index, whereas dramatically increased the micronucleus frequency and chromosomal aberrations. Moreover, in order to determine the level of lipid peroxidation occurring in the cell membrane, malondialdehyde content was measured and it was determined that it was at the highest level in the group germinated in NaCl medium alone. Similarly, it was revealed that the superoxide dismutase, catalase and free proline contents in the group germinated in NaCl medium alone were higher than the other groups. On the other hand, NaCl stress caused significant injuries such as epidermis/cortex cell damage, micronucleus formation in epidermis/cortex cells, flattened cells nuclei, unclear vascular tissue, cortex cell wall thickening, accumulation of certain chemical compounds in cortex cells and necrotic areas in the anatomical structure of bulb roots. However, exogenous COR application significantly alleviated the negative effects of NaCl stress on bulb germination and growth, antioxidant defense system, cytogenetic and anatomical structure. Thus, it has been proven that COR can be used as a protective agent against the harmful effects of NaCl on onion.

**Anahtar Kelimeler :** Antioxidant enzymes, Coronatine, Germination, Malondialdehyde, Mitosis, Proline, Root anatomy, Salinity

## ГРИБКОВЫЕ ЗАБОЛЕВАНИЯ ОВОЩЕЙ В ЦЕНТРАЛЬНЫХ ГОРОДОВ АЗЕРБАЙДЖАНА

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### РЕЗЮМЕ

Исследовательская работа проводилась в городе Гянджа. В ходе наблюдений среди овощных культур наибольшее количество патогенных грибов было обнаружено в растениях картофеля. Было замечено, что наибольший вред растению картофеля причиняет гриб под названием Альтернариоз. Альтернариоз поражает листья, стебли и клубни картофеля. Альтернариоз может поражать картофель в течение всего вегетационного периода. Споры грибов распространяются ветром, каплями дождя или насекомыми. При этом грибок также прорастает инфекционными побегами, проникающими в растение. Пятна на листьях сильно зараженных растений срастаются, желтеют и отмирают. Иногда болезнь наблюдается на ветках и клубнях, так на клубнях появляются вдавленные пятна, более темного цвета, чем кожура картофеля. В таких крупных пятнах наблюдается сморщивание. Основным характерным признаком болезни является образование на листьях черно-бурых пятен различного диаметра (0,5-4 см) округлой или овальной формы. Иногда заболевание наблюдается на ветвях и клубнях. Когда это заболевание широко распространено, оно может нанести 20-30% ущерба продуктивности. Потери урожая в основном связаны с увяданием листьев, но иногда и с сухой гнилью при хранении. Если Альтернариоз появляется рано, это может свидетельствовать об ослабленном состоянии растений (в результате стресса или недостатка питания) или о сильной чувствительности сорта к этому заболеванию. Заболевание проявляется в период роста растения, особенно в жаркую погоду, при дефиците азота, вирусных инфекциях, паразитах и других факторах, ослабляющих растение. Альтернариоз более бурно развивается на ослабленных кустах, главным образом при недостатке азота и калия, при избытке фосфора.

**Ключевые слова:** овощные растения, грибковые заболевания, возбудители.

## FUNGAL DISEASES OF VEGETABLES IN THE CENTRAL CITIES OF AZERBAIJAN

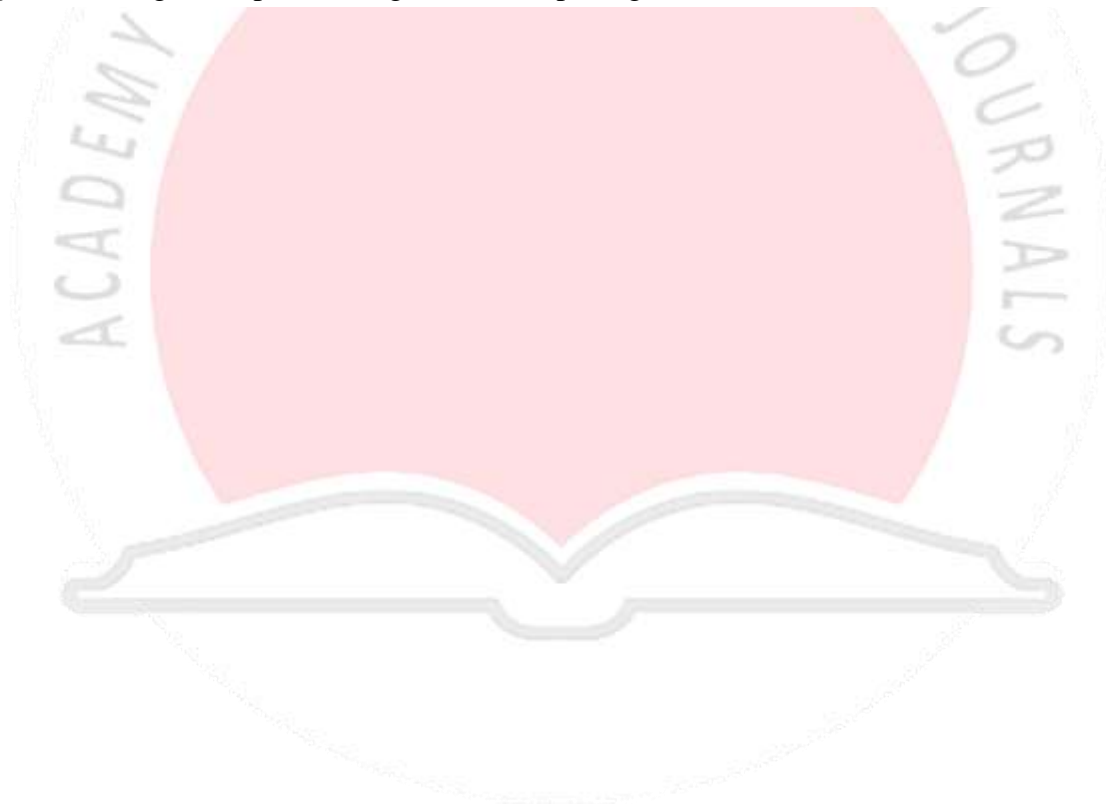
### ABSTRACT

Research work was carried out in the city of Ganja. In the course of observations among vegetable crops, the largest number of pathogenic fungi was found in potato plants. It has been observed that the greatest harm to the potato plant is caused by a fungus called Alternaria.



Alternariosis affects the leaves, stems and tubers of potatoes. Alternariosis can affect potatoes throughout the growing season. Fungal spores are spread by wind, raindrops or insects. In this case, the fungus also germinates with infectious shoots penetrating the plant. The spots on the leaves of heavily infected plants coalesce, turn yellow and die. Sometimes the disease is observed on branches and tubers, so sunken spots appear on the tubers, darker in color than the peel of the potato. In such large spots, wrinkling is observed. The main characteristic symptom of the disease is the formation of black-brown spots of various diameters (0.5-4 cm) of a round or oval shape on the leaves. Sometimes the disease is observed on branches and tubers. When this disease is widespread, it can cause a 20-30% loss in productivity. Yield losses are mainly due to leaf wilt, but sometimes dry rot during storage. If *Alternaria* appears early, this may indicate a weakened state of the plants (due to stress or lack of nutrition) or a strong cultivar sensitivity to this disease. The disease manifests itself during the period of plant growth, especially in hot weather, with nitrogen deficiency, viral infections, parasites and other factors that weaken the plant. Alternariosis develops more rapidly on weakened bushes, mainly with a lack of nitrogen and potassium, with an excess of phosphorus.

**Key words:** vegetable plants, fungal diseases, pathogens.



## SCREENING OF BIOFILM FORMATION IN CHICKEN DELIVERED LACTIC ACID BACTERIA

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### ABSTRACT

In this study, the biofilm forming abilities of a total of 96 lactic acid bacteria (LAB) isolates belonging to 80 *Lactobacillus* and 16 *Streptococcus* genera isolated from chicken gastrointestinal tract and chicken stool in the culture collection of Gazi University, Faculty of Science, Biology Department, Biotechnology Laboratory were investigated qualitatively and quantitatively. Congo red agar method was applied to determine the biofilm producing abilities of 96 lactic acid bacteria. Bacteria forming black colonies in the medium were evaluated as biofilm positive, and bacteria that did not form colonies in black color were evaluated as biofilm negative. According to the results, 22 out of 80 bacteria belonging to *Lactobacillus* genus and 15 of 16 bacteria belonging to *Streptococcus* genus were determined as biofilm positive on MRS agar medium containing 37 LAB congo red in total. The amount of biofilm formation was quantitatively determined by the crystal violet staining method on flat-bottomed 96-well polystyrene microtitration plates of 37 bacteria that were qualitatively biofilm positive. The biofilm forming abilities of the bacteria were determined by calculating the cut-off optical density (OD<sub>C</sub>) values. In the results, the bacteria were divided into 4 categories as non-biofilm producer, weak biofilm producer, moderate biofilm producer and strong biofilm producer.

According to the results of the analysis, 7 of the isolates were determined as strong biofilm producers, 5 as intermediate biofilm producers, 5 as weak biofilm producers and 20 as non-biofilm producers.

**Keywords :** *Lactobacillus*, *Streptococcus*, biofilm, congo red, microtitration

## TAVUK KAYNAKLI LAKTİK ASİT BAKTERİLERİNDE BİYOFİLM OLUŞUMUNUN TARANMASI

### ÖZET

Bu çalışmada, Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Biyoteknoloji Laboratuvarı kültür koleksiyonunda bulunan tavuk gastrointestinal sistemi ve tavuk gaitasından izole edilmiş 80 *Lactobacillus* ve 16 *Streptococcus* cinsine ait toplam 96 laktik asit bakterisi (LAB) izolatının biyofilm oluşturma yetenekleri nitel ve nicel olarak incelenmiştir. 96 laktik asit bakterisinin biyofilm üretme yeteneklerinin belirlenmesi amacıyla kongo kırmızısı agar yöntemi uygulanmıştır. Besiyerinde siyah renkte koloni oluşturan bakteriler biyofilm pozitif, siyah renkte koloni oluşturmayan bakteriler ise biyofilm negatif olarak değerlendirilmiştir. Elde edilen sonuçlara göre, *Lactobacillus* cinsine ait 80 bakteriden 22'si, *Streptococcus* cinsine ait 16 bakteriden 15'i toplamda 37 LAB kongo kırmızısı içeren MRS agar besiyerinde biyofilm pozitif olarak belirlenmiştir. Nitel olarak biyofilm pozitif olan 37 bakteri düz-tabanlı 96-kuyucuklu polistiren mikrotitrasyon plakaları üzerinde kristal viyole boyama yöntemi ile biyofilm oluşum miktarları nicel olarak saptanmıştır. Bakterilerin biyofilm oluşturma yetenekleri cut-off optik yoğunluk (OD<sub>600</sub>) değerleri hesaplanarak tespit edilmiştir. Sonuçlarda bakteriler biyofilm üreticisi değil, zayıf biyofilm üreticisi, orta düzey biyofilm üreticisi ve güçlü biyofilm üreticisi olacak şekilde 4 kategoriye ayrılmıştır. Analiz sonuçlarına göre izolatlardan, 7'si güçlü biyofilm üreticisi, 5'i orta düzey biyofilm üreticisi, 5'i zayıf biyofilm üreticisi, 20'si ise biyofilm üreticisi değil olarak belirlenmiştir.

**Anahtar Kelimeler :** *Lactobacillus*, *Streptococcus*, biyofilm, kongo kırmızısı, mikrotitrasyon

**DETERMINATION OF THE LETHAL CONCENTRATIONS OF  
STERNBERGIA LUTEA (L.) (ALLIACEAE, AMARYLLIDOIDEAE)  
METHANOL EXTRACT ON GALLERIA MELLONELLA LARVAE (L.)  
(LEPIDOPTERA: PYRALIDAE)**

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**ABSTRACT**

*Sternbergia* Waldst & Kit. is a genus of bulbous monocotyledons belonging to the family Amaryllidaceae. *Sternbergia* species with alkaloid content; properties such as antiviral, antioxidant, antimicrobial and antitumor activity are reported in scientific studies. Within these species, *Sternbergia lutea* (L.) Ker Gawl.exSpreng due to the alkaloids it contains, has various pharmacological effects. Also, its toxic and anthelmintic activities have been determined in previous studies. To compare the relative toxicity of various compounds and to direct the creation of exposure limits and regulatory standards, lethal concentration values are utilized. The Greater Wax Moth *Galleria mellonella* L. (Lepidoptera: Pyralidae) is a devastating pest of honeycomb in hives and causes significant losses in apiculture. It is also a model insect commonly used for toxicological investigations. In this study, it was aimed to determine the lethal concentration values of *S. lutea* methanol extract obtained from the underground part of the plant on *G. mellonella*. Lethal concentrations of *S. lutea* methanol extract for *G. mellonella* were determined by the probit analysis and it was determined as follows: LC<sub>30</sub>=290.54, LC<sub>50</sub>=464.77, LC<sub>70</sub>=639, and LC<sub>90</sub>= 890.56 µg/10µl. Our results indicated that *S. lutea* methanol extract has a toxic potential for insects.

**Key Words :** *Galleria mellonella*, Lethal concentration, *Sternbergia lutea*.

## ETHNOBOTANICAL RESEARCHES ON *HYPERICUM MONTBRETII* SPACH THAT SHOWS NATURALLY DISTRIBUTION IN ESKİŞEHİR AND ITS SURROUNDINGS

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### ABSTRACT

In this study, ethnobotanical features of *Hypericum montbretii* Spach in Eskişehir/Türkiye were investigated. As a result of performed excursion studies ethnobotanical usages of *H. montbretii* was determined especially in Eskişehir and its surroundings. Also morphological characteristics of *H. montbretii* was identified and this observations are compared with data given in flora of Turkey.

**Keywords:** *Hypericum montbretii* Spach, Ethnobotany, Eskişehir, Turkey.

**POLLEN MORPHOLOGY IN *COTINUS COGGYGRIA* SCOP.  
(ANACARDIACEAE) SAMPLE ACCORDING TO ERDTMAN METHOD**

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**ABSTRACT**

In this study, pollen morphology of *Cotinus coggygia* Scop. (Anacardiaceae) taxon, which is used for landscaping in Eskişehir province, was investigated. Pollen samples of the plants were obtained from the flowers in the trees located on the parks and gardens. Pollen samples of the investigated taxa were taken from dried plants found in the Herbarium (OUFE) of Osmangazi University Faculty of Science. Palynomorphological characters of taxon was investigated by light microscopy. For light microscopy investigations, acetolised pollen grains were prepared according to the Erdtman method The investigated *C. coggygia* pollen grains are tricolporatae type and sphaeroidea shaped. Exine was seen to be tectatae-striatae/perforate ornamentation. As a result of microscopic examinations, the distinctions taxon were revealed statistically. Comparisons were performed between studied taxon will make contribution to taxonomy for classification of *C. coggygia*.

**Keywords:** *Cotinus coggyria* Scop., pollen morphology, Erdtman method, Eskişehir, Turkey.

## ETHNOBOTANICAL VALUE OF *ELAEAGNUS ANGUSTIFOLIA* L. (ELEAGNACEAE) WHICH SHOWS NATURALLY DISTRIBUTION IN AND AROUND ESKİŞEHİR

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### ABSTRACT

In this study, the ethnobotanical value of *Elaeagnus angustifolia* L., which was determined as a result of excursions in Eskişehir and its surroundings, was investigated in terms of morphological and folk medicine. *E. angustifolia* which growing in the research area selected as investigation material due to it's ethnobotanical useage areas. As a result of the study, the medical and food uses of *E. angustifolia* and other ethnobotanical properties in Eskişehir province are given.

**Keywords:** *Elaeagnus angustifolia* L., Ethnobotany, Eskişehir, Turkey.

## POLLEN MORPHOLOGY IN *CHAENOMELES SPECIOSA* (SWEET) NAKAI (ROSACEAE) SAMPLE ACCORDING TO WODEHOUSE METHOD

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### ABSTRACT

In this study, pollen morphology of *Chaenomeles speciosa* (Sweet) Nakai (Rosaceae), which is used for landscaping in Eskişehir province, was investigated. Pollen samples of the plants were obtained from the flowers in the trees located on the parks and gardens. Pollen samples of the investigated taxa were taken from dried plants found in the Herbarium (OUFE) of Osmangazi University Faculty of Science. Palynomorphological characters of taxon was investigated by light microscopy. For light microscopy investigations, non-acetolised pollen grains were prepared according to the Wodehouse method The investigated *C. speciosa* pollen grains are tricolporatae type and suboblata shaped. Exine was seen to be tectatae-striatae ornamentation. As a result of microscopic examinations, the distinctions taxon were revealed statistically. Comparisons were performed between studied taxon will make contribution to taxonomy for classification of *C. speciosa*.

**Keywords:** *Chaenomeles speciosa* (Sweet) Nakai, pollen morphology, Eskişehir, Turkey.



## YOĞUN KAR YAĞIŞI OLAN İLLERDE BİTKİSEL TASARIMIN İRDELENMESİ

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### ÖZET

Peyzaj planlama ve tasarımlarında bitkisel tasarımın rolü çok büyüktür. Başarılı bir tasarımın olmazsa olmazı başarılı bir plantasyondur. Başarılı bir plantasyon için bitkileri çok iyi tanımak, ekolojik isteklerini bilmek, fiziksel özellikleri ve gelişimlerini takip etmek gerekmektedir. Kış kentlerinde bitkisel tasarım yapılırken, soğuğa dayanıklılığın yanında bitkilerin formları, dallanma özellikleri, odununun elastikiyeti gibi bilgilerinde dikkate alınması gerekmektedir. Soğuk ile kar karıştırılmamalıdır. Bazı bitkiler soğuğa çok dayanıklı olmasına rağmen yoğun kar yağışı altında zarar görmektedir. Peyzaj mimarları hünerlerini bitkiler ile göstermektedirler ve bitkiler canlı materyallerdir. İstisnalar hariç plantasyonda kullanılan bitkilerin kendilerini gösterebilmeleri için büyümeleri belirli bir olgunluğa forma ulaşmaları gerekmektedir. Formu için kullandığımız birçok bitki mevcuttur. Yoğun kar yağışı altında kaldığında formu bozulan dalları kırılan bitkilerin olduğu aşikârdır. Buda plantasyonda zaman kaybına neden olmakta ve istenilen tasarımın gerçekleşmesine olanak sağlamamakta ve kötü görüntüleri ortaya koyarak bakım ve maliyeti arttırmaktadır. Bu çalışmada yoğun kar yağışı olan kentlerde kullanılan bitkiler üzerinde durulmuş ve fotoğraflanarak yorumlanmıştır.

**Anahtar Kelimeler:** Bitkisel tasarım, Kar, Peyzaj, Soğuk iklim

## FINDIKTA KÜLLEME HASTALIĞINA (*ERYSİPHE CORYLACEARUM* BRAUN & TAKAM) KARŞI DOĞA DOSTU İLAÇLAMA PROGRAMLARI

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### ÖZET

Çalışmada Kara ve Sarı fındık çeşitlerinde külleme hastalığına (*Erysiphe corylacearum*) karşı, doğa dostu kimyasallardan oluşan dönüşümlü ilaçlama programları kükürt / Reynoutria spp. ekstraktı (bitki ekstraktı), *Reynoutria* spp. ekstraktı / kükürt, karışım ilaçlama programları  $KH_2PO_4$  + kükürt,  $Na_2SiO_3$  + kükürt ve tek başına uygulanan  $NaHCO_3$  programı ile sistemik fungusit (tebuconazole+azoxystrobin) / bitki ekstraktı (*Reynoutria* spp.) dönüşümlü ilaçlama programlarının etkililikleri araştırılmıştır. Araştırma Düzce Akçakoca İlçesinde (Türkiye) 2019 yılında yürütülmüştür. Kara fındık yaprakları üzerinde külleme hastalığına karşı sistemik fungusit/bitki ekstraktı en yüksek etkililiği (%93.6) göstermiş, diğer ilaçlama programları buna yakın ve birbirlerine benzer etkililikler ortaya koymuşlardır. Kara fındık çotanakları üzerinde ise, hastalığa karşı  $Na_2SiO_3$  + kükürt ve kükürt/bitki ekstraktı programları sırasıyla %100 ve %94.6 gibi yüksek etkililik ve sistemik fungusit/bitki ekstraktı ve  $KH_2PO_4$  + kükürt programları birbirine benzer ve kabul edilebilir etkililik oranlarına (sırasıyla %87.5, %76.6) sahiptirler. Sarı fındık yapraklarında külleme karşı en yüksek etkililikleri sistemik fungusit/bitki ekstraktı ve  $KH_2PO_4$  + kükürt karışım programları sırasıyla %96.2, %94.9 ile gösterirken, diğer ilaçlama programları ( $NaHCO_3$  hariç) birbirine benzer ve ilk iki ilaçlama programına yakın etkililikler göstermişlerdir. Sarı fındık çotanakları üzerinde hastalığa karşı en yüksek etkililikler sırasıyla %97.8 ve %94.9 ile  $KH_2PO_4$  + kükürt ve  $Na_2SiO_3$  + kükürt programlarının uygulandığı parsellerde gözlemlenirken, bu ilaçlama programlarını sistemik fungusit/bitki ekstraktı ve kükürt/bitki ekstraktı yakın bir etkililik oranlarıyla (sırasıyla %92.9, %89.0) izlemişlerdir.

Her iki fındık çeşidinin ilaçlama programı uygulanan yaprak ve çotanaklarında fitotoksik etki gözlemlenmemiştir. Bu çalışma  $NaHCO_3$  dışındaki programların fındıkta külleme hastalığına karşı ekolojik veya konvansiyonel savaşım programları içerisinde başarıyla uygulanabileceklerini ortaya konmuştur.

**Anahtar Kelimeler:** Fındık, külleme, *Erysiphe corylacearum*, doğa dostu, mücadele

## FARKLI HAMMADDELERDEN ALTERNATİF KEFİR ÜRETİMİ

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### ÖZET

Kefir, danelerin süt ya da şeker içeren farklı bir hammaddeye inoküle edilmesiyle elde edilen fermente bir üründür. Geleneksel olarak kefir üretiminde süt; jelatinimsi, küçük ve düzensiz şekilleri olan danelerle inoküle edilmektedir. Probiyotik içecekler arasında kefir önemli bir pazara sahiptir. Günümüzde kefir üretiminde farklı hammaddeler kullanılmaya başlanmıştır. Kefir fermantasyonunda hammadde olarak süt dışında en yaygın olarak meyveler kullanılmaktadır. Bunlara elma, üzüm, çilek, armut, nar örnek verilebilir. Peyniraltı suyu ile seyreltilmiş meyve suları kefirin sağlık etkilerini ve fonksiyonelliğini artırmak amacıyla çeşitli araştırmalarda kullanılmıştır. Bunun dışında havuç, pancar, soğan, soya fasulyesi gibi sebzeler alternatif hammadde olarak denenmiştir. Belirli oranlarda meyve ve sebze suyu karışımları potansiyel hammadde olarak karşımıza çıkmaktadır. Bitki bazlı ürünlerde tahıllar, baklagiller, fındık, fıstık gibi kabuklu yemişler, çeşitli tohumlar, tohum ekstraktları ve yalancı tahıllar kullanılmaktadır. Çok çeşitli kaynaklardan elde edilen bitkisel sütler (badem, ceviz, kaju, fındık) kefir üretiminde alternatif hammadde ya da ikame hammadde olarak önemli birer alternatiftir. Ayrıca endüstriyel yağlı tohumlardan arta kalan yan ürünler bitki bazlı kefir üretimi için değerli bir hammadde olabilmektedir. Endüstriyel boyutta olmasa da ham şeker şurupları dünyanın pek çok bölgesinde kefir fermantasyonunda kullanılmaktadır. Bu çeşitlilik laktoz intoleransı ya da süt proteini alerjisi gibi özel ihtiyaçları olan insanların tüketimleri için probiyotik içecek açığının kapatılmasında önemlidir. Kefir danesiyle fermantasyonda farklı hammaddeler kullanıldığında tıpkı sütte olduğu gibi yapı, ilgili mikroorganizmalar ve fermantasyon ürünleri genel olarak ortak olmasına rağmen mikrobiyal türlerin konsantrasyonu ve yoğunluğu, ayrıca oluşan ürünlerin miktarı kullanılan mevcut enerji kaynaklarına göre değişmektedir. Beslenme konusunda müşteri talep ve ihtiyaçları buraya yöneldiği için farklı hammaddeler ve üretim yöntemleri konusunda arayışlar sürmektedir.

**Anahtar Kelimeler :** Kefir, bitkisel süt, meyve bazlı kefir

## ARONIA MELANOCARPA VE VITIS VINIFERA ÇEKİRDEĞİ EKSTRAKTI TİCARİ FORMÜLASYONUNUN ANTI-SİTOTOKSİK AÇIDAN DEĞERLENDİRİLMESİ

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### ÖZET

*Aronia melanocarpa* ve *Vitis vinifera* ekstraktı (AVE) ticari formülasyonunun *Allium cepa* testi uygulanarak *Allium cepa* kök uçlarında meydana getirebileceği anti-sitotoksik etkinin değerlendirilmesi amaçlanmıştır. AVE ticari formülasyonun farklı konsantrasyonları (%6 ve %12) dimetil sülfoksit (DMSO) içinde çözülerek hazırlanmıştır. Etil metan sülfonat (EMS) pozitif kontrol olarak, DMSO negatif kontrol olarak kullanılmıştır. İki farklı AVE ticari formülasyonu dozlarının, DMSO'nun ve EMS'nin etkisi farklı uygulama süreleri (24 ve 48 saat) ile *A. cepa* kök uçlarına uygulanmıştır. 24 saat süresince %12 dozda AVE ticari formülasyonu uygulanmasıyla %6 dozda uygulanmasına kıyasla mitotik indeks (%MI)'in artış gösterdiği belirlenmiştir. 48 saat süresince %12 AVE ticari formülasyonunun uygulanmasının %6 dozda uygulamaya göre %MI'ı arttırdığı saptanmıştır. Bununla birlikte, 24 saat süresince AVE ticari formülasyonunun %6 dozda ve %12 dozda uygulanması arasında MI(%) bakımından istatistiksel olarak önemli bir farklılık saptanmamıştır. Aynı şekilde 48 saat süresince AVE ticari formülasyonunun %6 dozda ve %12 dozda uygulanması arasında %MI bakımından istatistiksel olarak önemli bir farklılık saptanmamıştır. Artan AVE ticari formülasyonu dozu ile %MI'in artış gösterdiği fakat aynı konsantrasyonda uygulama süresi artışı ile %MI'de önemli bir değişim gözlenmediği ortaya konmuştur. Negatif kontrol ve pozitif kontrol gruplarıyla, AVE ticari formülasyonu dozları karşılaştırıldığında ticari formülasyonunun anti-sitotoksik etkisinin bulunduğu belirtilebilmektedir. Yani, 24 ve 48 saat uygulama süresince konsantrasyon artışı ile birlikte *A. cepa* kök ucu hücrelerinde hücre bölünmesini inhibe etmediği saptanmıştır. Bu nedenle, *A. melanocarpa* ve *V. vinifera* çekirdeği ekstraktı ticari formülasyonunun %6 ile %12 dozda ve 24 ile 48 saat uygulama sürelerinde *A. cepa* kök ucu hücrelerinde herhangi bir sitotoksik etkisinin bulunmadığı belirtilebilmektedir.

**Anahtar kelimeler:** *Aronia melanocarpa*, *Vitis vinifera*, sitotoksiste, *Allium cepa* testi

## YAŞLILARDA OTAGO EGZERSİZLERİNİN DÜŞME KORKUSUNA, DENGEEYE, GÜÇLENDİRMEYE VE FONKSİYONEL HAREKETLİLİĞE ETKİSİ: RANDOMİZE KONTROLLÜ DENEYSSEL ÇALIŞMA

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### ÖZET

Otago egzersizleri ısınma, güçlendirme, denge ve yürüme şeklinde kombine egzersizleri içeren çok bileşenli bir programdır. Program farmakolojik olmayan pratik bir yöntem olup müdahale için minimum ekipman gerektiren maliyet etkin bir girişimdir. Bu araştırma huzurevinde yaşayan yaşlılarda Otago egzersizlerinin düşme korkusuna, dengeye, güçlendirmeye ve fonksiyonel hareketliliğe etkisini belirlemek amacıyla paralel grup tek merkezli randomize kontrollü deneysel tasarımda yürütülmüştür. Araştırmada 28 deney, 28 kontrol toplamda 56 birey ile yaşa ve cinsiyete göre tabakalı randomizasyon yapılarak çalışılmıştır. Veriler başlangıçta, 8. ve 12. haftada kişisel bilgi formu, Modifiye Düşme Etkinlik Ölçeği, Berg Denge Ölçeği Yaşlılarda Güçlendirme Ölçeği, 30 Saniye Otur Kalk Testi, El Kavrama Gücü Ölçüm Testi, Zamanlı Kalk Yürü Testi, Altı Dakika Yürüme Testi ile toplanmıştır. Araştırmacı müdahale grubuna ilk dört hafta, haftada üç kez Otago egzersiz eğitimi vermiş ve bireylerle uygulamıştır. Sonraki sekiz hafta araştırmacı egzersizlerin devamlılığının sağlanması için kuruma ziyaret gerçekleştirmiş ve bireylerle telefonla iletişime geçmiştir. Kontrol grubundaki katılımcılardan, temel değerlendirme ve randomizasyonun ardından 12 hafta boyunca rutin aktivitelerine devam etmeleri beklenmiştir. Verilerin analizinde Mann Whitney U testi, Friedman testi, genelleştirilmiş lineer modeli kullanılmıştır. Araştırma öncesi etik kurul, kurum, ölçek kullanım izni ve katılımcıların yazılı onamı alınmıştır. Otago egzersizlerinin dengeyi, alt ekstremitte gücünü, yaşlıları güçlendirme skorunu (orta etki) zamanlı kalk yürü testi skorunu (büyük etki) iyileştirdiği fakat düşme korkusunu, üst ekstremitte gücünü ve altı dakika yürüme testi sonuçlarını iyileştirmedeği belirlenmiştir. Sonuçtan yola çıkarak Otago egzersizleri huzurevi ortamlarında uygulanabilmesi konusunda sağlık çalışanlarının ve yöneticilerin farkındalığının artırılması ve yaygınlaştırılması önerilebilir. Ayrıca Otago egzersizlerinin huzurevlerinde çalışan hemşirelere öğretilmesi ve buna yönelik eğitimlerin planlanması sağlanabilir.

**Anahtar Kelimeler:** Otago egzersizi, düşme korkusu, denge, güçlendirme, fonksiyonel hareketlilik, yaşlı, hemşire

**THE EFFECT OF OTAGO EXERCISES ON FEAR OF FALLING, BALANCE, EMPOWERMENT AND FUNCTIONAL MOBILITY IN THE ELDERLY: A RANDOMIZED CONTROLLED TRIAL**

**ABSTRACT**

Otago exercises are a multi-component program that includes combined exercises such as warm-up, strengthening, balance, and walking. The program is a practical non-pharmacological method and is a cost-effective intervention that requires minimal equipment for intervention. The research was carried out in parallel-group, single-center randomized controlled experimental design to determine the effect of Otago exercises on the fear of falling, balance, strengthening, and functional mobility of the elderly living in nursing homes. In the study, a total of 56 individuals, consisting of 28 intervention and control groups, were studied by stratified randomization according to age and gender. Data were collected at the beginning, at the 8th and 12th weeks, with a personal information form, Modified Falls Efficacy Scale, Berg Balance Scale, Elderly Empowerment Scale, 30-s Chair-Stand Test, Handgrip Strength Test, Timed Up and Go Test, and 6-Minute Walk Test. The researcher gave Otago exercise training to the intervention group three times a week for the first four weeks and applied it to individuals. For the next eight weeks, the researcher visited the institution to ensure the continuity of the exercises and contacted the individuals by phone. Participants in control group were expected to continue their routine activities for 12 weeks after baseline assessment and randomization. Mann Whitney U test, Friedman test, and generalized linear model were used in the analysis of the data. Before the research, the permission of the ethics committee and institution, the permission to use the scale and the written consent of the participants were obtained. It was determined that the intervention improved balance, lower extremity strength, elderly empowerment score (moderate effect), and Timed Up and Go Test score (large effect), but did not improve fear of falling, upper extremity strength, and 6-Minute Walk Test results. Based on the result, it can be suggested to increase the awareness of health workers and administrators about the implementation of Otago exercises in nursing home environments and to spread them. In addition, Otago exercises can be taught to nurses working in nursing homes and trainings can be planned accordingly.

**Keywords:** Otago exercise, fear of falling, balance, empowerment, functional mobility, elderly, nurse

## İRİSİN HORMONUNUN SAĞLIĞA ETKİLERİ VE HEMŞİRELİK

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### ÖZET

İskelet kaslarının yağ dokusu tarafından protein yapısında olan irisin hormonu salgılanmaktadır. İrisin hormonu iskelet kasında, yağ dokusunda, kalp dokusunda, intrakraniyal arterlerde, böbreklerde, miyelin kılıfında, nöral hücrelerde, optik sinirde, overlerde, purkinje hücrelerinde, rektum, tükürük bezlerinde, ekrin ter bezinde, midede, testislerde, dilde bulunmaktadır. Diyabet, obezite, metabolik sendrom, böbrek yetersizliği, kanser, astım, depresyon, demans gibi birçok hastalıkta irisin hormonu miktar ve işlev olarak değişiklik göstermektedir. Egzersiz yapmak ve vücuda soğuk uygulama yapmak irisin hormonu artırmaktadır. İrisinin antioksidan savunma mekanizmasını aktive etmesi ile oksidatif stresi önlemekte ve bağışıklık sisteminde rol almaktadır. Alzheimerda ve depresyonda irisin hormonu azalmaktadır. Dolayısı ile bireyde irisin hormonun azalması ve artması durumunda hayati fonksiyonlar etkilenmektedir. Bu çalışma, irisin hormonun sağlığa etkileri ve hemşirelik açısından değerlendirilmesi amacıyla yapılmıştır. Hemşirelerin irisin hormonu hakkında bilgilenmesi, farkında olması ve bakıma entegre etmesi önerilmektedir.

**Anahtar Kelimeler:** İrisin hormonu, sağlık, hemşirelik

### HEALTH EFFECTS OF IRISIN HORMONE AND NURSING

#### ABSTRACT

The protein irisin hormone is secreted by the adipose tissue of skeletal muscles. Irisin hormone is found in skeletal muscle, adipose tissue, heart tissue, intracranial arteries, kidneys, myelin sheath, neural cells, optic nerve, ovaries, Purkinje cells, rectum, salivary glands, eccrine sweat gland, stomach, testicles, tongue. In many diseases such as diabetes, obesity, metabolic syndrome, kidney failure, cancer, asthma, depression, and dementia, irisin hormone varies in amount and function. Exercising and cold exposure to the body increase irisin hormone. By activating the antioxidant defense mechanism of the iris, it prevents oxidative stress and plays a role in the immune system. In Alzheimer's and depression, irisin hormone decreases. Therefore, if the irisin hormone decreases and increases in the individual, vital functions are

affected. This study was conducted to evaluate the effects of irisin hormone on health and nursing. It is recommended that nurses be informed about the irisin hormone, be aware of it and integrate it into care.

**Keywords:** Irisin hormone, health, nursing





## GERİATRİK CERRAHİ VE PERİOPERATİF YÖNETİMİ

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### ÖZET

Yapılan cerrahi girişimlerin önemli bir kısmını geriatrik popülasyon oluşturmaktadır. Yaşlanma ile hastalık görülme sıklığı artar, organ ve sistemlerde fonksiyonel azalma meydana gelir. Bu süreçte kardiyovasküler sistemde vasküler ve sempatik tonus, miyokard fonksiyonu, kalp iletim sistemi, kalp kapakları ve baroreseptörlerde meydana gelen değişiklikler, solunum kaslarında zayıflama, glomerüloskleroz kaynaklı kortikal atrofi sonucu böbrek ağırlığının azalması, karaciğer büyüklüğü ve işlevindeki değişiklikler, ölüm riski ile ilişkilendirilen kas miktarında azalma, bilişsel gerileme, hafıza kaybı, uyku bozuklukları, deliryum riski, çoklu ilaç kullanımı, ilaç etkileşimleri gibi faktörler cerrahi sürecin yönetilmesini zorlaştırır. Bu nedenle bu faktörlerin tayin edilmesi ve yönetilmesi etkin yapılmazsa hasta konforu, cerrahi kalite azalır; hastanede yatış süreci uzar, komplikasyon görülme olasılığı ve maliyet artar. Yaşlı erişkinlerde cerrahi, mevcut sorunu tedavi ederken hastanın bağımsızlığını ve işlevini korumayı amaçlar. Bu nedenle cerrahide hastanın bütüncül değerlendirilmesi, yaş almayla meydana gelen fizyolojik değişikliklerin tayin edilmesi hastaların cerrahi sürece uyumlandırılmasında ve bu sürecin etkin yönetilmesinde kritik öneme sahiptir. Bu derlemede yaşlanmaya bağlı yaygın fizyolojik ve patofizyolojik değişikliklere ve bu gruptaki hastaların perioperatif yönetiminin etkinliği için uygulanması gereken yöntemlere yer verilmiştir.

**Anahtar Kelimeler:** Geriatrik Hasta Fizyolojisi, Geriatrik Cerrahi, Perioperatif Süreç

### ABSTRACT

The geriatric population constitutes an important part of the surgical interventions. The incidence of disease increases with aging, and functional decline occurs in organs and systems. In this process, changes in vascular and sympathetic tone, myocardial function, cardiac conduction system, heart valves and baroreceptors in the cardiovascular system, weakening of respiratory muscles, decrease in kidney weight as a result of cortical atrophy caused by glomerulosclerosis, changes in liver size and function, decrease in the amount of muscle

associated with the risk of death. Factors such as cognitive decline, memory loss, sleep disorders, delirium risk, multiple drug use, drug interactions make the surgical process difficult to manage. Therefore, if the determination and management of these factors is not done effectively, patient comfort and surgical quality will decrease; The length of hospital stay increases, the likelihood of complications and the cost increase. Surgery in older adults aims to preserve the patient's independence and function while treating the existing problem. Therefore, the holistic evaluation of the patient in surgery and the determination of the physiological changes that occur with aging have critical importance in adapting the patients to the surgical process and in managing this process effectively. In this review, common physiological and pathophysiological changes due to aging and the methods that should be applied for the effectiveness of perioperative management of patients in this group are included.

**Keywords:** Geriatric Patient Physiology, Geriatric Surgery, Perioperative Process

## PANKREAS TUTULUMU OLAN COVID-19 HASTALARINDA VİTAMİN D RESEPTÖR GENİ *BSMI* VARYANTININ ARAŞTIRILMASI

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### ÖZET

**Amaç:** COVID-19, başlangıçta yalnızca üst solunum yollarına saldırdığı düşünülen fakat daha sonra birçok sistemi ve organı etkilediği tespit edilen bir hastalıktır. Etkilediği organlardan biri de pankreasır. Bu çalışmada COVID-19 Hastalarında Pankreas Tutulumunun Vitamin D Reseptör Geni BsmI (rs1544410) varyantı ile ilişkisinin araştırılması ve COVID-19 hastalarında pankreas tutulumunun mekanizmasını aydınlatmak hedeflenmiştir.

**Metod:** Çalışmaya COVID-19 hastalığına yönelik olarak yapılmış Kantitatif Real-Time PCR (qRT-PCR) test sonucu veya Toraks BT sonucu pozitif olan pankreas tutulumu olan hastalar ile COVID-19 hastalığına yönelik olarak yapılmış qRT-PCR test sonucu veya Toraks BT sonucu pozitif olan ve pankreas tutulumu olmayan hastalar dahil edilmiştir. qRT-PCR veya Toraks BT sonucu negatif olan gönüllüler çalışmaya dahil edilmemiştir. Hasta grubu 120, kontrol grubu 113 kişi olmak üzere toplam 233 kişi ile çalışma yürütülmüştür. Vitamin D Reseptör geninde bulunan BsmI (rs1544410) varyantının genotiplendirmesi polimeraz zincir reaksiyonu (PZR) ve restriksiyon fragment uzunluk polimorfizmi (RFLP) yöntemi kullanılarak yapılmıştır.

**Bulgular:** Vitamin D Reseptör Geni BsmI varyantı kontrol ve hasta gruplarında karşılaştırıldığında istatistiksel olarak anlamlı bir fark saptanmamıştır. Ayrıca hasta alt grupları kendi içinde karşılaştırıldığında da istatistiksel olarak anlamlı bir fark saptanmamıştır.

**Sonuç:** COVID-19 hastalarında pankreas tutulumu ve Vitamin D Reseptör Geni BsmI varyantı arasında istatistiksel olarak anlamlı bir ilişki tespit edilmemiştir. COVID-19'a bağlı gelişen pankreas tutulumunun sebebinin Vitamin D Reseptör Geni BsmI varyantı olduğu söylenememektedir. Çalışma sonuçlarının doğrulanması için farklı popülasyonlarda ve daha fazla hasta grubu ile yapılacak çalışmalar ihtiyaç bulunmaktadır.

**Anahtar Sözcükler:** COVID-19, Pankreas, Vitamin D, BsmI Varyantı

## INVESTIGATION OF VITAMIN D RECEPTOR GENE *BSMI* VARIANT IN COVID-19 PATIENTS WITH PANCREAS INVOLVEMENT

### ABSTRACT

**Objective:** COVID-19 is a disease that was initially thought to attack only the upper respiratory tract, but was later found to affect many systems and organs. One of the organs it affects is the pancreas. In this study, it was aimed to investigate the relationship of Pancreatic Involvement with Vitamin D Receptor Gene BsmI (rs1544410) variant in COVID-19 patients and to lighten the mechanism of pancreatic uptake in COVID-19 patients.

**Method:** Patients with pancreatic involvement with positive Quantitative Real-Time PCR (qRT-PCR) test result or Thorax CT for COVID-19 and patients with no pancreatic involvement and positive qRT-PCR test results or Thorax CT for COVID-19 were included. Volunteers who were negative for the QRT-PCR or Thorax CT result were not included in the study. A total of 233 individual, patient group 120, control group 113 individual, were included. The genotyping of BsmI (rs1544410) variant in the vitamin D Receptor gene was done using polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) method.

**Results:** When the Vitamin D Receptor Gene BsmI (rs1544410) polymorphism was compared in the control and patient groups, no statistically significant difference was found. In addition to this, when the patient subgroups were compared within themselves, no statistically significant difference was found.

**Conclusion:** No statistically significant relationship was found between pancreatic involvement and Vitamin D Receptor Gene BsmI (rs1544410) variant in COVID-19 patients. It shows that, we may not be said that the cause of pancreatic involvement due to COVID-19 is the Vitamin D Receptor Gene BsmI polymorphism. In order to verify the results of the study, there is a need for studies with different populations and more patient groups.

**Keywords:** COVID-19, Pancreas, Vitamin D, BsmI Variant



## COVID-19'LU HASTALARDA PANKREAS TUTULUMU İLE VDBP GENİ RS7041 VARYANTI İLİŞKİSİNİN ARAŞTIRILMASI

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### ÖZET

**Amaç:** Yeni tip korona virüs hastalığı akciğerleri tutan ve tüm solunum yolu boyunca enfeksiyona neden olan bir hastalıktır. Ayrıca sadece solunum yolunu enfekte etmemekle birlikte vücuttaki diğer doku, organ ve sistemlerde de hasara neden olabilmektedir. Virüsün hedef aldığı organlardan birisi ise pankreasır. Klinikte yatan bazı korona virüs hastalarının pankreas enzim seviyelerinin yüksek olduğu görülmüştür. Buradan yola çıkarak bu araştırmada

COVID-19 tanısı konulan hastalarda pankreatit tablosu görülenlerin Vitamin D bağlayıcı protein (VDBP) geni rs7041 varyantında mutasyon varlığının olup olmadığı incelenmesi amaçlanmıştır.

**Metod:** COVID-19 teşhisi alan pankreas enzim seviyeleri normal 113 hasta ile hem COVID-19 teşhisi almış hem de pankreas enzim seviyeleri yüksek 120 hasta çalışmaya dahil edilmiştir. VDBP geninde yer alan 11. tekli nükleotid varyasyonunun rs7041 genotiplendirilmesi polimeraz zincir reaksiyonu (PCR) ve restriksiyon fragment uzunluk polimorfizmi (RFLP) yöntemiyle belirlenmiştir.

**Bulgular:** COVID-19 tanısı alan ve pankreas enzim seviyeleri yüksek olan hasta grubunda VDBP geni rs7041 varyantı GG genotipi oranının pankreas enzim seviyeleri normal COVID-19 hastalarına göre daha fazla olduğu belirlenmiştir. Her iki grup arasında yapılan karşılaştırmalar neticesinde aradaki genotip oranları arasındaki farkın istatistiksel olarak anlamlı olduğu belirlenmiştir ( $p=0.004$ ).

**Sonuç:** COVID-19'lu hastaların VDBP geninde yer alan rs7041 varyantının pankreatit oluşumuna yatkınlık oluşturabileceği saptanmıştır. Çalışma sonuçlarının doğrulanması için farklı popülasyonlarda ve daha fazla hasta grubu ile yapılacak çalışmalara ihtiyaç bulunmaktadır.

**Anahtar kelimeler:** COVID-19, Pankreas, Vitamin D, VDBP varyantı.

## INVESTIGATION OF THE rs7041 VARIABLE OF VDBP GENE RELATION WITH PANCREATIC INVOLVEMENT IN PATIENTS WITH COVID-19

### ABSTRACT

**Objective:** The new type of coronavirus disease is a disease that holds lungs and causes infection along the entire respiratory tract. It may not only infect the airway, but also cause damage to other tissue, organs and systems in the body. One of the organs the virus targets is pancreas. Some corona virus patients lying in the clinic were found to have high levels of pancreatic enzyme. This study aims to examine whether the presence of mutation exists in the Vitamin D-connector protein (VDBP) gene rs7041 variant of the pancreatitis table for patients diagnosed with COVID-19.

**Method:** 113 patients with normal pancreatic enzyme levels diagnosed with COVID-19 and 120 patients with both COVID-19 diagnosis and high pancreatic enzyme levels were included in the study. The rs7041 genotyping of the 11th single nucleotide variation in the VDBP gene was determined by polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) methods.

**Results:** In the patient group with COVID-19 diagnosis and high pancreatic enzyme levels, the VDBP gene rs7041 variance GG genotype ratio was determined higher than the normal

COVID-19 patients. As a result of comparisons between the two groups, the difference between the genotype ratios in the relationship was determined to be statistically significant ( $p=0,004$ ).

**Conclusion:** COVID-19 patients were determined that the rs7041 halves in the VDBP gene could be prone to pancreatitis formation. Different populations and work with more patient groups are needed to verify the results of the study.

**Keywords:** COVID-19, Pancreas, Vitamin D, VDBP polymorphism.





## KSİLAZİN-PROPOFOL ANESTEZİSİNDEKİ RUTİN KASTRASYON YAPILAN KEDİLERDE TESTİS İÇİ LİDOKAİN UYGULAMASININ OPERASYON SIRASINDAKİ ETKİLERİ

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### ÖZET

Kastrasyonun orta derecede ağrılı bir ameliyat olduğu varsayılır ve veteriner hekimlikte en sık uygulanan ameliyatlardan biridir. Veteriner hekimlerin sadece %30'unun rutin kastrasyon uygulanan kedilere analjezik ilaç verdiği bildirilmiştir. Bu çalışma, elektif kastrasyon uygulanan ksilazin-propofol anestezisindeki kedilerde intratestiküler olarak lidokainin perioperatif nosifensif cevaba etkisini araştırmak amacıyla yapıldı.

Planlı kastrasyon yapılan 0,75 ila 3 yaş arası sekiz kedi çalışmaya dahil edildi. Kediler rastlantısal olarak ksilazin-propofol anestezisi uygulan deney grubuna dahil edildi. Tüm kediler ksilazin (2 mg/kg, IM) ile premedikasyona tabi tutuldu. 15 dakika sonra gruptaki kedilere vena cephalica antebrachium'a 20-22 G kateter yerleştirildi ve propofol (4 mg/kg, IV) ile 1 dakikaya kadar süren yavaş enjeksiyon ile anestezi başlatıldı. Operasyon süresince elektrokardiyogram (EKG), solunum frekansı (*f*R), nabız oksimetresi (SPO2), kan basıncı (BP), kalp hızı (HR) ve rektal sıcaklık (RT) GTE9003E model çok parametrelili hastabaşı monitör ile takip edildi (Guoteng; Çin). Kedilerin sol testisine 1 mg/kg lidokain %2 (Lidokaine; Himfarm) derialtı iğnesi (Bıçakçılar; Türkiye) ve uygun boyutta enjektör kullanarak yavaş enjeksiyon ile verildi. İstatistiksel değerlendirme için ölçümlerin (*f*R, HR, BP, RT ve SPO2) yapıldığı 5 zaman noktası; T0 başlangıç, ardından T1 ameliyatın başlangıcı, T2 ve T3 sırasıyla sol ve sağ funiculus spermaticus'un ligasyonu ve T4 ameliyatın sonundaydı. Grupta başlangıç ve T1, T2, T3 veya T4 zaman noktaları arasında *f*R değerinde istatistiksel olarak anlamlı bir fark yoktu. İki kedinin *f*R ve HR değerleri, ligasyon prosedürünü (T2 zaman noktası) takiben grupta %20 arttı. Grupta T3 zaman noktasında hiçbir kedinin *f*R ve HR değerleri %20 artmadı.

**Anahtar Kelimeler :** Kastrasyon, lokal anestezi, kedi

## KÖPEKLERDE MEDETOMİDİN/KETAMİN ANESTEZİSİNİN VE BUNUN ATİPAMEZOL İLE ETKSİNİN TERS ÇEVİRİLMESİNİN EKOKARDİOGRAFİK DEĞERLER ÜZERİNDEKİ ETKİLERİ

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### ÖZET

Doza, uygulanan deneysel modele ve ilaç seçimine bağlı olarak kardiyovasküler sistemin anesteziklere reaksiyonu değişik olabilir. Birkaç çalışma, transtorasik ekokardiyografi için kullanılan farklı anestezik ajanların köpeklerde kardiyak fonksiyonlar üzerindeki etkilerini karşılaştırmıştır; ancak bu çalışmaların hiçbiri medetomidin/ketamin uygulamasının etkilerini ve bunun atipamezol ile geri döndürülmesini ekokardiyografik olarak değerlendirmemiştir. Bu çalışmanın amacı, köpeklerde medetomidin-ketamin anestezi rejiminin kısa süreli ekokardiyografik etkilerini ve geri dönüşünü in vivo olarak araştırmaktır. 3 ay boyunca düzenli aralıklarla ovariohisterektomi işlemi için sevk edilen erişkin ve sağlıklı 10 dişi köpek (5.7-14.5 kg ağırlığında ve 0.5-3 yaşında) çalışmaya dahil edildi. 2-D ve M-mode ekokardiyografik ölçümler, köpekler sağ yan yatar pozisyondayken gerçekleştirilmiştir. Grup, anestezi indüksiyonundan sonra interventriküler septum %'si, sol ventrikül çapı %'si ve sol ventrikül ejeksiyon fraksiyonunda düşüşler gösterdi (başlangıç ve T1, tümü,  $p < 0.05$ ). Ekokardiyografik değerler medetomidin-ketamin ile yapılan anesteziden sonra anlamlı olarak etkilenmiştir; ve atipamezol, ovariohisterektomi gibi abdominal cerrahiden sonra köpeklerde başlangıç değerlerine hızlı ve güvenli bir şekilde dönüş için yararlı olabilir.

**Anahtar Kelimeler :** Ekokardiyografi, atipamezol, köpek

## YAĞI AZALTILMIŞ PEYNİRLERDE YÜKSEK BASINÇ UYGULAMALARI

### HIGH PRESSURE APPLICATIONS IN REDUCED-FAT CHEESE

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#### ÖZET

Son yıllarda tüketiciler, sağlığa faydalı, besinsel ve organoleptik özellikler açısından güvenilir, yağ ve kalorisi düşük olan gıdaları talep etmektedir. Düşük yağ oranına sahip süt ürünlerine yönelik tüketici talebinin artması sonucunda, yağ oranı azaltılmış peynirlere olan ihtiyaç da önemli oranda artmıştır. Ancak yağı azaltılmış peynirlerde, tam yağlı çeşidinin karakteristik lezzetini ve tekstürünü elde etmenin zorluğu önemli bir sorundur. Bu nedenle düşük yağlı peynir üretiminin ve duyu niteliklerinin optimize edilmesine yönelik çalışmalar önem kazanmıştır. Bu çalışma, yüksek basınç uygulamasının yağ azaltılmış peynirlerin bazı özellikleri üzerine etkilerini gözden geçirmektedir.

Çalışma sonucunda uygulanan basınç, bekletme süresi ve sıcaklığın yağ azaltılmış peynirlerdeki değişimleri etkilediği gözlemlenmiştir. Bunun yanı sıra yüksek basınç uygulamasının, yağ azaltılmış peynirlerin raf ömrünü uzattığı, verimini artırdığı ve tekstürünü iyileştirdiği belirlenmiştir. Bununla birlikte Türkiye’de yağ azaltılmış peynir üretiminde, yüksek basınç uygulamasının kullanılmasına yönelik çalışmalar yetersizdir. Bu doğrultuda yağ azaltılmış peynir üretiminde yüksek basınç uygulaması ile ilgili çalışmaların artırılması ve bu peynirlerin üretimine uygunluğunun ortaya konulması gerekmektedir.

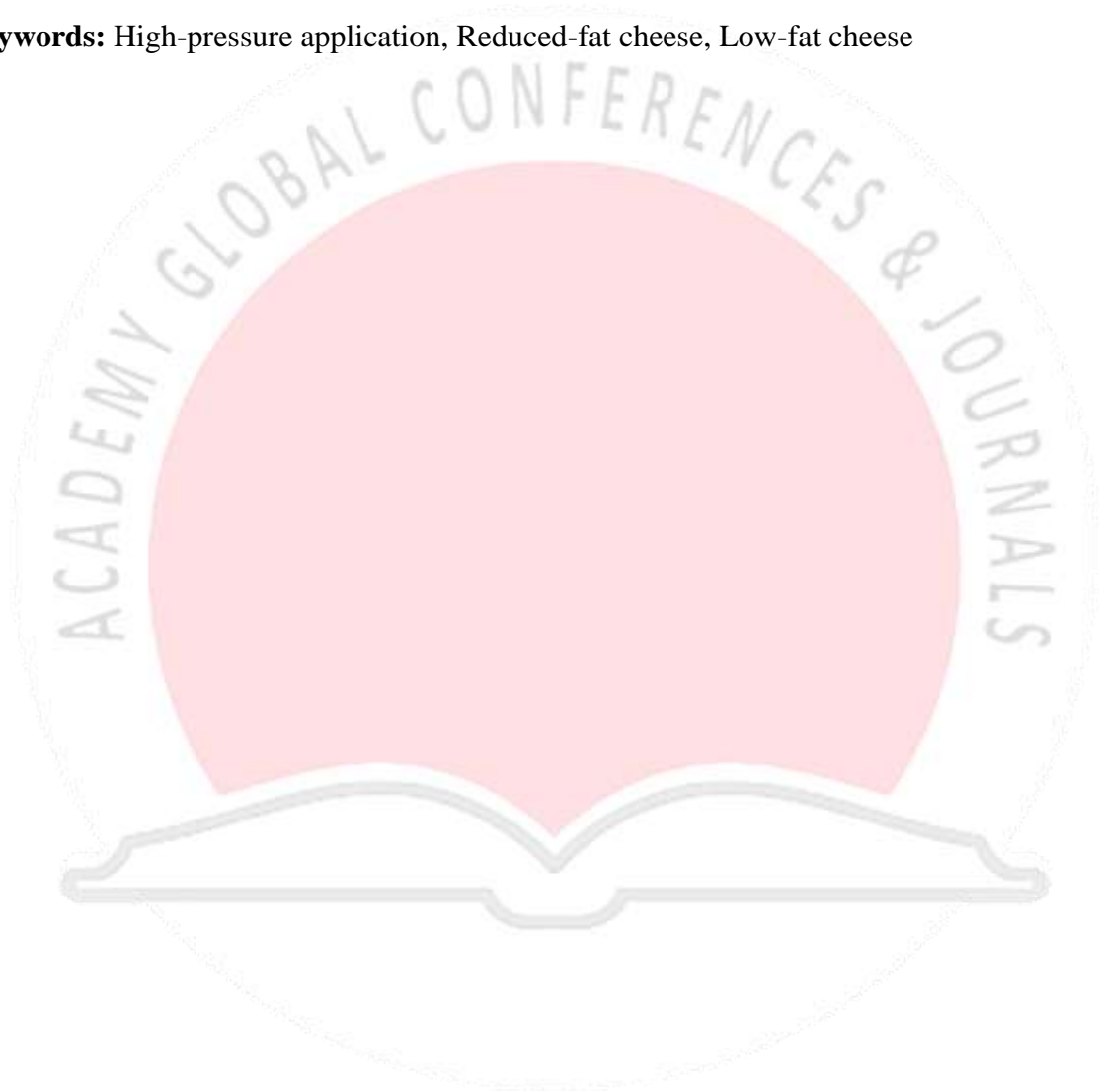
**Anahtar Kelimeler:** Yüksek basınç uygulaması, Yağı azaltılmış peynir, Az yağlı peynir

#### ABSTRACT

In recent years, consumers have demanded foods that are beneficial to health, reliable in terms of nutritional and organoleptic properties, and low in fat and calories. As a result of increasing consumer demand for low-fat dairy products, the need for reduced-fat cheeses has also increased significantly. However, the difficulty of obtaining the characteristic flavor and texture of the full-fat variety in reduced-fat cheeses is a critical problem. For this reason, studies for optimizing low-fat cheese production and its sensory qualities have gained importance. This study reviews the effects of high-pressure application on some properties of reduced-fat cheeses.

As a result of the study, it was observed that the applied pressure, holding time and temperature influenced the changes in the reduced-fat cheeses. In addition, it has been determined that high-pressure application prolongs the shelf life, increases the yield and improves the texture of the reduced-fat cheeses. However, studies on the use of the high-pressure application in the production of reduced-fat cheese in Turkey are insufficient. In this direction, it is necessary to increase the studies on the application of high pressure in the production of reduced-fat cheese and to reveal the suitability for producing these cheeses.

**Keywords:** High-pressure application, Reduced-fat cheese, Low-fat cheese



## TANNAZ ENZİMİ UYGULAMASININ SİYAH ÇAY EKSTRAKTLARININ RENK VE DUYUSAL ÖZELLİKLERİ ÜZERİNE ETKİSİ

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### Özet

Bu çalışmada, farklı çay: su oranları ve ekstraksiyon süreleri kullanılarak elde edilen siyah çay ekstraktlarına tannaz enzimi uygulanmasının, ekstraktların renk ve duyuşsal özellikleri üzerine olan etkisi araştırılmıştır. Bu amaçla klasik ekstraksiyon yöntemi ile, 100°C demleme sıcaklığında farklı süre (5, 10, 20 ve 40 dakika) ve çay:su oranları (1:100; 2.5:100, 5:100 ve 10:100) uygulanarak elde edilen ekstraktlar, tannaz enzimi ile muamele edilmiştir. Çalışmada elde edilen ekstraktlarda suda çözünür kuru madde (SÇKM), pH, renk analizleri ile duyuşsal olarak değerlendirilmesi yapılmıştır. Tannaz enzimi uygulaması örneklerin SÇKM değerlerinde artış meydana getirirken, pH değerlerinde azalmaya yol açmıştır. Tannaz enzimi uygulanan örneklerde genellikle pH değerinde meydana gelen düşüşlerin epikateşin gallat (ECG), epigallokateşin gallat (EGCG) gibi gallatlı kateşinlerin hidrolizi sonucu artan gallik asit miktarına bağlı olduğu düşünülmektedir. Çay ekstraktlarına tannaz enzim ilavesinin örneklerin L değerlerinde genellikle artış sağladığı gözlemlenmiş ve enzim uygulanmış ve uygulanmamış örneklerin L değerleri arasındaki farklılıkların istatistiksel olarak da genellikle önemli ( $p < 0.05$ ) olduğu belirlenmiştir. Siyah çay ekstraktları; aroma, burukluk, dem rengi, dolgunluk ve genel değerlendirme gibi kriterler bakımından duyuşsal analiz için panelistler tarafından değerlendirilmiştir. Duyusal analiz sonuçlarına göre ise genel değerlendirme bakımından en yüksek puanı (3.40) 2.5:100 çay:su oranında, 100°C'de 5 dakikalık demleme koşullarında tannaz enzimi uygulanmış örnek almıştır. Aroma açısından en yüksek puanı 5:100 çay:su oranında, 100°C'de 5 dakikalık demleme koşullarında 3.85 puan ile tannaz enzimi uygulanmış örnek almıştır.

**Anahtar kelimeler:** siyah çay ekstraktı, tannaz, renk, duyuşsal değerlendirme

## EFFECT OF TANNASE ENZYME APPLICATION ON COLOR AND SENSORY PROPERTIES OF BLACK TEA EXTRACTS

### Abstract

In this study, it was investigated the effect of tannase enzyme application on black tea extracts obtained by using different tea:water ratios and extraction times on the color and sensory properties of the black tea extracts. For this purpose, tannase enzyme was applied to the extracts obtained by applying with the classical extraction method at 100°C brewing temperature for different times (5,10, 20 and 40 minutes), tea:water ratios (1:100;2.5:100; 5:100; 10:100). Water-soluble dry matter (WSDM), pH, color, and sensory analysis were made in the extracts obtained in the study. Tannase enzyme application caused an increase in the WSDM values, while it caused a decrease in the pH values of the samples. It is thought that the decrease in pH value in samples treated with tannase enzyme is due to the increased amount of gallic acid as a result of hydrolysis of gallate catechins such as epicatechin gallate (ECG), epigallocatechin gallate (EGCG). It was observed that the application of tannase enzyme to the black tea extracts generally increased the L values of the samples, and the differences between the L values of the samples with and without the application of the enzyme were found to be significant ( $p < 0.05$ ) statistically. It was evaluated the black tea extracts by the panelists for sensory analysis in terms of criteria such as aroma, astringency, brew color, fullness and general evaluation. According to the results of the sensory analysis, the highest score (3.40) in terms of the general evaluation was obtained for the sample with the tannase enzyme applied at the ratio of 2.5:100 tea:water, at 100°C for 5 minutes. The highest score in terms of aroma was obtained by applying tannase enzyme with a score of 3.85 under 5:100 tea:water ratio and 5-minute brewing conditions at 100°C.

**Keywords:** black tea extract, tannase, color, sensory analysis

## KADMIYUM STRESİNE MARUZ BIRAKILAN ARPA TOHUMLARINDA DIŞSAL ASKORBAT UYGULAMASININ ÇİMLENME PARAMETRELERİ ÜZERİNE ETKİLERİNİN İNCELENMESİ

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### ÖZET

Bitkiler yaşamları boyunca çevresel stres etmenlerine maruz kalmaktadırlar. Bu etmenler içinde ağır metal stresi son yıllarda artan sanayi faaliyetleri, madencilik, kimyasal atıkların çevreye salınımı ve sentetik gübrelemenin yaygınlaşması nedeniyle bitkiler için ciddi bir tehdit haline gelmiştir. Ağır metallerden bazıları bitkiler için mikro besin elementi olarak kullanılsa da, bunların yüksek konsantrasyonları bitkilerin büyüme ve gelişmelerini ciddi biçimde etkilemektedir. Bitkilerin maruz kaldığı ağır metal stresleriyle başa çıkabilmek adına dışsal uygulamaların yapılması sıklıkla başvurulan bir yöntem olarak ön plana çıkmıştır. Bu çalışmada önemli bir ağır metal olan kadmiyum stresine (0,5 mM ve 1,5 mM Cd) maruz bırakılmış olan arpa (Kral-97) tohumlarına dışsal askorbat uygulaması (10 mg/L, 20 mg/L, 30 mg/L ASC) yapılmış ve çimlenme yüzdeleri, radikula ve koleoptil gelişimleri incelenmiştir. Elde edilen sonuçlara göre kontrol gruplarına kıyasla 0,5 mM Cd çimlenme oranını %62, 1,5 mM Cd uygulaması ise %91 oranında azaltmıştır. Bu gruplara dışsal ASC uygulandığında ise istatistiksel olarak anlamlı bir farkın meydana gelmediği görülmüştür. 0,5 mM kadmiyum uygulaması radikula gelişimini önemli ölçüde azaltmıştır. Askorbat uygulaması ise hem radikula hem de koleoptil boyunda artışlara neden olmuştur. 1,5 mM Cd uygulaması sonucunda çimlenme oranlarının düştüğü, çimlenen tohumlarda ise özellikle radikula gelişiminin azaldığı görülmüştür. Bununla birlikte özellikle 30 mg/L ASC uygulamasıyla birlikte radikula ve koleoptil uzunluğunun 1,5 mM kadmiyum uygulanan gruba kıyasla arttığı belirlenmiştir. Ayrıca tek başına askorbat uygulaması konsantrasyona bağlı olarak radikula ve koleoptil gelişimini arttırmıştır. Sonuç olarak dışsal askorbat uygulamasının kadmiyum ağır metal stresi altındaki arpa tohumlarında radikula ve koleoptil gelişimini uyardığı ve bu durumun stresle başa çıkabilmek adına bitkiye avantaj sağladığı söylenebilir.

**Anahtar Kelimeler :** Arpa, Kadmiyum, Askorbat, Çimlenme parametreleri

## THE PERFORMANCE OF WOOD MATERIAL DURING NATURAL WEATHERING

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### ABSTRACT

When wooden materials are exposed to external weather conditions, they are affected by factors such as resistance in the external environment, sunlight, rain, high humidity, variable atmospheric humidity and temperature. Both its appearance and mechanical properties change. Although wood is used in many environments, it cannot show sufficient resistance to external weather conditions due to its hydrophilic structure. Undesirable deformations may occur on the wooden surface by the consumer due to external weather conditions.

As a multi-purpose material, wood is used in the construction of many structures, from houses and public service buildings such as stadiums to high-rise buildings. However, wood, which is not resistant to fire, can cause problems when used in public areas without proper fire protection. When pigmented fire retardant wood coatings are preferred, they should appeal to the tastes of architects and building owners and have a beautiful and natural appearance.

**Key Words:** Aging, Natural Weathering Conditions, Surface Properties

### AHŞAP MALZEMENİN DIŞ ORTAM KOŞULLARINDAKİ PERFORMANSI

### ÖZET

Ahşap malzemeler dış hava koşullarına maruz kaldığında dış ortamdaki direnç, güneş ışığı, yağmur, yüksek nem oranı, değişken atmosferik nem ve sıcaklık gibi faktörlerden etkilenmektedir. Hem görünümü hem de mekanik özellikleri değişmektedir. Ahşap birçok ortamda kullanılmakla birlikte yapısındaki hidrofil yapıdan dolayı dış hava koşullarına yeterli dayanımı gösterememektedir. Dış hava koşullarına maruz kaldığında ahşap yüzeyde tüketici tarafından istenmeyen deformasyonlar oluşabilmektedir.

Çok amaçlı bir malzeme olarak ahşap, evlerden stadyumlar gibi kamu hizmetine yönelik binalardan yüksek binalara kadar pek çok yapının inşa edilmesinde kullanılmaktadır. Bununla birlikte alev almaya karşı bir dayanıklılığı olmayan ahşap, uygun yangın korunması olmadan halka açık alanlarda kullanımında sıkıntı oluşturabilmektedir. Pigmentli yangın geciktirici ahşap kaplamalar tercih edildiğinde ise, mimarların ve bina sahiplerinin zevklerine hitap etmeleri, güzel ve doğal bir görünüme sahip olmaları gerekmektedir.

**Anahtar Kelimeler:** Yaşlandırma, Dış Hava Koşulları, Yüzey Özellikleri



## DETERMINATION OF PHENOLIC CONTENTS AND ANTIOXIDANT ACTIVITIES OF THREE PLANTS COLLECTED FROM GİRESUN

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### ABSTRACT

Phenolic compounds are among the most important bioactive compounds among secondary metabolites. In this study, three plant species (*Epilobium angustifolium* L., *Artemisia annua* L., and *Viola altaica* Ker.- Gawl subsp. *oreades* (M. Bieb) Becker) collected from the Şebinkarahisar region of Giresun were extracted with methanol via ultrasound assisted extraction (UAE) method. The quantification of some phenolic compounds in these plants was analyzed by LC-MS/MS. Then, the antioxidant activities were evaluated by the methods of 2,2-azino-bis(3ethylbenzo-thiazoline-6-sulfonic acid (ABTS<sup>•+</sup>), 2,2-diphenyl-1-picrylhydrazil (DPPH<sup>•</sup>) radical scavenging activities, and ferric reducing/antioxidant power (FRAP). The total phenolic contents (TPC) of extracts were determined by the Folin-Ciocalteu method. The extract of *E. angustifolium* L. exhibited the highest ABTS<sup>•+</sup>, DPPH<sup>•</sup>, and FRAP activities (SC<sub>50</sub>: 0.00300±0000 mg/mL, SC<sub>50</sub>: 0.00287±0000 mg/mL, 3802.23±18.36 µM TEAC (Trolox equivalent antioxidant capacity), respectively). Also, the *E. angustifolium* L. extract had the highest TPC (887.85±4.47 GAE (gallic acid equivalent), µg/mL) among other extracts. The most abundant phenolic compound in the *E. angustifolium* L. extract was gallic acid (3.373±0.094 mg/g). The most abundant phenolic compound found in *A. annua* L. and *V. altaica* extracts was rutin, which was found to be 2.561±0.079 mg/g and 300.51±4.545 mg/g, respectively.

These plants, which have high antioxidant effects and high total phenolic amounts, can be used as food supplements or for the supply of active substances. If antibacterial properties are high, antibacterial fabrics can be obtained as a result of dyeing with these plants.

**Keywords:** *Epilobium angustifolium* L., *Artemisia annua* L., *Viola altaica*, total phenolic content, antioxidant activity, phenolics

## HUA'NIN KÜLT LİDERLİK PROPAGANDASINDA TANGSHAN DEPREMİ'NİN ROLÜ

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### ÖZET

28 Temmuz 1976 tarihinde Çin Halk Cumhuriyeti'nde (ÇHC) Tangshan merkezli gerçekleşen depremde yüz binlerce insan hayatını kaybederken, yüz binlerce insan da yaralanmıştır. Depremden kısa bir süre sonra da ÇHC lideri Mao Zedong hayatını kaybetmiş ve yerine Hua Guofeng gelmiştir. Mao'nun ölümüyle ÇHC'de Hua'nın kült liderlik propagandasına girilmiş ve bu propagandayla Hua'nın Mao'nun halefi olduğu vurgulanmaya çalışılmıştır. Bu kapsamda Tangshan Depremi, Hua'nın kült liderlik propagandasında etkili bir şekilde kullanılmıştır. Çalışmada Tangshan Depremi'ni konu alan propaganda posterlerinin Hua'nın kült liderlik propagandasındaki rolünün tespit edilmesi amaçlanmıştır. Bu amaçla konuya ilişkin propaganda posterlerindeki görsel ve yazılı göstergeler, depremin kült liderlik propagandası amaçlı kullanımı bağlamında göstergebilimsel açıdan analiz edilmiştir. Çalışmada elde edilen bulgular kapsamında propaganda posterleri üzerinden Hua'nın depremde ÇHC'li depremedelerin yaralarının sarılmasında aktif bir rol üstlendiğinin ve depremedelerle iç içe olduğunun yansıtılmaya çalışıldığı tespit edilmiştir. Bu şekilde propaganda posterleri üzerinden Hua'nın ÇHC halkının sorunlarıyla doğrudan ilgilenen bir lider olduğuna yönelik imajın çizilmeye çalışıldığı sonucuna ulaşılmıştır.

**Anahtar Kelimeler:** Kült liderlik, Propaganda, Deprem, Çin Halk Cumhuriyeti, Hua

### THE ROLE OF THE TANGSHAN EARTHQUAKE IN HUA'S CULT LEADERSHIP PROPAGANDA

#### ABSTRACT

Hundreds of thousands of people lost their lives and hundreds of thousands were injured in the Tangshan-centered earthquake in the People's Republic of China (PRC) on July 28, 1976. Shortly after the earthquake, Chinese leader Mao Zedong died and was replaced by Hua Guofeng. After Mao's death, Hua's cult leadership propaganda was attempted in the PRC, and with this propaganda, it was sought to emphasize that Hua was Mao's successor. In this context, the Tangshan Earthquake was effectively used in Hua's cult leadership propaganda. In the study, it was aimed to determine the role of the propaganda posters about the Tangshan Earthquake in Hua's cult leadership propaganda. For this purpose, the visual and written indicators in the propaganda posters on the subject were analyzed semiotically in the context of the use of the earthquake for cult leadership propaganda. Within the scope of the findings obtained in the

study, it was determined that it was sought to reflect that Hua took an active role in healing the wounds of the Chinese earthquake victims and he was intertwined with the earthquake survivors. In this way, it was concluded that the image of Hua as a leader directly interested in the problems of the Chinese people was tried to be drawn through the propaganda posters.

**Keywords:** Cult leadership, Propaganda, Earthquake, People's Republic of China, Hua



## A MINI REVIEW ON APPLICATIONS OF PERSONAL PROTECTIVE EQUIPMENTS (PPE) AS TECHNICAL TEXTILES PRODUCTS

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### ABSTRACT

In this mini review study, Personal Protective Equipments (PPE) as technical textiles products have been mentioned about their design criterias, using high performance fibers, using textile-based production methods, their treatment processes, their thermal comfort performances, their applications and their quality control tests. Applications of knitting and weaving of Personal Protective Equipments (PPE) as technical textile productions from experimental studies have also been mentioned, too. General conclusions have been inferenced from all experimental results.

**Keywords :** Personal Protective Equipments (PPE), Technical textiles and their using fibers, Smart textiles and their treatments, Thermal comfort performances, Applications, Test standarts

## A STUDY ON THE AVIATION SAFETY MANAGEMENT TRAINING NEEDS OF STATES: ANALYSIS OF AVAILABLE ICAO RESOURCES

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### ABSTRACT

International Civil Aviation Organization (ICAO) Annex 19 on Aviation Safety Management mandates both States and aviation service providers to train their personnel. In order for employees to successfully implement safety management, they need to be provided with the appropriate information to develop and demonstrate the required competencies. Thus, each organization must establish competency standards for its personnel. Training to meet these competency standards directly impacts the performance of individuals in the aviation workforce. Currently, ICAO provides various means of resources for safety management training and education including e-learning tools, face-to-face training courses, and safety promotion materials to support States in addressing the needs of their aviation community. In order to make the most effective use of these resources, it is important to first understand the training needs of the different target audiences, then derive their learning objectives, and select the most appropriate methods for each target audience to achieve these objectives. Accordingly, this study describes an approach for the aviation safety management training needs of States mainly focusing on the analysis of the available training, education, and safety promotion resources provided by ICAO to assist States in State Safety Programme (SSP) implementation.

**Keywords:** Aviation Safety Management, Safety Management Training, Safety Promotion, SSP, ICAO.

## THE ADDED RESISTANCE CALCULATIONS OF A SHIP IN REGULAR HEAD WAVES

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### ABSTRACT

Calculating the added resistance caused by external factors is critical for estimating changes in the ship's service speed. While the ship's velocity will decrease due to the added resistance, the ship's transportation time and fuel consumption will increase. Within the scope of this study, it is investigated how the added resistance changes depending on the ship's speed and wavelengths. All simulations are performed under the assumption that the ship will encounter the regular head waves ( $\theta=180^\circ$ ). The empirical formulas proposed in the literature were used in the simulations. These empirical formulas are added to the maneuvering model called Abkowitz model. In the first stage, the mathematical model is used to obtain dimensionless added resistance coefficients that vary with wavelength for a given Froude number ( $F_n=0.26$ ). These dimensionless coefficient values are validated with the results obtained for the same Froude number in other studies. In the second stage, simulations for various Froude numbers are performed, and added resistance coefficients in the direction of the ship's surge motion due to waves are obtained. The wavelengths are chosen between  $0.5 L_{pp}$  and  $2.0 L_{pp}$  in these simulations for different Froude numbers, and dimensionless added resistance coefficients are obtained for each wavelength. As a result, the dimensionless added resistance coefficients obtained for various ship velocities are evaluated in terms of the wavelengths.

**Keywords:** Added resistance, Froude number, Regular head waves, Wavelengths

## SHORT-TERM METEOROLOGICAL DROUGHT FORECASTING USING HYBRID DATA-DRIVEN TECHNIQUES

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### ABSTRACT

Droughts are significant natural hazards with devastating consequences for both the environment and human well-being. In this sense, proactive approaches, such as identification of the future drought events is of utmost importance in terms of effective drought management. Although extensive research has been carried out on the prediction other indices, limited efforts have been devoted to model SPEI based on the utilization of machine learning (ML) algorithms in the pertinent literature. Therefore, this research seeks to conduct time series forecasting of meteorological droughts by means of two machine learning algorithms, i.e., k nearest neighbor (kNN) and random forest (RF). To explore the drought variability in Samsun, the standardized precipitation evapotranspiration index (SPEI) values were used and the projections were made for short term horizon (namely, 1-month ahead). The SPEI time series were decomposed its sub-bands using state-of-the-art variational mode decomposition (VMD) algorithm. The predictive power of the proposed framework was benchmarked with several performance indicators, including widely considered Nash-Sutcliffe Efficiency indicator (NSE) and coefficient of determination ( $R^2$ ). The results showed that the RF model combined with the VMD technique (VMD-RF) outperformed its counterpart (i.e., kNN-VMD). In this regard, the NSE and  $R^2$  values for the VMD-RF were obtained as 0.962 and 0.966, respectively, whereas the corresponding indices were found as 0.781 and 0.937 for the integrated kNN-VMD model. The results are expected to assist in decision-makers in the region to mitigate the severity and frequency of droughts, affecting not only water availability but also several agricultural and energy production activities.

**Keywords:** drought forecasting, hydrology, machine learning, random forest, standard precipitation evaporation index, variational mode decomposition

## ELECTRO-OPTICAL PERFORMANCE OF COPPER NANOPARTICLES DECORATED CARBON BLACK-SILICON SCHOTTKY JUNCTION

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### ABSTRACT

In this study, carbon black (CB) supported copper nanoparticles (Cu NPs) were synthesized via the microwave irradiation technique to be used as interfacial material in the Schottky junction structure. The synthesized nanomaterial was analyzed using some basic techniques such as ICP-MS, SEM with EDS, XRD, and TEM. Subsequently, spin coating method was used to create Cu-CB/n-Si device structure. The electrical and photoelectrical properties of the fabricated device were investigated using the I-V measurements obtained under different operating conditions. The obtained results showed that the Cu-CB/n-Si Schottky junction has the potential for use in electro-optical device applications.

**Anahtar Kelimeler:** Microwave irradiation technique, I-V measurement, composite nanomaterials



## İĞDE (*ELAEAGNUS ANGUSTIFOLIA*) MEYVESİNDEN GÜMÜŞ NANOPARTİKÜLLERİN SENTEZİ, KAREKTERİZASYONU VE ANTİMİKROBİYAL AKTİVİTELERİNİN DEĞERLENDİRİLMESİ

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### ÖZET

Gümüş nanopartiküller (AgNP'ler), biyolojik kaynaklı sentezi eşsiz uygulama alanından dolayı araştırmacılar tarafından büyük ilgi uyandırmıştır. Bu çalışmada AgNP'lerin sentezi için gümüş nitrat ve indirgeyici ajan olarak İğde meyvesi kullanılarak yeşil sentezi gerçekleştirildi. Elde edilen biyolojik kaynaklı AgNP'lerin karakterizasyonu ve nanoyapıların aydınlatılması için; UV-Vis spektroskopisi, X-ışını kırınımı (XRD), Fourier Dönüşümü Kızılötesi Spektroskopisi (FTIR) kullanılarak, dinamik ışık saçılımı (DLS) ve taramalı elektron mikroskobu (SEM), Geçirimli elektron mikroskobu(TEM), Termal gravimetrik analiz(TGA), Elektron dağılımlı Xışınları(EDX) ile analizleri gerçekleştirildi. Antimikrobiyal aktiviteleri minimum inhibisyon konsantrasyon (MİK)yöntemi ile belirlendi. Sonuç olarak İğde meyvesi kullanılarak elde edilen nanopartiküllerin antibiyotiklere güçlü aktivite gösterdiği belirlendi.

**Anahtar Kelimeler:** AgNP'ler, İğde meyvesi, MİK, SEM,EDX, TEM.

### Synthesis, Characterization and Evaluation of Antimicrobial Activities of Silver Nanoparticles from Seagull (*Elaeagnus angustifolia*) Fruit

### ABSTRACT

Silver nanoparticles (AgNPs) have aroused great interest by researchers due to their unique application field of synthesis from biological origin. In this study, green synthesis was carried out by using silver nitrate for the synthesis of AgNPs and buckthorn berry as reducing agent. For the characterization of the obtained biologically sourced AgNPs and the elucidation of nanostructures; Using UV-Vis spectroscopy, X-ray diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), Dynamic light scattering (DLS) and scanning electron microscopy (SEM), Transmission electron microscope (TEM), Thermal gravimetric analysis (TGA), Electron dispersed X-rays (EDX) were analyzed. Antimicrobial activities were

determined by the minimum inhibition concentration (MIC) method. As a result, it was determined that the nanoparticles obtained by using sedum fruit showed strong activity against antibiotics.

**Keywords:** AgNPs, *Elaeagnus angustifolia*, MIC, SEM,EDX, TEM.



## YEŞİL SENTEZ İLE SELENYUM NANOPARTİKÜLLERİN SENTEZİ VE BİYOLOJİK UYGULAMALAR ÜZERİNDEKİ ETKİLERİNİN ARAŞTIRILMASI

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Selenyum (Se) insan sağlığı için gerekli eser elementlerden biridir. Bu çalışmada, Diyarbakır Hani Yeşil Seren Köyünde yetişen Domates (*Solanum lycopersicum*) bitkisinin yeşil yaprakları kullanılarak selenyum nanopartikülleri(SeNPs) sentezlendi. Yeşil sentez ile elde edilen SeNP'lerin parçacık boyutu, morfolojisi, FT-IR, kararlılığı, termal dayanıklılığı ve biyolojik uygulamalardaki özellikleri karakterize edildi. Sonuç olarak SeNP'lerin 20-70 nm çapında ve küresel boyutta Olduğu Geçirimli Elektron Mikroskobu Ve Taramalı Elektron Mikroskobu İle Belirlendi. Sentezlenen Selenyum nanopartiküllerin antimikrobiyal aktivitesi minimum inhibisyon tekniği ile belirlendi. sitotoksik aktiviteleri ise MTT metoduyla Kolon(CaCo2) ve akciğer kanseri(A-549) üzerindeki yüzde canlılıkları hesaplandı. Sonuç olarak elde edilen biyolojik kaynaklı nanopartiküllerin güçlü bir antimikrobiyal aktivite gösterdiği, sitotoksik aktivitesinin ise % 40-60 oranında baskılayıcı özellik gösterdiği görüldü.

**Anahtar kelimeler:** SeNP'ler, yeşil sentez, Sitotoksisite.

## SYNTHESIS OF GREEN SYNTHESIS AND SELENIUM NANOPARTICLES AND INVESTIGATION OF THE EFFECTS ON BIOLOGICAL APPLICATIONS

Selenium (Se) is one of the trace elements necessary for human health. In this study, selenium nanoparticles (SeNPs) were synthesized using the green leaves of Tomato (*Solanum lycopersicum*) plant grown in Diyarbakır Hani Yeşil Seren Village. Particle size, morphology, FT-IR, stability, thermal stability and biological applications of SeNPs obtained by green synthesis were characterized. As a result, 20-70 nm diameter and spherical size of SeNPs were determined by Transmissive Electron Microscopy and Scanning Electron Microscopy.

Antimicrobial activity of synthesized Selenium nanoparticles was determined by minimum inhibition technique. their cytotoxic activities were calculated by MTT method, and their percent viability on Colon (CaCo2) and lung cancer (A-549) was calculated. As a result, it was observed that the obtained biologically sourced nanoparticles showed a strong antimicrobial activity, while their cytotoxic activity showed a suppressive feature at the rate of 40-60%.

**Keywords:** SeNPs, Green synthesis, Cytotoxicity.



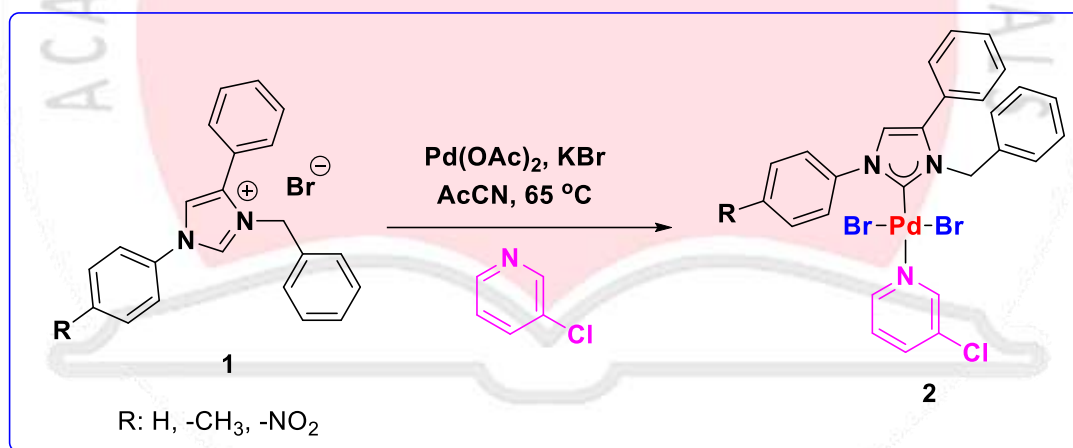
## SYNTHESIS OF NEW [Pd(NHC)(3-CL-PY)BR<sub>2</sub>] COMPLEXES AND COMPARISON OF THEIR CATALYTIC ACTIVITIES WITH [Pd(NHC)(PY) BR<sub>2</sub>] COMPLEXES

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### ABSTRACT

NHC-Pd complexes have important catalytic activities in reactions such as cross-coupling and C-H activation, which are of great importance in organic chemistry. Among these complexes, especially the pyridine-linked NHC-Pd complexes have gained a special importance in recent years because they contain pyridine ligand, which acts as a throw-away ligand in the catalytic cycle during reactions. In this study, the reaction of imidazolium salts **1** with Pd(OAc)<sub>2</sub> in the presence of KBr and pyridine in acetonitrile gave a new series of air and moisture-stable [Pd(NHC)(3-Cl-py)Br<sub>2</sub>] **2** complexes in high yields (75-83%). The new complexes bearing an NHC ligand, and 3-Cl-pyridine ligand around the palladium centre were characterized by means of <sup>1</sup>H NMR, <sup>13</sup>C NMR, FT-IR spectroscopy and HRMS analysis. Catalytic activities of newly prepared complexes were compared with the corresponding pyridine containing ones in some coupling reactions.

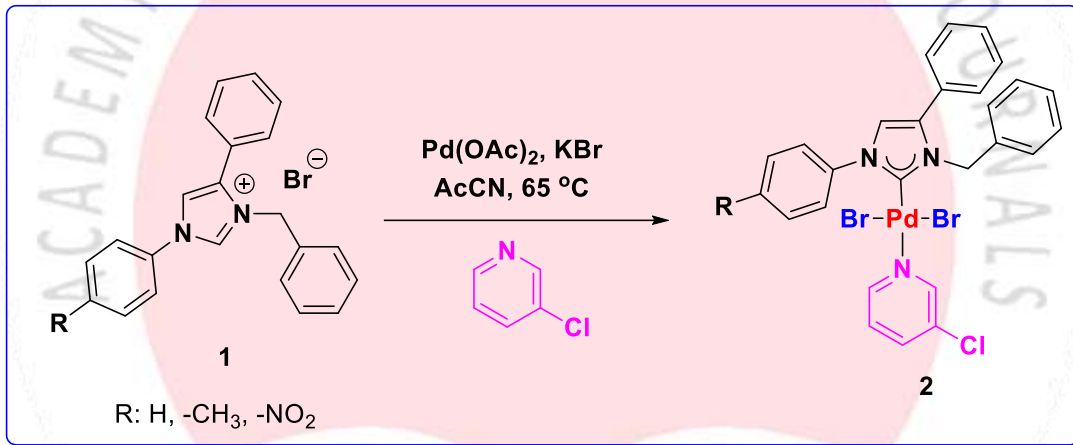


**Key words:** N-Heterocyclic carbene, N-Heterocyclic carbene-Pd-PEPPSI complexes, coupling reactions

## YENİ [Pd(NHC)(3-Cl-py)Br<sub>2</sub>] KOMPLEKSLERİNİN SENTEZİ VE KATALİTİK AKTİVİTELERİNİN [Pd(NHC)(py) Br<sub>2</sub>] KOMPLEKSLERİ İLE KARŞILAŞTIRILMASI

### ÖZET

NHC-Pd komplekslerinin organik kimyada oldukça büyük öneme sahip çapraz kenetlenme ve C-H aktivasyonu gibi reaksiyonlarda önemli katalitik aktivitelere sahip oldukları bilinmektedir. Bu kompleksler arasından özellikle piridin bağlı NHC-Pd kompleksleri, reaksiyonlar esnasında katalitik döngüde kolayca ayrılabilir bir ligand olan piridin ligandını içerdikleri için son yıllarda ayrı bir önem kazanmışlardır. Bu çalışmada, imidazolyum tuzlarının **1** Pd(OAc)<sub>2</sub> ile 3-kloropiridin ve KBr varlığında asetonitril içerisindeki reaksiyonları sonucu yüksek verimlerle (75-83%) havadan ve nemden etkilenmeyen, kararlı yeni bir seri [Pd(NHC)(3-Cl-py)Br<sub>2</sub>] **2** kompleksleri sentezlenmiştir. Paladyum merkezi etrafında, bir NHC ligandı ve 3-kloropiridin ligandı içeren yeni kompleksler, <sup>1</sup>H NMR, <sup>13</sup>C NMR, FT-IR spektroskopisi ve HRMS analizleri ile karakterize edilmiştir. 3-kloropiridin taşıyan yeni komplekslerin katalitik aktiviteleri daha önce laboratuvarımızda sentezlenmiş olan piridin taşıyan örneklerin katalitik aktiviteleriyle bazı kenetlenme reaksiyonlarında karşılaştırılmıştır.



**Anahtar Kelimeler :** N-Heterosiklik karben, N-Heterosiklik karben-Pd-PEPPSI kompleksleri, kenetlenme reaksiyonları

## A SYSTEMATIC NUMERICAL INVESTIGATION FOR A MECHANISM TO IMPROVE THE COMFORT OF SHIPS

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### ABSTRACT

The appendages such as interceptors, foils, flaps, etc. can be used to improve the hydrodynamic performance of the ships not only in calm water but also in waves. These type of mechanisms improves the comfort and efficiency of the ships by reducing the translational and rotational motions, velocities, and accelerations. When the ship reaches a certain forward speed, these mechanisms create forces and moments to reduce unwanted motions and accelerations. However, a ship can be forced into unwanted translational or rotational motions by external disturbances when it doesn't have forward speed, especially in ports. Therefore, in the present study, a numerical investigation is carried out for a concept mechanism to reduce the static or dynamic motions of ships in ports. To reach this aim, the computational fluid dynamics approach is applied to a foil mechanism. The effects of the angle of attack, the period, the motion amplitude and the forward speed are investigated systematically. It is found that the lower motion period, higher motion amplitude and higher speed cause higher lift force and thus this mechanism can be used as an appendage on the underwater hull to decrease unwanted motions, especially in ports.

**Keywords:** CFD, comfort, foils

## PROPOSAL FOR A TWO-STAGE EARLY UNIVERSE MODEL

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### Abstract

The inflationary stage of the universe is discussed in the Gauss-Bonnet theory of gravity. In the range of observation data, it has been determined that the universe has a two-stage structure. It has been observed that this case is in agreement with the proposition of the superinflation mechanism including the three-stage phases. On the other hand, some power-law type potentials,  $\sim \phi^m$  is considered, and the range of the power-term  $m$  is obtained. It is observed that the range obtained for  $m$  coincides with some forms of potential proposed in string theory.

Keywords: Gauss-Bonnet gravity, Superinflation, string cosmology

### İki aşamalı bir erken evren modeli önerisi

### Özet

Evrenin şişme aşaması, yerçekiminin Gauss-Bonnet kütle çekim teorisinde tartışılmıştır. Gözlem verileri aralığında evrenin iki aşamalı bir yapıya sahip olduğu tespit edilmiştir. Bu durumun üç aşamalı fazları içeren süperenflasyon mekanizması önermesiyle uyum içinde olduğu görülmüştür. Öte yandan, bazı güç kanunu tipi potansiyeller,  $\sim \phi^m$  dikkate alınarak,  $m$  güç teriminin aralığı elde edilmiştir. Üstel terim  $m$  için elde edilen aralığın, sicim teorisinde önerilen bazı potansiyel biçimleriyle örtüştüğü gözlemlenmiştir.

Anahtar Kelimeler: Gauss-Bonnet Kütle Çekimi, Süper şişme, Sicim Kozmoloji



## THE HIGH ENERGY ERA DYNAMICS OF THE UNIVERSE

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### Abstract

In this study, the high energy field of the universe is examined in the context of modified  $f(R)$  gravity theory. Using the field equations, it has been shown that a quintessence type high energy fluid is created from a vacuum energy. This case has been also examined within the framework of observational data. We have shown that the evolution of the inflationary universe begins with a vacuum state and can then continue with a quintessence-type dark energy. This approach can take advantage of the high energy dynamics of the universe when compared to single-phase inflationary models.

**Keywords:** High Enerji, quintessence fluid,  $f(R)$  gravity.

## EVRENİN YÜKSEK ENERJİ ÇAĞI DİNAMİKLERİ

### ÖZET

Bu çalışmada, evrenin yüksek enerji alanı modifiye edilmiş  $f(R)$  kütle çekim teorisi bağlamında incelenmiştir. Alan denklemleri kullanılarak quintessence tipi yüksek enerjiye sahip bir akışkanın bir vakum enerjisinden yaratıldığı gösterilmiştir. Bu durum ayrıca gözlemsel bilgiler çerçevesinde incelenmiştir. Şişme evrenin evriminin bir vakum durumuyla başladığını ve daha sonra öz tipi bir karanlık enerjiyle devam edebileceğini gösterdik. Bu yaklaşımın, tek fazlı enflasyonist modellerle kıyaslandığında evrenin yüksek enerji dinamiklerini avantajlı bir duruma getirebilir.

**Anahtar Kelimeler:** Yüksek Enerji, Özsel Akışkan,  $f(R)$  Kütle Çekim.

## GÖZLEMLEME AMAÇLI TASARLANAN SABİT KANATLI İNSANSIZ HAVA ARACI UYGULAMASI

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### ÖZET

Günümüzde insansız hava araçlarının (İHA) düşük maliyetli ve üretiminin kolay olması nedenleriyle kullanımları hem askeri hem de sivil uygulamalarda artmıştır. Özellikle gözlem amacıyla kullanılan İHA'lar helikopter veya insanlı uçaklar gibi araçlara gerek olmaksızın görevlerini daha ucuza ve kolay biçimde tamamlayabilmektedirler. Bu çalışmanın amacı, afet durumlarında arama kurtarma ekibinin saha hakkında geleneksel yöntemlere kıyasla daha güncel, verimli ve düşük maliyetli mini İHA sistemi ile bilgi alabilmesini sağlamaktır. Mini İHA sistemi manevra, itki, elektriksel güç, iletişim ve görüntüleme sistemleri olarak beş alt bölümden oluşturulmuştur. İtki sistemi için 3 kg itki verebilen fırçasız motor ve yeterli akımı karşılayabilecek elektronik hız kontrolcüsü kullanılmıştır. Manevra sisteminde yuvarlanma dümeni, yön dümeni ve irtifa dümeni kontrolleri için dört tane servo motor tercih edilmiştir. Elektriksel güç sistemi için Lityum-Polimer batarya ile enerji sağlanmış ve mikrodenetleyiciler ile kontrol işlemleri gerçekleştirilmiştir. İletişim sistemi için tercih edilen radyo kontrol kumandasının alıcısı, küresel konumlama sistemi modülü ve telemetri modülü kullanılmıştır. Görüntüleme sistemi için kendi Wi-Fi kartı olan ESP32 MCU ve OV2640 kamera modülüne yer verilmiştir. Mini İHA, çevreden aldığı görüntüleri şifreli bir web sitesi üzerinden canlı yayın akışı ile kullanıcıya yansıtılmış ve sadece yetkisi olan kişiler yayını izleyebilmiştir.

**Anahtar Kelimeler:** İHA, Wi-Fi, görüntüleme, internet, MCU, ESP32.

## ATIK ISININ GERİ ÇEVİRİMİNDE TERMOELEKTRİK JENERATÖRLERİN KULLANILMASI İÇİN EĞİTİM SETİ UYGULAMASI

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### ÖZET

Atık ısının geri kazanılması enerji verimliliği açısından oldukça önemlidir. Günümüzde enerji krizlerinin yaşanması bunun önemini daha fazla artırmıştır. Bu çalışmada atık ısının geri kazanılması için kullanılabilen termoelektrik jeneratörler (TEG) için bir eğitim seti uygulaması gerçekleştirilmiştir. Bu sette bir tarafında sıcak su bulunan bir su haznesi diğer tarafında da soğuk su bulunan başka bir su haznesi kullanılmıştır. Bu deney düzeneğinde suyun dolaşımı için iki tane doğru akım (DC) motoru kullanılarak sıcak ve soğuk suyun sistem içerisinde dolaşımı sağlanmıştır. Akış hızının enerji üretimindeki etkisini göstermek için DC motorların hız ayarları bir tane gerilim düzenleyici ile gerçekleştirilmiştir. Sistemde üç tane TEG kullanılarak bunların sıcak ve soğuk yüzeyleri iki tane sıcak ve soğuk suların geçtiği alüminyum plakalar ile sağlanmıştır. Sıcak ve soğuk yüzey sıcaklıklarının ölçümünde iki tane K tipi termokupl kullanılmıştır. Sistemde yaklaşık 37°C sıcaklık farkı elde edilmiş ve en yüksek güç yaklaşık 0,32 W olmuştur. Böylece, sıcaklık farkı olan bir atık ısı sisteminde bu atık ısının belirli bir kısmının elektrik enerjisi olarak geri kazanılabileceği gösterilmiştir.

**Anahtar Kelimeler:** TEG, sıcaklık farkı, sıcaklık geçişi, atık ısı.

## NASA POWER SİSTEMİNDE SUNULAN UZAKTAN ALGILAMA VERİLERİ KULLANILARAK REFERANS EVAPOTRANSPIRASYON TAHMİNİ

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### ÖZET

Evapotranspirasyon (ET), bitkilerden terleme ve stoma dışı yüzeylerden buharlaşmanın birleşimi olarak tanımlanır. ET, tarımsal planlama ve hidrolojik süreçlerin modellenmesi dahil olmak üzere su kaynaklarının yönetiminde çok önemli bir rol oynar. ET'yi belirlemek için kullanılan lizimetre, Eddy kovaryans ve Bowen oranı enerji dengesi yöntemleri gibi birçok ölçüm tekniği vardır. Ancak bu teknikler sahaya özeldir, pahalıdır ve sürekli kalibrasyon gerektirir. Son yıllarda, ideal koşullar altında ne kadar ET oluşabileceğini tahmin etmek amacıyla, bir referans mahsulün ET'si olan referans ET'yi (ET<sub>o</sub>) tahmin etmek için çeşitli modeller geliştirilmiştir. FAO-56-Penman-Monteith yöntemi, bu yöntemlerin en yaygın kullanılanıdır. Bu yöntem ET<sub>o</sub> değerlerini hesaplamak için sıcaklık, radyasyon, rüzgâr hızı, nem ve güneşlenme süresi gibi parametreleri kullanmaktadır. Bu parametrelerin her bölgede temin edilmesi oldukça zor ve masraflıdır. Bu çalışmada, ET<sub>o</sub> değerlerini tahmin etmek için FAO-56-Penman-Monteith denkleminde NASA Power sistemi üzerinden sunulan uzaktan algılama verileri kullanılmıştır. Türkiye'nin farklı bölgeleri için ET<sub>o</sub> değerleri hem yer gözlem istasyonu verileri kullanılarak hesaplanmış hem de uzaktan algılama sistemlerinden elde edilen veriler kullanılarak hesaplanmıştır. İki farklı kaynaktan gelen girdiler ile oluşturulan modeller istatistiksel olarak karşılaştırılmıştır. Yapılan incelemeler sonucunda Van, İzmir, Kayseri, Antalya ve Samsun istasyonları için uzaktan algılama verileri ile oluşturulan model sonuçları ile yer ölçümleri ile oluşturulan model sonuçları arasında sırası ile 0.792, 0.947, 0.968, 0.986 ve 0.915 korelasyon katsayısı (R) değeri elde edilmiştir. Modellere ait saçılma grafikleri incelendiğinde uzaktan algılama verileri ile bazı bölgelerde yüksek tahminler yapıldığı tespit edilmiştir. Çalışma neticesinde, yer gözlem istasyonu olmayan bölgelerde uzaktan algılama verilerinin kalibre edilerek kullanılabilmesi sonucuna varılmıştır.

**Anahtar Kelimeler:** NASA Power, uzaktan algılama, referans evapotranspirasyon, FAO-56-Penman-Monteith

## NASA POWER SİSTEMİNDE SUNULAN UZAKTAN ALGILAMA VERİLERİNİN YER GÖZLEM VERİLERİ İLE UYUMUNUN İNCELENMESİ

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### ÖZET

Hidrolojik veya meteorolojik doğa olaylarının kayıt altına alınması ve gerektiğinde bilimsel çalışmalar için kullanılması büyük önem arz etmektedir. Geleneksel ölçüm yöntemleri yer yüzünde kurulan gözlem istasyonları ile yapılmaktadır ve ölçüm aletleri sürekli kalibrasyona ihtiyaç duymaktadır. Ölçüm kayıtlarının eksiksiz ve yüksek doğrulukta olması için gerek devlet kurumları gerekse özel teşebbüsler büyük bütçeler ayırmaktadır. Günümüzde uzaktan algılama teknolojilerinde gerçekleşen gelişmeler doğrultusunda hidrolojik ve meteorolojik fenomenlerin tespiti daha kolay ve ucuz şekilde gerçekleştirilebilmektedir. Bu çalışmada, farklı uzaktan algılama sistemindeki verileri derleyen ve tek bir çatı altında hizmet sunan NASA Power uygulamasından elde edilen parametreler ile yer gözlem istasyonlarından elde edilen verilerin uyumları incelenmiştir. Uzaktan algılama sistemlerinden elde edilen solar radyasyon, sıcaklık, nispi nem ve rüzgâr hızı değerleri, Türkiye'nin farklı enlem ve boylamlarında bulunan toplam 9 adet yer gözlem istasyonlarındaki verilerin aynı gün ölçülmüş değerleri ile karşılaştırılmıştır. Uyum iyiliği hesapları doğrultusunda tüm istasyonlar için ortalama olarak solar radyasyon için korelasyon katsayısı (R) değeri 0.933, sıcaklık için 0.981, nispi nem için 0.715 ve rüzgâr hızı için 0.56 olarak belirlenmiştir. Uzaktan algılama verileri incelendiğinde solar radyasyon ve sıcaklık değerlerin bazı bölgelerde olması gerekenden yüksek çıktığı göze çarpmaktadır. Bu duruma bulut etkisinin neden olabileceği düşünülmektedir. Yapılan istatistiki incelemeler sonucunda, solar radyasyon, sıcaklık ve nispi nem değerlerinin istasyon verileri ile uyumlu olduğu, rüzgâr hızı verilerinin ise çok kullanışlı olmadığı sonucuna varılmıştır. Hidrolojik veya meteorolojik modellemelerde NASA Power verilerinin kullanımı ile güvenilir sonuçlar elde edilebilecektir. Bu çalışma neticesinde, ilerleyen yıllarda daha yüksek çözünürlüklü uzaktan algılama verilerinin hizmete sunulması ile masraflı yer gözlem verilerine ihtiyacın giderek azalması öngörülmektedir.

**Anahtar Kelimeler:** NASA Power, uzaktan algılama, solar radyasyon, sıcaklık, nem, rüzgâr hızı

## REKREASYON İÇİN COĞRAFI BİLGİ SİSTEMLERİ YAZILIMI KULLANIMININ ÖNEMİ

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### ÖZET

Rekreasyon, insanların yaşam kalitesinin artırılmasına yardımcı olmak için fiziksel, sosyal ve zihinsel sağlığı iyileştiren açık ve kapalı alanda yapılacak olan çalışmaların tümünü kapsamaktadır. Rekreasyon sayesinde her kesimden bireylerin gerçekleştirebileceği etkinliklerin nasıl tasarlanıp, planlanacağı ve sunulması gerektiği öğrenilir. Gelişen teknoloji ile birlikte rekreasyon çalışmalarında teknolojik yazılım imkanlarından faydalanılması gerekliliği günden güne artmaktadır. Çünkü mevcutta yapılacak olan çalışmalar ve araştırmaların belirgin ve net bir şekilde sunulması artık yazılımlar ile çok kolaydır. Özellikle Coğrafi Bilgi Sistemleri (CBS), rekreasyon alanında çalışmalar ve planlamalar yapan bireylerin sunum ve çalışma kapsamındaki ihtiyaçlarını kolaylıkla karşılamakta ve yeryüzü üzerindeki verilerin bilgisayarlarda kolayca depolanmasını, işlenmesini ve analiz edilip kullanıcıya sunulmasını sağlamaktadır. Bir CBS yazılımı olan ArcGIS bu alanda kullanılabilecek basit bir yazılımdır. Örneğin verilerin olması durumunda; bir ildeki sporcu sayılarının mahallelere göre dağılımı, sporcu sayılarına göre hangi mahallelerde kaç tane sporcu var ve bu sporcu sayılarına göre mahallelerin renklendirilmesi ya da bir bölgenin eğim, bakı ve yükseklik analizleri gibi birçok farklı varyasyonlarda kullanıcıya imkanlar sunmaktadır. Günümüzde harita, şehir ve bölge planlama, orman mühendisliği, peyzaj mimarlığı, uzay bilimleri, coğrafya bölümü gibi birçok alanlarda yaygın olan ArcGIS yazılımından rekreasyon bölümü alanı neredeyse hiç faydalanmamaktadır. Yapılan literatür taramasında yurt dışında spor bilimleri ve rekreasyon bölümü çalışmalarının birçoğunda CBS tabanlı yazılımlar kullanmasına rağmen, Türkiye’de ArcGIS yazılımı rekreasyon alanında neredeyse hiç kullanılmamaktadır. Genelleme yapıldığında ise yurt dışında en çok kullanılan CBS yazılımı ArcGIS yazılımıdır. Hem zaman hem sunum açısından alana önemli bir katkı sunacak olan ArcGIS yazılımının ülkemizde de rekreasyon alanında yaygınlaştırılarak kullanılması alana önemli katkılar sunacaktır.

**Anahtar Kelimeler:** Rekreasyon, CBS, Coğrafi Bilgi Sistemleri, ArcGIS

## SİMETRİK VE SİMETRİK OLMAYAN DAĞILIMLAR ALTINDA SIRALI KÜME ÖRNEKLEMESİ VE DOUBLE SIRALI KÜME ÖRNEKLEMESİNE DAYALI PARAMETRE TAHMİNİ

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### Özet

Sıralı küme örnekleme yöntemi örnekleme birimlerini ölçmenin emek, zaman ya da maliyet bakımından zor olduğu fakat aynı birimleri görsel yolla ya da daha ucuz yöntemlerle sıralamanın kolay olduğu durumlarda kullanılan, basit tesadüfi örneklemeyle alternatif olarak geliştirilmiş bir yöntemdir. Sıralı küme örneklemesinde daha etkin tahmin ediciler elde etmek amacıyla farklı modifikasyonlar geliştirilmiştir. Double sıralı küme örnekleme de bu modifikasyonlardan biridir.

Son yıllarda sıralı küme örnekleme ve modifikasyonlarının parametre tahmini çalışmalarında kullanımı oldukça yaygındır. Sıralı küme örnekleme ve bu yöntemin modifikasyonları altında özellikle en çok olabilirlik yöntemi, momentler yöntemi ve bayes yöntemi ile elde edilen tahmin edicilerin çeşitli özellikleri incelenmiştir.

Bu çalışmada sıralı küme örnekleme ve double sıralı küme örnekleme kullanılarak bilinen simetrik ve asimetrik dağılımlar altında yığın parametrelerinin en çok olabilirlik tahmin edicileri elde edilmiştir. Monte Carlo simülasyon yöntemiyle elde edilen tahmin edicilerin yan değerleri ve hata kareler ortalamaları karşılaştırılmıştır. Simülasyon sonuçları incelendiğinde, simetrik dağılımlarda (Normal, Gumbel) küçük örnek çaplarında DRSS, örnek çapı arttıkça RSS yönteminin daha düşük hata kare ortalama değerlerine sahip olduğu görülmektedir. Asimetrik dağılımlara (Beta, Gamma) bakıldığında ise hem yan hem de hata kare ortalaması açısından DRSS yönteminin RSS ve SRS yöntemlerine göre daha düşük sonuçlar verdiği görülmüştür.

**Anahtar Kelimeler** :Sıralı küme örnekleme, Double sıralı küme örnekleme, En çok olabilirlik tahmini, Monte Carlo simülasyonu.

## SIRALI KÜME ÖRNEKLEMESİ VE MIXED DOUBLE SIRALI KÜME ÖRNEKLEMESİNE DAYALI PARAMETRE TAHMİNİNİN BAZI SİMETRİK VE SİMETRİK OLMAYAN DAĞILIMLAR ALTINDA İNCELENMESİ

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### ÖZET

Sıralı küme örnekleme (SKÖ), örnekleme birimlerini ölçmenin zor, ancak bu birimleri sıralamanın daha kolay olduğu durumda tercih edilen maliyet etkin bir örnekleme tekniğidir. SKÖ son yıllarda, çevre, ekoloji ve tarım gibi alanlarda sıkça kullanılmaktadır. Sıralı küme örneklemesinde daha etkin tahmin ediciler elde etmek amacıyla farklı modifikasyonlar geliştirilmiştir.

Mixed double sıralı küme örnekleme; sıralı küme örneklemesinin farklı bir modifikasyonu olan medyan sıralı küme örnekleme ile kombine edilmiş halidir.

Sıralı küme örnekleme ve sıralı küme örneklemesinin çeşitli modifikasyonlarının parametre tahmini çalışmalarında kullanımı oldukça yaygındır. Özellikle en çok olabilirlik yöntemine dayalı olarak elde edilen tahmin edicilerin yan ve göreceli etkinlik değerlerine dayalı çalışmalar literatürde sıkça yer almaktadır.

Bu çalışmada sıralı küme örnekleme ve mixed double sıralı küme örnekleme yöntemi kullanılarak bilinen simetrik ve asimetrik dağılımlar altında yığın parametrelerinin en çok olabilirlik tahmin edicileri elde edilmiştir. Yapılan simülasyon çalışması ile tahmin edicilere ilişkin yan değerleri ve hata kareler ortalamaları karşılaştırılmıştır. Sonuç olarak, Normal dağılım için MDRSS yöntemi RSS ve SRS yöntemlerine göre daha düşük yan değerlerine sahip iken, diğer dağılımlarda ise RSS yöntemi daha düşük yan ve hata kare ortalaması değerlerine sahiptir.

**Anahtar Kelimeler :** Sıralı küme örnekleme, Mixed double sıralı küme örnekleme, En çok olabilirlik tahmini, Monte Carlo simülasyonu.



## ATIK ISI GERİ KAZANIMININ KURUTMA VERİMİNE ETKİSİNİN BELİRLENMESİ

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### ÖZET

Araştırmacılar, konvansiyonel kurutma sistemlerinin yoğun miktarda enerji harcayan ve dolayısıyla yüksek miktarda karbon salımına neden olan prosesler olduğu konusunda hem fikirdir. Bu nedenle bu konuda birçok çalışma, kurutucu sistemi ve ekipmanlarının enerji verimliliği açısından daha iyi nasıl işletilebileceğine odaklanmaktadır. Bu çalışmada, döküm sektöründe maça üretiminde kullanılan kumun kurutulması için kullanılan akışkan yatak bir endüstriyel kurutucunun analizi yapılarak atık ısı geri kazanımının kurutma verimine dolayısıyla enerji tüketimine etkisi araştırılmıştır. Atık ısı geri kazanımı için mevcut yapı detaylıca analiz edilerek enerji tüketim kaynakları belirlenmiş ve tüketim miktarları ölçülerek kurutucunun özgül enerji tüketimi 2.42 kWh/kg su olarak hesaplanmıştır. Yapılan analiz ve hesaplamalar neticesinde, akışkan yatak kurutucu için enerji tüketimini azaltacak yeni bir atık ısı geri kazanım sistemi yapıları oluşturulmuş ve bu yapı ile özgül enerji tüketimi teorik olarak 1.40 kWh/kg su olarak hesaplanmıştır. Mevcut kurutucunun kurutma verimi %26.8'dir. Atık ısı geri kazanım sistemi ile kurutma veriminin % 19.51 oranında artacağı, yakıt tüketiminin de % 45.1 oranında azalacağı ortaya konmuştur. Atık ısı geri kazanım sisteminin kullanılması ile yıllık 533.97 ton eş değer karbon salımına engel olacağı da hesaplanmıştır. Bu kapsamda atık ısı geri kazanımı ile kurutma veriminin yükseltilecek daha ekonomik, özellikle küresel ısınmanın etkilerinin azaltılmasına yönelik dolayısıyla sürdürülebilir bir teknolojinin etkileri belirlenmiştir.

**Anahtar Kelimeler:** Kurutma verimi, enerji verimliliği, atık ısı, kum kurutma, karbon salımı

## DETECTION OF TOXIC MUSHROOM BY MACHINE LEARNING

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### ABSTRACT

Fungi are a rich family of organisms. These creatures, which are neither in the category of animals nor plants biologically, consist of many species of various sizes, shapes and colors. When mushrooms are mentioned, edible species come to mind first. In addition to contributing to agriculture, medicine, textile and pharmaceutical industry, they are very popular in the food sector, and they provide many antioxidants and other nutrients that can contribute to human health and protect the body from cancer.

Mushrooms are widely found in nature at certain times, as well as produced by enterprises in environments with certain conditions. Consuming some toxic mushroom species collected from nature can cause serious poisoning and death. Only a few of the known species of mushrooms are suitable for human consumption. While a significant part of these mushrooms are produced for commercial purposes, some of them are obtained from nature by seasonal collectors. Although different poisoning symptoms can be seen depending on the type of mushrooms, amatoxin group mushrooms attract attention due to their high mortality rate. Knowing the type of fungus that causes poisoning and the clinical symptoms it causes and analyzing it well contributes to the creation of an appropriate treatment plan. Although mushroom picking is common in certain regions in our country, consumption of all kinds of wild mushrooms collected from nature is an important problem. Especially the foraging made by those who do not know mushrooms well causes this danger to grow even more. Therefore, the control of mushroom picking and trade and the production of new studies by the society on this subject can prevent mushroom-related poisoning and death.

In this study, it is aimed to use an artificial intelligence supported identification system to prevent mushroom poisoning. With the mushroom image dataset created, machine learning, which is the field of artificial intelligence, was trained. The reason why machine learning is preferred is that it has high definition and classification skills. With this study, it is possible to determine whether the fungi are harmful and their species. It is aimed that the trained machine learning model can be easily installed on mobile devices and become widespread, and artificial intelligence supported solution against poisonings occurring in this area.

**Keywords:** Fungi, Mushroom, Food health, Poisoning, Object recognition, Machine learning

## FAST DIAGNOSIS OF PARASITES WITH MACHINE LEARNING ASSISTED MICROSCOPE

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### ABSTRACT

Chagas disease is a parasitic disease, especially seen in Latin American countries. The disease is seen in people who are relatively poor and have low living conditions and is a disease that is ignored until its spread occurs. The disease can be transmitted by various insect agents, as well as during pregnancy, food, organ transplantation and from mother to child. The parasite is mostly found in the blood in the vein, but it can also pass to other organs during the progression of the disease. The progressive disease causes death with various organ failures and a decrease in the standard of living.

Unfortunately, this disease, which affects tens of thousands of people today, has tended to spread through international travels. Delayed detection of the disease can both complicate the treatment process and cause the spread of the disease. There is no definitive treatment method for this disease, which has not been given sufficient attention in time for its treatment. Only the measures taken in the early stages of the disease are successful. Therefore, early diagnosis of this disease is very important. Diagnosis of this insidious disease depends on detailed examination of blood samples. However, this examination is insufficient for tens of thousands of sick people today and for all of the potential sick people in the same numbers. Because the blood tests of many people will take a lot of time to examine, and the detection of a possible patient will be delayed, which may cause delay in treatment and progression of the disease. Rapid testing of the assay may cause a parasite in the blood to be missed, and a sick individual may be identified as healthy, which is a dangerous situation. For this reason, there is a need for autonomous, rapid and detailed examination of blood tests.

In this study, it is aimed to scan blood findings quickly and with high recognition success with a high resolution microscope camera using machine learning. The scanning method is provided with an algorithm that provides the calculation of the scanning path in such a way that the human factor is completely removed and the distribution geometry of the blood between the plates in the blood sample in the slide-lamella placed under the microscope is scanned the fastest. The shortest scanning paths obtained thanks to the traveling salesman algorithm allow the microscope camera to be hovered over the blood sample and rapid analysis of large amounts of blood. With the system proposed here, it is aimed to scan blood samples in detail and quickly, to detect the disease early and to prevent its spread.

**Keywords:** Chagas disease, Trypanosoma cruzi, Disease diagnosis, Machine learning, Object detection

## İŞBİRLİKÇİ OYUN TEORİSİNDEKİ BİR ÇÖZÜM KAVRAMI OLAN ALEXIA DEĞERİ ÜZERİNE

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### ÖZET

Bu çalışmada, iflas durumlarının çözümü için kullanılan işbirlikçi oyun teorisindeki çözüm kavramlarından biri olan Alexia değerinden bahsedilecektir. Alexia değeri, boş kümeden farklı çekirdeğin lexicographic maxima sını ortalar. Konveks oyunlarda Alexia değeri ile Shapley değeri eşleşir. İşbirlikçi oyun teorisinin en önemli çözüm kavramlarından biri olan Shapley değeri birçok yöneylem araştırma oyunlarında kullanılmıştır. İflas durumlarından oluşan iflas oyunları konveks oyunlardır ve bu oyunların çözümünde Shapley değeri ile Alexia değeri eşleşir.

**Anahtar Kelimeler :** Alexia değeri, Shapley değeri, İflas oyunları, Konveks oyunlar.

## İKLİM DEĞİŞİKLİĞİ BAĞLAMINDA KORUNAN ALANLARIN GELECEĞİ ÜZERİNE BİBLİYOMETRİK BİR DEĞERLENDİRME

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### ÖZET

Günümüzde korunan alanlar ve dolayısıyla biyoçeşitlilik iklim değişikliği ve antropojenik etkiler ile tehdit altındadır. Bu çalışmanın amacı, iklim değişikliği sürecinde korunan alanların sürdürülebilirliğinin sağlanması için bir yol haritası ortaya çıkarmaktır. Bibliyometrik analiz yöntemi kullanılarak, Web of Science Core Collection veri tabanında “climate change (iklim değişikliği)”, “protected areas (korunan alanlar)”, “biodiversity (biyoçeşitlilik)”, “land use change (arazi kullanım değişimi)” sözcükleri ile yapılan arama sonrasında 1991-2022 tarihleri arasında yayımlanan 674 makale üzerinden, konuya eleştirel bir çerçeve çizilmektedir.

İklim değişikliği bağlamında korunan alanların geleceğine ilişkin yapılan haritalamada, ‘mekânsal koruma ve planlama bağlamı’, ‘yönetimsel kavramlar, politikalar ve araçlar’, ‘koruma alan yönetimine ilişkin kestirim ve tür dağılımına ilişkin yöntem ve araçların kullanımı’ ile ‘arazi kullanım ve tür dağılımı ilişkisi’ olarak 4 ana başlık öne çıkmaktadır. Bu çalışmalarda ağırlıklı olarak karasal alanlardaki korunan alanların ele alındığı, deniz koruma alanlarına dair sınırlı sayıda araştırma olduğu tespit edilmiştir.

Sonuç olarak alanyazında araştırma eğilimlerinin, türlerin ve yaşam alanlarının özgül değerlerini öne çıkaran, biyoçeşitliliğin korunması için habitat bütünlüğünü vurgulayan, çevre merkezli bir bakış açısı ile genişlediği ve derinleştiği görülmektedir.

**Anahtar Kelimeler :** Korunan alanlar, iklim değişikliği, biyoçeşitlilik, arazi kullanım değişimi, çevre merkezli, bibliyometrik.

## UNCOVERING PRE-CONSTRUCTION RISK FACTORS AFFECTING CONSTRUCTION LABOR PRODUCTIVITY

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### ABSTRACT

Project success is traditionally measured by time, cost, and quality dimensions in the construction industry. Meantime, the construction sector requires an intense workforce. The productivity of the workers in construction projects has a significant impact on whether the project will be completed successfully or not. In this vein, there are many risk factors that influence the productivity of construction workers. These factors can be typically divided into two groups as pre-construction and during construction. The risk factors that affect the productivity that can be managed before starting the execution phase play a key role in increasing the productivity during the execution phase. In this study, the risk factors affecting labor productivity that can be managed before the execution phase in construction projects were determined. Accordingly, the most important risk factors were revealed through semi-structured interviews with experienced experts in the sector. The findings address that lack of experience on similar projects and contract types, lack of employees to control and monitor efficiency, lack of technology use to increase productivity, and lack of information and uncertainty about project activities were the most significant factors. This study is critical not only because it focuses on the risks that affect productivity in the construction sector but also because it emphasizes the actions that can be taken before the project execution to improve productivity.

**Keywords:** Construction industry, Construction productivity, Project success.

## TURHAL GELENEKSEL KONUTLARININ CEPHE BİÇİMLENİŞİ

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### Özet

Turhal, Tokat İline 46 km uzaklıkta yer alan bir kent merkezidir. Kent merkezi Erbaa'dan sonra Tokat'ın ikinci büyük ilçesidir. Kuzeyinde Amasya, Samsun illeri ile Erbaa ilçesi, batısında Çorum ili ile Zile ilçesi, doğusunda ise Tokat il merkezi bulunmaktadır. Yeşilirmak Turhal kent merkezini ortadan bölecek şekilde kentin ortasından geçip ikiye bölmektedir. Yeşilirmak'ın doğusunda Turhal'ın geleneksel yerleşimi bulunurken, batısında ise yeni yerleşim alanları yer almaktadır. Yeşilirmak'ın doğusunda eğim artarken, batıya doğru gidildikçe eğim azalmaktadır. Turhal'da ilk yerleşim yeri, Sümerler devrinde yapıldığı inşa edilen Turhal Kalesi'dir. Kuruluştan Cumhuriyet Devrine kadar yerleşim kalenin çevresinde şekillenmiştir. Kent merkezinde 1944 yılı öncesinde kalenin güneyi hariç yerleşim görülmezken, 1944 – 1946 yıllarında kuzey yamaçlarında geçmişte mezarlık olan alanlarda gecekonduculardan oluşan bir mahalle kurulmuştur. Daha sonra günümüzde Yeni Şehir olarak adlandırılan bölge, 1946'da alınan kararın ardından kurulan yeni yerleşim yeri olmuştur. Bu yeni yerleşimde ilk olarak kaymakamlık binası inşa edilmiş ve ardından tarım arazileri konut alanlarına dönüşmüştür Cumhuriyetin ilanı, Turhal'ın ilçe olması, Turhal Şeker Fabrikası'nın açılışı ve kent içerisinden geçen demiryolu 20. yüzyıl başında 300 haneli küçük bir yerleşim olan Turhal'ın gelişimini ve nüfusunu olumlu yönde etkilemiştir. Geçmişten günümüze tarım arazilerinin yerleşim alanlarına dönüştüğü Turhal kent merkezinde bu durum günümüzde de devam etmekte ve kent batı yönünde her geçen gün gelişmektedir.

**Anahtar Kelimeler:** Turhal, Konut, Mimari, Cephe.

### Abstract

Turhal is a city center located 46 km from Tokat Province. The city center is the second largest district of Tokat after Erbaa, Amasya, Samsun, provinces and Erbaa district is located in the north, Çorum province and Zile district in the west, and Tokat city center in the east. Yeşilirmak Turhal passes through the middle of the city and divides it into two dividing the city center in the middle. While there is the traditional settlement of Turhal in the east of Yeşilirmak, there are new settlements in the west. While the slope increases in the east of Yeşilirmak, the slope decreases towards the west. The first settlement in Turhal is Turhal Castle, which was built during the Sumerian period. From the foundation to the Republic Period, the settlement was shaped around the castle. While there was no settlement in the city center except for the south of the castle before 1944, a neighborhood consisting of slums was established on the northern slopes in 1944 – 1946 on the areas that were cemeteries in the past. The region which is now called the New City, became the new settlement established after the decision taken in 1946. In this new settlement, first the district governor's office was built and then the agricultural lands turned into residential areas. The proclamation of the Rebutic, Turhal becoming a district, the opening of the Turhal Sugar Factory and the railway passing through the city had a positive

impact on the development and population of Turhal, which was a small settlement with 300 households at the beginning of the 20th century. This situation continues today in the city center of Turhal, where agricultural lands have turned into residential areas from the past to the present, and the city is developing day by day in the west direction.

**Keywords:** Turhal, House, Architectural, Facade.





## ZİLE'DEKİ GELENEKSEL KONUTLARDA CUMBA ÖRNEKLERİ

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### Özet

Zile kent merkezi, Tokat İlinin en önemli ilçelerinden biridir. Zile; geçmişten günümüze tarihi, bulunduğu coğrafi konumundan dolayı kültürel ve sanatsal zenginliklere sahip bir ilçe merkezidir. Kent merkezi Zile Ovası'nın kuzeybatı bölümünde konumlanmıştır. Tarih boyunca Pers, Pontus, Roma ve Bizans gibi birçok devletin bünyesi altına girmiştir. Osmanlı devrinde Zile'nin büyük bölümü dışardan gelen isyancılar tarafından zarara uğratılmıştır. Cumhuriyet devrinde Zile ilçe merkezi genellikle güney, batı ve kuzeydoğu yönlerinde ilerleme göstermiştir. Zile kent merkezi geleneksel evler açısından zenginlik gösteren ilçelerden biridir. Kent merkezinde yaklaşık 3.000 geleneksel konut bulunmaktadır. Bu konutların yaklaşık 100'ü tescillidir. Günümüzde geleneksel konutların bazılarının restorasyonu yapılmıştır. Bununla birlikte restorasyonu devam edenler de bulunmaktadır. Konutların planı iç ve orta sofalı olup dışa kapalıdır. Yapılar tek katlı olmakla birlikte iki ve üç katlı olan evler de bulunmaktadır. Yapıların üst katları dışa çıkıntılı olarak yapılmıştır. Cumba, yapıların üst katlarından oda veya sofadan sokağa dışarı doğru taşmış, üstü ve etrafı örtülü biçimine denir. Küçüklerine "şahnişin" veya "şahniş" de denilen cumbaların üç tarafı pencereyi olup burada oturularak sokak izlenmektedir. Cumba, geleneksel konutlarda sofa cumbası ve oda cumbası olmak üzere iki şekilde karşımıza çıkmaktadır. Zile'de geleneksel konutların üst kat çıkmalarını oluşturan cumbaların sayısı oldukça fazladır. Bu çalışmamızın amacı Zile'deki geleneksel konutlarının üst katlarında çıkma yapan cumbaları kategorize ederek ortaya çıkarmak, bunları verdiğimiz örneklerle ayrıntılı bir biçimde belirtmektir. Çalışma yapılırken kaynaklardan literatür taramaları yapılmış, bunun dışında konutlar yerinde gözlemlenmiş, fotoğraflar eşliğinde bilgisayar ortamına aktarılmıştır.

**Anahtar Kelimeler:** Zile, Konut, Cumba

### Abstract

Zile city center is one of the most important districts of Tokat Province. Zile is a district center with cultural and artistic riches due to its long lasting history and geographical location. The city center is located in the northwest part of the Zile Plain. Throughout history it has been under the sovereignty of many states such as Persia, Pontus, Rome and Byzantium. During the Ottoman period, most of Zile was damaged by outside rebels. During the Republican period, Zile district center generally developed in the south, West and northeast directions. Zile city center is one of the districts that show wealth in terms of traditional houses. There are approximately 3.000 traditional houses in the city center. These of residences about 100 are registered. Today, some of traditional houses have been restored. However, there are those whose restoration continues. The plans of the houses are generally with inner and middle sofas and they are closed to the outside. Although the buildings are single storey, there are also two and three storey houses. The upper floors of the buildings were built as protruding outwards. The bay window is the form that overflows from the room or sofa from the upper floors of the

buildings to the street and is covered and covered. The bay windows, which are also called “şahnişin” or “şahniş” for small ones, have windows on there sides and the street is watched by sitting here. Bay window appears in two forms in traditional houses as sofa bay window and room window. The number of bay windows forming is quite high the upper floors of traditional houses in Zile. The aim of this study is to categorize and reveal the bay windows that protrude on the upper floors of traditional houses in Zile, we gave and specify to them in detail with the examples. During the study, literatüre scans were made from the sources, apart from this, the houses were observed in situation and transferred to the computer environment with photographs.

**Keywords:** Zile, House, Bay Window



## EXPERIMENTAL STUDY OF THE EVOLUTION OF THE BREACH AND THE DISCHARGE THROUGH THE BREACH RESULTING FROM PIPING DUE TO THE SEEPAGE AT THE BOTTOM OF EARTH-FILL DAM WITH CLAY CORE

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### Abstract

Internal erosion, also known as piping, is one of the most important causes of earth-fill dam failures. This study was conducted in the scope of the project supported financially by the Scientific and Technological Research Council of Turkey (TÜBİTAK) and it consists of experimental study which aims to investigate the breach mechanism and provide data needed to perform numerical analyses with more realistic approaches. The experiments were carried out at Hydraulics Laboratory of Civil Engineering Department within İzmir University of Economics. The dam model with a height of 0.65 m, a bottom width of 2 m and a crest width of 0.05 m was built in a flume 1.00 m wide, 0.81 m high and 5.44 m long. Before the construction of the dam, some common soil mechanics tests were also performed. The dam body was constructed by using a mixture of 15 % clay and 85 % sand. The clay core width was 15 cm at bottom and 1 cm at crest. The weak layer with cross section of  $5 \times 5 \text{ cm}^2$  was consisted of rock salt and it was placed at the bottom, along the centerline of the dam. The temporal evolution of the breach resulting from the piping was recorded by means of high-precision cameras. The pump flow rate was measured by magnetic flow meter and the flow rate values through the breach were determined from the continuity equation. The time-varied values of the total and wetted breach areas were determined by using the Gauss Area formula. The velocity values were calculated by dividing the flow rates through the breach to the corresponding wetted areas. The temporal changes of water depth in the channel were also recorded. The so obtained experimental findings are presented and commented.

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

## SARIÇAM (*PINUS SYLVESTRIS* L.) ODUNUNDA RENK PARAMETRELERİ ÜZERİNE SODYUM HİPOKLORİT (NaClO) KİMYASALININ ETKİSİ

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### Özet

Bu çalışmada, sarıçam (*Pinus sylvestris* L.) odununda renk parametreleri üzerine farklı uygulamalarla muamele edilmiş sodyum hipoklorit (NaClO) kimyasalının etkisi araştırılmıştır. Ahşap yüzeylere sünger kullanılarak uygulama ve 5 lt su + 180 ml kimyasal çözeltinin bulunduğu ortamda 5, 15 ve 30 dakikalarda bekletme işlemleri yapılmıştır. Bütün uygulamaların sonlarında süre sonunda su ile yıkama işlemi yapılmıştır. Daha sonrasında bütün muamele edilmiş deney örneklerinde renk parametrelerine ait ölçümler yapılmıştır. Belirlenmiş olan sonuçlara göre, en düşük  $\Delta E^*$  değeri 23.06 olarak 30 dakika bekletme sonrasında su muamelesi ve en yüksek  $\Delta E^*$  değeri 30.73 olarak sünger ile sürme uygulamasına ait deney örneklerinde tespit edilmiştir. Uygulamalara ait sürenin artmasıyla  $\Delta b^*$ ,  $\Delta a^*$ ,  $\Delta H^*$  ve  $\Delta E^*$  değerlerinin azaldığı belirlenmiştir. Varyans analizi sonuçlarına göre, uygulama metodunun,  $h^0$  değerinde ise anlamsız olarak bulunduğu ve  $L^*$ ,  $a^*$ ,  $C^*$  ve  $b^*$  parametrelerinde anlamlı olarak elde edildiği görülmüştür.  $a^*$ ,  $L^*$ ,  $C^*$ ,  $h^0$  ve  $b^*$  değerleri NaClO kimyasalının farklı uygulamalarla ahşaba uygulanmasına rağmen değişmiştir.

**Anahtar kelimeler;** Sarıçam, *Pinus sylvestris* L., renk, sodyum hipoklorit, NaClO, ağartma

### The effect of sodium hypochlorite (NaClO) chemical on color parameters of Scots pine (*Pinus sylvestris* L.) wood

#### Abstract

In this study, the effect of sodium hypochlorite (NaClO) chemical treated with different applications on color parameters of Scots pine (*Pinus sylvestris* L.) wood was investigated. It was applied on wooden surfaces using a sponge and kept in an environment of 5 lt water + 180 ml chemical solution for 5, 15 and 30 minutes. At the end of all applications, washing with water was carried out at the end of the period. Afterwards, measurements of color parameters were made in all treated test samples. According to the determined results, the lowest  $\Delta E^*$  value was determined as 23.06 after 30 minutes of water treatment and the highest  $\Delta E^*$  value was 30.73 in the test samples of the application with sponge application. It was determined that  $\Delta b^*$ ,  $\Delta a^*$ ,  $\Delta H^*$ , and  $\Delta E^*$  values decreased with the increase in the application time. According to the results of analysis of variance, it was seen that the application method was insignificant in the  $h^0$  value, and it was found to be significant in the parameters  $L^*$ ,  $a^*$ ,  $C^*$  and  $b^*$ . The  $a^*$ ,  $L^*$ ,  $C^*$ ,  $h^0$ , and  $b^*$  values changed despite the application of the NaClO chemical to the wood with different applications.

**Keywords;** Scots pine, *Pinus sylvestris* L., color, sodium hypochlorite, NaClO, bleaching

## ISIL İŞLEM GÖRMÜŞ PEMBE FİLDİŞİ (*BERCHEMIA ZEYHERİ* (SOND.) GRUBOV) AHŞABINDA SEÇİLMİŞ BAZI YÜZEY ÖZELLİKLERİNİN İNCELENMESİ

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### Özet

Bu çalışmada, Pembe fildişi (*Berchemia zeyheri* (Sond.) Grubov) ağacına ait ahşabın 200°C sıcaklıkta 3 saatlik ısıtma işlemi uygulaması etkisiyle oluşan bazı yüzey özelliklerindeki değişiklikler (shore D sertlik değeri, renk parametreleri, parlaklık ve beyazlık indeksi değerleri) araştırılmıştır. Isıl işlem görmüş ve görmemiş (kontrol) deney örneklerine ilişkin olan test sonuçları birbirleri ile kıyaslanmıştır. Elde edilen sonuçlara göre, Shore D sertlik değerlerinde %3.47 oranında bir azalma göstermiştir. Beyazlık indeksi değerleri paralel yönde %69.13 ve dik yönde %81.36 oranlarında azalmıştır.  $h^{\circ}$  açısında artış belirlenirken,  $C^*$ ,  $L^*$ ,  $a^*$  ve  $b^*$  parametrelerinde azalmalar belirlenmiştir. 20 ve 60 derecelerde yapılan parlaklık değerleri liflere ait olan dik ve paralel yönlerde azalmıştır. Yapılan ısıtma işlemi ile bu ağaç türü üzerinde yapılan testlerde değiştirici bir etkide bulunduğu görülmüştür.

**Anahtar kelimeler:** Pembe fildişi ahşabı, *Berchemia zeyheri* (Sond.) Grubov, renk, ısıtma işlemi, parlaklık, shore D sertlik değeri, beyazlık indeksi değeri

### Investigation of some selected surface properties of heat treated pink ivory (*Berchemia zeyheri* (Sond.) Grubov) wood

#### Abstract

In this study, some surface changes (shore D hardness value, color parameters, glossiness and whiteness index values) that occur after heat treatment at 200°C for 3 hours in the wood of pink ivory (*Berchemia zeyheri* (Sond.) Grubov) were investigated. Test results of heat treated and untreated (control) test samples were compared with each other. According to the results obtained, Shore D showed a decrease of 3.47% in hardness values. The whiteness index values decreased by 69.13% in the parallel direction and 81.36% in the vertical direction. While an increase in  $h^{\circ}$  angle was determined, decreases were determined in  $C^*$ ,  $L^*$ ,  $a^*$  and  $b^*$  parameters. The glossiness values at 20 and 60 degrees decreased in the perpendicular and parallel directions of the fibers. It has been observed that the heat treatment has a modifying effect in the tests performed on this wood species.

**Keywords:** Pink ivory wood, *Berchemia zeyheri* (Sond.) Grubov, color, heat treatment, glossiness, shore D hardness value, whiteness index value

## **EFFECT OF DIFFERENT OILS ON QUALITY OF DEEP-FRIED DOUGH STICK**

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### **Abstract:**

The aim of this study was to determine the effect of oils on chemical, physical, and sensory properties of deep-fried dough stick. Five kinds of vegetable oil which were used for addition and frying consist of: palm oil, soybean oil, sunflower oil, rice bran oil, and canola oil. The results of this study showed that using different kinds of oil made significant difference in the quality of deep-fried dough stick. Deep-fried dough stick fried with the rice bran oil had the lowest moisture loss and oil absorption ( $p \leq 0.05$ ), but it had some unsatisfactory physical properties (color, specific volume, density, and texture) and sensory characteristics. Nonetheless, deep-fried dough stick fried with the sunflower oil had moisture loss and oil absorption slightly more than the rice bran oil, but it had almost higher physical and sensory properties. Deep-fried dough sticks together with the sunflower oil did not have different sensory score from the palm oil, commonly used for production of deep-fried dough stick. These results indicated that addition and frying with the sunflower oil are appropriate for the production of deep-fried dough stick.

**Keywords:** Deep-fried dough stick, palm oil, sunflower oil, rice bran oil.

## ASSOCIATION BETWEEN SINGLE NUCLEOTIDE POLYMORPHISM OF CALPAIN1 GENE AND MEAT TENDERNESS TRAITS IN DIFFERENT GENOTYPES OF CHICKEN: MALAYSIAN NATIVE AND COMMERCIAL

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### Abstract:

Meat Tenderness is one of the most important factors affecting consumers' assessment of meat quality. Variation in meat tenderness is genetically controlled and varies among breeds, and it is also influenced by environmental factors that can affect its creation during rigor mortis and postmortem. The final postmortem meat tenderization relies on the extent of proteolysis of myofibrillar proteins caused by the endogenous activity of the proteolytic calpain system. This calpain system includes different calcium-dependent cysteine proteases, and an inhibitor, calpastatin. It is widely accepted that in farm animals including chickens, the  $\mu$ -calpain gene (CAPN1) is a physiological candidate gene for meat tenderness. This study aimed to identify the association of single nucleotide polymorphism (SNP) markers in the CAPN1 gene with the tenderness of chicken breast meat from two Malaysian native and commercial broiler breed crosses. Ten, five months old native chickens and ten, 42 days commercial broilers were collected from the local market and breast muscles were removed two hours after slaughter, packed separately in plastic bags and kept at  $-20^{\circ}\text{C}$  for 24 h. The tenderness phenotype for all chickens' breast meats was determined by Warner-Bratzler Shear Force (WBSF). Thawing and cooking losses were also measured in the same breast samples before using in WBSF determination. Polymerase chain reaction (PCR) was used to identify the previously reported C7198A and G9950A SNPs in the CAPN1 gene and assess their associations with meat tenderness in the two breeds. The broiler breast meat showed lower shear force values and lower thawing loss rates than the native chickens ( $p < 0.05$ ), whereas there were similar in the rates of cooking loss. The study confirms some previous results that the markers CAPN1 C7198A and G9950A were not significantly associated with the variation in meat tenderness in chickens. Therefore, further study is needed to confirm the functional molecular mechanism of these SNPs and evaluate their associations in different chicken populations.

**Keywords:** CAPN1, chicken, meat tenderness, meat quality, SNPs.

## PROPHYLACTIC EFFECTS OF DAIRY KLUYVEROMYCES MARXIANUS YAS THROUGH OVEREXPRESSION OF BAX, CASP 3, CASP 8 AND CASP 9 ON HUMAN COLON CANCER CELL LINES

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### Abstract:

Colorectal cancer (CRC) is one of the most prevalent cancers and intestinal microbial community plays an important role in colorectal tumorigenesis. Probiotics have recently been assessed as effective anti-proliferative agents and thus this study was performed to examine whether CRC undergo apoptosis by treating with isolated Iranian native dairy yeast, *Kluyveromyces marxianus* YAS, secretion metabolites. The cytotoxicity assessments on cells (HT-29, Caco-2) were accomplished through 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay as well as qualitative DAPI (4',6-diamidino-2-phenylindole staining) and quantitative (flow cytometry assessments) evaluations of apoptosis. To evaluate the main mechanism of apoptosis, Real time PCR method was applied. *Kluyveromyces marxianus* YAS secretions (IC50) showed significant cytotoxicity against HT-29 and Caco-2 cancer cell lines (66.57 % and 66.34 % apoptosis) similar to 5-Fluorouracil (5-FU) while apoptosis only was developed in 27.57 % of KDR normal cells. The prophylactic effects of *Kluyveromyces marxianus* (PTCC 5195), as a reference yeast, was not similar to *Kluyveromyces marxianus* YAS indicating strain dependency of bioactivities on CRC disease prevention. Based on real time PCR results, the main cytotoxicity is related to apoptosis phenomenon and the core related mechanism is depended on the overexpression of BAX, CASP 9, CASP 8 and CASP 3 inducing apoptosis genes. However, several investigations should be conducted to precisely determine the effective compounds to be used as anticancer therapeutics in the future.

**Keywords:** Anticancer, anti-proliferative, apoptosis, cytotoxicity, yeast.



## COLOR CHARACTERISTICS OF DRIED COCOA USING SHALLOW BOX FERMENTATION TECHNIQUE

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### Abstract:

Fermentation is well known as an essential process to develop chocolate flavor in dried cocoa beans. Besides developing the precursor of cocoa flavor, it also induces the color changes in the beans. The fermentation process is influenced by various factors such as planting material, preconditioning of cocoa pod and fermentation technique. Therefore, this study was conducted to evaluate color of Malaysian cocoa beans and how the duration of pods storage and fermentation technique using shallow box will effect on its color characteristics. There are two factors being studied i.e. duration of cocoa pod storage (0, 2, 4 and 6 days) and duration of cocoa fermentation (0, 1, 2, 3, 4 and 5 days). The experiment is arranged in 4 x 6 factorial designs with 24 treatments and arrangement is in a Completely Randomised Design (CRD). The produced beans are inspected for color changes under artificial light during cut test and divided into four groups of color namely fully brown, purple brown, fully purple and slaty. Cut tests indicated that cocoa beans which are directly dried without undergone fermentation has the highest slaty percentage. However, application of pods storage before fermentation process is found to decrease the slaty percentage. In contrast, the percentages of fully brown beans start to dominate after two days of fermentation, especially from four and six days of pods storage batch. Whereas, almost all batches of cocoa beans have a percentage of fully purple less than 20%. Interestingly, the percentage of purple brown beans are scattered in the entire beans batch regardless any specific trend. Meanwhile, statistical analysis using General Linear Model showed that the pods storage has a significant effect on the color characteristic of the Malaysian dried beans compared to fermentation duration.

**Keywords:** Cocoa beans, color, fermentation, shallow box.

## EVALUATION OF BAKERY PRODUCTS MADE FROM BARLEY-GELATINIZED CORN FLOUR AND WHEAT-DEFATTED RICE BRAN FLOUR COMPOSITES

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### Abstract:

In the present research, whole meal barley flour (WBF) was supplemented with gelatinized corn flour (GCF) in 0 and 30%. Whole meal wheat flour (WWF) was mixed with defatted rice bran (DRB) to produce 0, 20, 25, and 30% replacement levels. Rheological properties of dough were studied. Thermal properties and starch crystallinity of flours were evaluated. Flat bread, balady bread and pie were prepared from the different flour blends. The different bakeries were sensory evaluated. Color of raw materials and crust of bakery products were determined. Nutrients contents of raw flours and food products were assessed. Results showed that addition of GCF to WBF increased the viscosity and falling number of the produced dough. Water absorption, dough development time and dough stability increased with increasing the level of DRB in dough while, weakening and mixing tolerance index decreased. Extensibility and energy decreased, while, resistance to extension increased as DRB level increased. Gelatinized temperature of WWF, WBF, GCF, and DRB were 13.26, 35.09, 28.33, and 39.63, respectively. Starch crystallinity was affected when DRB was added to WWF. The highest protein content was present in balady bread made from 70% WWF and 30% DRB. The highest calcium, phosphorus, and potassium levels were present in products made from 100% WBF. Sensory attributes of the products were slightly affected by adding DRB and GCF. Conclusion: Addition of DRB or GCF to WWF or WBF, respectively affect the physical, chemical, rheological and sensory properties of balady bread, flat bread, and pie while improved their nutritive values.

**Keywords:** Bakeries, rheological properties, chemical and sensory attributes, flour thermal properties and starch crystallinity.

## SCREENING OF POTENTIAL SOURCES OF TANNIN AND ITS THERAPEUTIC APPLICATION

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<sup>2</sup>Professor, Department of Foods & Nutrition, College of Home Science, Maharana Pratap University of Agriculture & Technology, India

### Abstract:

Tannins are a unique category of plant phytochemicals especially in terms of their vast potential health-benefiting properties. Researchers have described the capacity of tannins to enhance glucose uptake and inhibit adipogenesis, thus being potential drugs for the treatment of non-insulin dependent diabetes mellitus. Thus, the present research was conducted to find out tannin content of food products. The percentage of tannin in various analyzed sources ranged from 0.0 to 108.53%; highest in kathaa and lowest in ker and mango bark. The percentage of tannins present in the plants, however, varies. Numerous studies have confirmed that the naturally occurring polyphenols are key factor for the beneficial effects of the herbal medicines. Isolation and identification of active constituents from plants, preparation of standardized dose & dosage regimen can play a significant role in improving the hypoglycaemic action.

**Keywords:** Tannins, Diabetes, Polyphenols, Antioxidants, Hypoglycemia.

## INCIDENCE OF FUNGAL INFECTIONS AND MYCOTOXICOSIS IN PORK MEAT AND PORK BY-PRODUCTS IN EGYPTIAN MARKETS

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<sup>2</sup>National Research Centre 33 Al Behous, Ad Doqi, Giza, Egypt.

### Abstract:

The consumption of food contaminated with molds (microscopic filamentous fungi) and their toxic metabolites results in the development of food-borne mycotoxicosis. The spores of molds are ubiquitously spread in the environment and can be detected everywhere. Ochratoxin A is a toxic and potentially carcinogenic fungal toxin found in a variety of food commodities. In this study, the mycological quality of various ready-to-eat local and imported pork meat and meat byproducts sold in Egyptian markets were assessed and the presence of various molds was determined in pork used as a raw material, edible organs as liver and kidney as well as in fermented raw meat by-products. The study assessed the mycological quality of pork raw meat and their by-products sold in commercial shops in Cairo, Egypt. Mycological analysis was conducted on (n=110) samples which included pig's livers and kidneys from Egyptian Bassatin slaughter house; local and imported processed pork meat by-products from Egyptian pork markets. The isolates were identified using traditional mycological and biochemical tests. All kidney and liver samples were positive to molds growth while all byproducts were negative. Ochratoxin A levels were quantitatively analyzed using the high performance liquid chromatography (HPLC) and the highest results were present in kidney 7.51 part per billion (ppb) followed by minced meat 6.19 ppb generally the local samples showed higher levels than the imported ones. To the best of our knowledge, this is the first report on mycotoxins detection and quantification from pork by-products in Egypt.

**Keywords:** Egypt, imported pork by-products, local, mycotoxins.

## INADEQUACY OF MACRONUTRIENT AND MICRONUTRIENT INTAKE IN CHILDREN AGED 12-23 MONTHS OLD: AN URBAN STUDY IN CENTRAL JAKARTA, INDONESIA

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### Abstract:

Optimal feeding, including optimal micronutrient intake, becomes one of the ways to overcome the long-term consequences of undernutrition. Macronutrient and micronutrient intake were important to a rapid growth and development of young children. The study objective was to assess macro and micronutrient intake and its adequacy in children aged 12-23 months. This survey was a cross-sectional study, involving 83 caregivers with children aged 12-23 months old in Senen Sub-district, Central Jakarta selected through simple random sampling. Data on nutrient intake was obtained through interview using single 24-hour recall. Repeated 24-hour recall to sub-sample was done to estimate the proportion of nutrient inadequacy. The highest prevalence of nutrient inadequacy was iron (52.4%), followed by vitamin C (30.9%) and zinc (28.8%). Almost 12% children had inadequate energy intake. More than half of children (62.6%) were anemic (25.3% were severely anemic). Micronutrient inadequacy, especially iron, was more problematic than macronutrient inadequacy in the study area.

**Keywords:** Micronutrient, macronutrient, children under five, urban setting.

## EMAIL BASED GLOBAL AUTOMATION WITH RASPBERRY PI AND CONTROL CIRCUIT MODULE: DEVELOPMENT OF SMART HOME APPLICATION

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### **Abstract:**

Global Automation is an emerging technology of today's era and is based on Internet of Things (IoT). Global automation deals with the controlling of electrical appliances throughout the world. The fabrication of this system has been carried out with interfacing an electrical control system module to Raspberry Pi. An electrical control system module includes a relay driver mechanism through which appliances are controlled automatically in respective condition. In this research project, one email ID has been assigned to Raspberry Pi, and the users from different location having different email ID can mail to Raspberry Pi on assigned email address "raspberrypilochan96@gmail.com" with subject heading "Device Control" with predefined command on compose email line. Also, a notification regarding current working condition of this system has been updated on respective user email ID. This approach is an innovative way of implementing smart automation system through which a user can control their electrical appliances like light, fan, television, refrigerator, etc. in their home with the use of email facility. The development of this project helps to enhance the concept of smart home application as well as industrial automation.

**Keywords:** Control circuit, email, global automation, internet of things, Raspberry Pi.

## AN IMPLICIT METHODOLOGY FOR THE NUMERICAL MODELING OF LOCALLY INEXTENSIBLE MEMBRANES

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and Electrical Engineering, Swiss Federal Institute of Technology, Zurich

### **Abstract:**

We present in this paper a fully implicit finite element method tailored for the numerical modeling of inextensible fluidic membranes in a surrounding Newtonian fluid. We consider a highly simplified version of the Canham-Helfrich model for phospholipid membranes, in which the bending force and spontaneous curvature are disregarded. The coupled problem is formulated in a fully Eulerian framework and the membrane motion is tracked using the level set method. The resulting nonlinear problem is solved by a Newton-Raphson strategy, featuring a quadratic convergence behavior. A monolithic solver is implemented, and we report several numerical experiments aimed at model validation and illustrating the accuracy of the proposed method. We show that stability is maintained for significantly larger time steps with respect to an explicit decoupling method.

**Keywords:** Finite element method, Newton method, level set, Navier-Stokes, inextensible membrane, liquid drop.

## **EFFECT OF UREA DEEP PLACEMENT TECHNOLOGY ADOPTION ON THE PRODUCTION FRONTIER: EVIDENCE FROM IRRIGATION RICE FARMERS IN THE NORTHERN REGION OF GHANA**

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### **Abstract:**

Rice is an important staple crop, with current demand higher than the domestic supply in Ghana. This has led to a high and unfavourable import bill. Therefore, recent policies and interventions in the agricultural sub-sector aim at promoting various improved agricultural technologies in order to improve domestic production and reduce the importation of rice. In this study, we examined the effect of the adoption of Urea Deep Placement (UDP) technology by rice farmers on the position of the production frontier. This involved 200 farmers selected through a multi stage sampling technique in the Northern region of Ghana. A Cobb-Douglas stochastic frontier model was fitted. The result showed that the adoption of UDP technology shifts the output frontier outward and also move the farmers closer to the frontier. Farmers were also operating under diminishing returns to scale which calls for redress. Other factors that significantly influenced rice production were farm size, labour, use of certified seeds and NPK fertilizer. Although there was an opportunity for improvement, the farmers were highly efficient (92%), compared to previous studies. Farmers' efficiency was improved through increased education, household size, experience, access to credit, and lack of extension service provision by MoFA. The study recommends the revision of Ghana's agricultural policy to include the UDP technology. Agricultural Extension officers of the Ministry of Food and Agriculture (MoFA) should be trained on the UDP technology to support IFDC's drive to improve adoption by rice farmers. Rice farmers are also encouraged to expand their farm lands, improve plant population, and also increase the usage of fertilizer to improve yields. Mechanisms through which credit can be made easily accessible and effectively utilised should be identified and promoted.

**Keywords:** Efficiency, rice farmers, stochastic frontier, UDP technology.



## MICROSTRIP PATCH ANTENNA ENHANCEMENT TECHNIQUES

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**Abstract:**

Microstrip patch antennas are widely used in many wireless communication applications because of their various advantages such as light weight, compact size, inexpensive, ease of fabrication and high reliability. However, narrow bandwidth and low gain are the major drawbacks of microstrip antennas. The radiation properties of microstrip antenna is affected by many designing factors like feeding techniques, manufacturing substrate, patch and ground structure. This manuscript presents a review of the most popular gain and bandwidth enhancement methods of microstrip antenna and reports a brief description of its feeding techniques.

**Keywords:** Gain and bandwidth enhancement, slotted patch, parasitic patch, electromagnetic band gap, defected ground, feeding techniques.

## STRATEGY IN CONTROLLING RICE-FIELD CONVERSION IN PANGKEP REGENCY, SOUTH SULAWESI, INDONESIA

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### **Abstract:**

The national rice consumption keeps increasing along with raising income of the households and the rapid growth of population. However, food availability, particularly rice, is limited. Impacts of rice-field conversion have run cumulatively, as we can see on potential losses of rice and crops production, as well as work opportunity that keeps increasing year-by-year. Therefore, it requires policy recommendation to control rice-field conversion through economic, social, and ecological approaches. The research was a survey method intended to: (1) Identify internal factors; quality and productivity of the land as the cause of land conversion, (2) Identify external factors of land conversion, value of the rice-field and the competitor's land, workforce absorption, and regulation, as well as (3) Formulate strategies in controlling rice-field conversion. Population of the research was farmers who applied land conversion at Pangkep Regency, South Sulawesi. Samples were determined using the incidental sampling method. Data analysis used productivity analysis, land quality analysis, total economic value analysis, and SWOT analysis. Results of the research showed that the quality of rice-field was low as well as productivity of the grains (unhulled-rice). So that, average productivity of the grains and quality of rice-field were low as well. Total economic value of rice-field was lower than the economic value of the embankment. Workforce absorption value on rice-field was higher than on the embankment. Strategies in controlling such rice-field conversion can be done by increasing rice-field productivity, improving land quality, applying cultivation technique of specific location, improving the irrigation lines, and socializing regulation and sanction about the transfer of land use.

**Keywords:** Land conversion, quality of rice-field, land economic value, strategy in controlling.

## **ROCK SLOPE STABILIZATION AND PROTECTION FOR ROADS AND MULTI-STOREY STRUCTURES IN JABAL OMAR, SAUDI ARABIA**

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### **Abstract:**

Jabal Omar is located in the western side of Makkah city in Saudi Arabia. The proposed Jabal Omar Development project includes several multi-storey buildings, roads, bridges and below ground structures founded at various depths. In this study, geological mapping and site inspection which covered pre-selected areas were carried out within the easily accessed parts. Geological features; including rock types, structures, degree of weathering, and geotechnical hazards were observed and analyzed with specified software and also were documented in form of photographs. The presence of joints and fractures in the area made the rock blocks small and weak. The site is full of jointing; it was observed that, the northern side consists of 3 to 4 jointing systems with 2 random fractures associated with dykes. The southern part is affected by 2 to 3 jointing systems with minor fault and shear zones. From the field measurements and observations, it was concluded that, the Jabal Omar intruded by andesitic and basaltic dykes of different thickness and orientation. These dykes made the outcrop weak, highly deformed and made the rock masses sensitive to weathering.

**Keywords:** Rock, slope, stabilization, protection, Makkah.

## HYBRID LIVING: EMERGING OUT OF THE CRISES AND DIVISIONS

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### **Abstract:**

The paper will focus on the hybrid living typologies which are brought about due to the Global Crisis. Mixing of the generations and the groups of people, mingling the functions of living with working and socializing, merging the act of living in synergy with the urban realm and its constituent elements will be the springboard of proposing an essential sustainable housing approach and the respective urban development. The thematic will be based on methodologies developed both on the academic, educational environment including participation of students' research and on the practical aspect of architecture including case studies executed by the author in the island of Cyprus. Both paths of the research will deal with the explorative understanding of the hybrid ways of living, testing the limits of its autonomy. The evolution of the living typologies into substantial hybrid entities, will deal with the understanding of new ways of living which include among others: re-introduction of natural phenomena, accommodation of the activity of work and services in the living realm, interchange of public and private, injections of communal events into the individual living territories. The issues and the binary questions raised by what is natural and artificial, what is private and what public, what is ephemeral and what permanent and all the in-between conditions are eloquently traced in the everyday life in the island. Additionally, given the situation of Cyprus with the eminent scar of the dividing 'Green line' and the waiting of the 'ghost city' of Famagusta to be resurrected, the conventional way of understanding the limits and the definitions of the properties is irreversibly shaken. The situation is further aggravated by the unprecedented phenomenon of the crisis on the island. All these observations set the premises of reexamining the urban development and the respective sustainable housing in a synergy where their characteristics start exchanging positions, merge into each other, contemporarily emerge and vanish, changing from permanent to ephemeral. This fluidity of conditions will attempt to render a future of the built- and unbuilt realm where the main focusing point will be redirected to the human and the social. Weather and social ritual scenographies together with 'spontaneous urban landscapes' of 'momentary relationships' will suggest a recipe for emerging urban environments and sustainable living. Thus, the paper will aim at opening a discourse on the future of the sustainable living merged in a sustainable urban development in relation to the imminent solution of the division of island, where the issue of property became the main obstacle to be overcome. At the same time, it will attempt to link this approach to the global need for a sustainable evolution of the urban and living realms.

**Keywords:** Social ritual scenographies, spontaneous urban landscapes, substantial hybrid entities, re-introduction of natural phenomena.

## LOCATING CRITICAL FAILURE SURFACE IN ROCK SLOPE STABILITY WITH HYBRID MODEL BASED ON ARTIFICIAL IMMUNE SYSTEM AND CELLULAR LEARNING AUTOMATA (CLA-AIS)

**Ramin Javadzadeh, Emad Javadzadeh**

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Emad Javadzadeh., Bojnourd Branch, Islamic Azad University-Bojnourd, Iran

### **Abstract:**

Locating the critical slip surface with the minimum factor of safety for a rock slope is a difficult problem. In recent years, some modern global optimization methods have been developed with success in treating various types of problems, but very few of such methods have been applied to rock mechanical problems. In this paper, use of hybrid model based on artificial immune system and cellular learning automata is proposed. The results show that the algorithm is an effective and efficient optimization method with a high level of confidence rate.

**Keywords:** CLA-AIS, failure surface, optimization methods, rock slope.

## PREDICTION OF IN SITU PERMEABILITY FOR LIMESTONE ROCK USING ROCK QUALITY DESIGNATION INDEX

**Ahmed T. Farid, Muhammed Rizwan**

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### **Abstract:**

Geotechnical study for evaluating soil or rock permeability is a highly important parameter. Permeability values for rock formations are more difficult for determination than soil formation as it is an effect of the rock quality and its fracture values. In this research, the prediction of in situ permeability of limestone rock formations was predicted. The limestone rock permeability was evaluated using Lugeon tests (in-situ packer permeability). Different sites which spread all over the Riyadh region of Saudi Arabia were chosen to conduct our study of predicting the in-situ permeability of limestone rock. Correlations were deducted between the values of in-situ permeability of the limestone rock with the value of the rock quality designation (RQD) calculated during the execution of the boreholes of the study areas. The study was performed for different ranges of RQD values measured during drilling of the sites boreholes. The developed correlations are recommended for the onsite determination of the in-situ permeability of limestone rock only. For the other sedimentary formations of rock, more studies are needed for predicting the actual correlations related to each type.

**Keywords:** Packer, permeability, rock, quality.

## EFFECT OF NANO-SIO<sub>2</sub> SOLUTION ON THE STRENGTH CHARACTERISTICS OF KAOLINITE

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### Abstract:

Today, with developments in science and technology, there is an excessive potential for the use of nanomaterials in various fields of geotechnical project such as soil stabilization. This study investigates the effect of Nano-SiO<sub>2</sub> solution on the unconfined compression strength and Young's elastic modulus of Kaolinite. For this purpose, nano-SiO<sub>2</sub> was mixed with kaolinite in five different contents: 1, 2, 3, 4 and 5% by weight of the dry soil and a series of the unconfined compression test with curing time of one-day was selected as laboratory test. Analyses of the tests results show that stabilization of kaolinite with Nano-SiO<sub>2</sub> solution can improve effectively the unconfined compression strength of modified soil up to 1.43 times compared to the pure soil.

**Keywords:** Kaolinite, nano-SiO<sub>2</sub>, stabilization, unconfined compression test, Young's modulus.

## ROOT GROWTH OF MORUS ALBA AS AFFECTED BY SIZE OF CUTTINGS AND POLYTHENE LOW TUNNEL

**Irfan Ahmad, Tahir Siddiqui, Rashid Ahmad Khan, Tahir Munir Butt**

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### **Abstract:**

An effort to find out the smaller size of cuttings for propagation of *Morus alba* was made in experimental area Department of Forestry, Range Management and Wildlife, University of Agriculture, Faisalabad, Pakistan. Different size of cuttings i.e. 2", 4", 6" and 8" were planted in polythene tubes of 3.5"x7". The effort was also made to compare the performance of cuttings in open air and in polythene low tunnel. Root length, number of root branches, root diameter and root fresh and dry weight were found maximum in two inches cuttings while minimum in four inches cuttings. Root growth was found maximum in open air as compared to under polythene sheet.

**Keywords:** cutting sizes *Morus alba*, Open air and polythene sheet, root growth



## DENSITY, STRENGTH, THERMAL CONDUCTIVITY AND LEACHATE CHARACTERISTICS OF LIGHT-WEIGHT FIRED CLAY BRICKS INCORPORATING CIGARETTE BUTTS

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### **Abstract:**

Several trillion cigarettes produced worldwide annually lead to many thousands of kilograms of toxic waste. Cigarette butts (CBs) accumulate in the environment due to the poor biodegradability of the cellulose acetate filters. This paper presents some of the results from a continuing study on recycling CBs into fired clay bricks. Physico-mechanical properties of fired clay bricks manufactured with different percentages of CBs are reported and discussed. The results show that the density of fired bricks was reduced by up to 30 %, depending on the percentage of CBs incorporated into the raw materials. Similarly, the compressive strength of bricks tested decreased according to the percentage of CBs included in the mix. The thermal conductivity performance of bricks was improved by 51 and 58 % for 5 and 10 % CBs content respectively. Leaching tests were carried out to investigate the levels of possible leachates of heavy metals from the manufactured clay-CB bricks. The results revealed trace amounts of heavy metals.

**Keywords:** Cigarette butts, Fired clay bricks, Light bricks, Recycling waste, Thermal conductivity, Leachates, Leaching test

## CHANNEL LENGTH MODULATION EFFECT ON MONOLAYER GRAPHENE NANORIBBON FIELD EFFECT TRANSISTOR

**Mehdi Saeidmanesh, Razali Ismail**

Universiti Teknologi, Malaysia

### **Abstract:**

Recently, Graphene Nanoribbon Field Effect Transistors (GNR FETs) attract a great deal of attention due to their better performance in comparison with conventional devices. In this paper, channel length Modulation (CLM) effect on the electrical characteristics of GNR FETs is analytically studied and modeled. To this end, the special distribution of the electric potential along the channel and current-voltage characteristic of the device is modeled. The obtained results of analytical model are compared to the experimental data of published works. As a result, it is observable that considering the effect of CLM, the current-voltage response of GNR FET is more realistic.

**Keywords:** Graphene nanoribbon, field effect transistors, short channel effects, channel length modulation.

## EXPERIMENTAL STUDY ON MECHANICAL PROPERTIES OF COMMERCIALY PURE COPPER PROCESSED BY SEVERE PLASTIC DEFORMATION TECHNIQUE-EQUAL CHANNEL ANGULAR EXTRUSION

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India

### **Abstract:**

The experiments have been conducted to study the mechanical properties of commercially pure copper processing at room temperature by severe plastic deformation using equal channel angular extrusion (ECAE) through a die of 90° angle up to 3 passes by route B<sub>C</sub> i.e. rotating the sample in the same direction by 90° after each pass. ECAE is used to produce from existing coarse grains to ultra-fine, equiaxed grains structure with high angle grain boundaries in submicron level by introducing a large amount of shear strain in the presence of hydrostatic pressure into the material without changing billet shape or dimension. Mechanical testing plays an important role in evaluating fundamental properties of engineering materials as well as in developing new materials and in controlling the quality of materials for use in design and construction. Yield stress, ultimate tensile stress and ductility are structure sensitive properties and vary with the structure of the material. Microhardness and tensile tests were carried out to evaluate the hardness, strength and ductility of the ECAE processed materials. The results reveal that the strength and hardness of commercially pure copper samples improved significantly without losing much ductility after each pass.

**Keywords:** Equal Channel Angular Extrusion, Severe Plastic Deformation, Copper, Mechanical Properties.

## SYNTHESIS AND CHARACTERIZATION OF RECYCLED ISOTACTIC POLYPROPYLENE NANOCOMPOSITES CONTAINING DATE WOOD FIBER

**Habib Shaban**

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### **Abstract:**

Nanocomposites of isotactic polypropylene (iPP) and date wood fiber were prepared after modification of the host matrix by reactive extrusion grafting of maleic anhydride. Chemical and mechanical treatment of date wood flour (WF) was conducted to obtain nanocrystalline cellulose. Layered silicates (clay) were partially intercalated with date wood fiber, and the modified layered silicate was used as filler in the PP matrix via a melt-blending process. The tensile strength of composites prepared from wood fiber modified clay was greater than that of the iPP-clay and iPP-WF composites at a 6% filler concentration, whereas deterioration of mechanical properties was observed when clay and WF were used alone for reinforcement. The dispersion of the filler in the matrix significantly decreased after clay modification with cellulose at higher concentrations, as shown by X-ray diffraction (XRD) data.

**Keywords:** Nanocomposites, isotactic polypropylene, date wood flour, intercalated, melt-blending.

## DETECTING AND MEASURING FABRIC PILLS USING DIGITAL IMAGE ANALYSIS

**Dariush Semnani, Hossein Ghayoor**

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### **Abstract:**

In this paper a novel method was presented for evaluating the fabric pills using digital image processing techniques. This work provides a novel technique for detecting pills and also measuring their heights, surfaces and volumes. Surely, measuring the intensity of defects by human vision is an inaccurate method for quality control; as a result, this problem became a motivation for employing digital image processing techniques for detection of defects of fabric surface. In the former works, the systems were just limited to measuring of the surface of defects, but in the presented method the height and the volume of defects were also measured, which leads to a more accurate quality control. An algorithm was developed to first, find pills and then measure their average intensity by using three criteria of height, surface and volume. The results showed a meaningful relation between the number of rotations and the quality of pillared fabrics.

**Keywords:** 3D analysis, computer vision, fabric, pill, surface evaluation

## THE INFLUENCE OF SURFACE POTENTIAL ON THE KINETICS OF BOVINE SERUM ALBUMIN ADSORPTION ON A BIOMEDICAL GRADE 316LVM STAINLESS STEEL SURFACE

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Department of Chemical Engineering, McGill University, 3610 University Street, Montreal, Canada

### **Abstract:**

Polarization modulation infrared reflection absorption spectroscopy (PM-IRRAS) in combination with electrochemistry, was employed to study the influence of surface charge (potential) on the kinetics of bovine serum albumin (BSA) adsorption on a biomedical-grade 316LVM stainless steel surface is discussed. The BSA adsorption kinetics was found to greatly depend on the surface potential. With an increase in surface potential towards more negative values, both the BSA initial adsorption rate and the equilibrium (saturated) surface concentration also increased. Both effects were explained on the basis of replacement of well-ordered water molecules at the 316LVM / solution interface, i.e. by the increase in entropy of the system.

**Keywords:** adsorption, biomedical grade stainless steel, bovine serum albumin (BSA), electrode surface potential / charge, kinetics, PM-IRRAS, protein/surface interactions

## REMOVAL OF COPPER AND ZINC IONS ONTO BIOMODIFIED PALM SHELL ACTIVATED CARBON

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Professor at the Chemical Engineering Department, Faculty of Engineering, University of Malaya, Kuala Lumpur, Malaysia

### Abstract:

commercially produced in Malaysia granular palm shell activated carbon (PSAC) was biomodified with bacterial biomass (*Bacillus subtilis*) to produce a hybrid biosorbent of higher efficiency. The obtained biosorbent was evaluated in terms of adsorption capacity to remove copper and zinc metal ions from aqueous solutions. The adsorption capacity was evaluated in batch adsorption experiments where concentrations of metal ions varied from 20 to 350 mg/L. A range of pH from 3 to 6 of aqueous solutions containing metal ions was tested. Langmuir adsorption model was used to interpret the experimental data. Comparison of the adsorption data of the biomodified and original palm shell activated carbon showed higher uptake of metal ions by the hybrid biosorbent. A trend in metal ions uptake increase with the increase in the solution-s pH was observed. The surface characterization data indicated a decrease in the total surface area for the hybrid biosorbent; however the uptake of copper and zinc by it was at least equal to the original PSAC at pH 4 and 5. The highest capacity of the hybrid biosorbent was observed at pH 5 and comprised 22 mg/g and 19 mg/g for copper and zinc, respectively. The adsorption capacity at the lowest pH of 3 was significantly low. The experimental results facilitated identification of potential factors influencing the adsorption of copper and zinc onto biomodified and original palm shell activated carbon.

**Keywords:** Adsorption, biomodification, copper, zinc, palm shell carbon.

## ISOLATION AND IDENTIFICATION OF DIACYLGLYCEROL ACYLTRANSFERASE TYPE- 2 (GAT2) GENES FROM THREE EGYPTIAN OLIVE CULTIVARS

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Rice Department of Genetic, Faculty of Agriculture- Alexandria University, Egypt

### **Abstract:**

Aim of this work was to study the genetic basis for oil accumulation in olive fruit via tracking DGAT2 (Diacylglycerol acyltransferase type-2) gene in three Egyptian Origen Olive cultivars namely Toffahi, Hamed and Maraki using molecular marker techniques and bioinformatics tools. Results illustrate that, firstly: specific genomic band of Maraki cultivars was identified as DGAT2 (Diacylglycerol acyltransferase type-2) and identical for this gene in *Olea europaea* with 100% of similarity. Secondly, differential genomic band of Maraki cultivars which produced from RAPD fingerprinting technique reflected predicted distinguished sequence which identified as DGAT2 (Diacylglycerol acyltransferase type-2) in *Fragaria vesca* subsp. *Vesca* with 76% of sequential similarity. Third and finally, specific genomic specific band of Hamed cultivars was identified as two fragments, 1- *Olea europaea* cultivar Koroneiki diacylglycerol acyltransferase type 2 mRNA, complete cds with two matches regions with 99% or 2- Predicted: *Fragaria vesca* subsp. *vesca* diacylglycerol O-acyltransferase 2-like (LOC101313050), mRNA with 86 % of similarity.

**Keywords:** *Olea europaea*, fingerprinting, Diacylglycerol acyltransferase type- 2 (DGAT2).



## EFFECT OF VARIOUS POLLEN SOURCES TO ABILITY FRUIT SET AND QUALITY IN 'LONG RED B' WAX APPLE

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### Abstract:

By hand pollination was conducted to evaluated different pollen sources and their affects on fruit set and quality of wax apple. The following parameters were recorded: fruit set, seed set, fruit characteristics. Results showed that fruit set percentage with seed were significantly high in 'Long Red B' when 'Black', 'Thyto' were used as pollen parents. Pollen of 'Black', 'Thyto' resulted in high fruit weight, fruit diameter, fruit length, bigger flesh thickness, better total soluble solids as compared with other pollens. The observation of pollen-growth in vitro revealed that pollen germination at 15% sucrose concentration are required for optimum pollen germination with the high pollen germination were found in 'Black', 'Thyto'. From the result, we concluded that 'Black', 'Thyto' were proved to be good pollinizers in 'Long Red B'. Therefore, artificial cross-pollination using 'Black', 'Thyto' as pollinizers were strongly recommended for 'Long Red B' cultivar in wax apple orchard.

**Keywords:** Wax apple, pollination, pollen source, in vitro, fruit quality.

## ISOLATION AND IDENTIFICATION FIBRINOLYTIC PROTEASE ENDOPHYTIC FUNGI FROM HIBISCUS LEAVES IN SHAH ALAM

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### Abstract:

Fibrin degradation is an important part in prevention or treatment of intravascular thrombosis and cardiovascular diseases. Plasmin like fibrinolytic enzymes has given new hope to patient with cardiovascular diseases by treating fibrin aggregation related diseases with traditional plasminogen activator which have many side effects. Various researches involving wide range of sources for production of fibrinolytic proteases, from bacteria, fungi, insects and fermented foods. But few have looked into endophytic fungi as a potential source. Sixteen (16) endophytic fungi were isolated from Hibiscus sp. leaves from six different locations in Shah Alam, Selangor. Only two endophytic fungi, FH3 and S13 showed positive fibrinolytic protease activities. FH3 produced 5.78cm and S13 produced 4.48cm on Skim Milk Agar after 4 days of incubation at 27°C. Fibrinolytic activity was observed; 3.87cm and 1.82cm diameter clear zone on fibrin plate of FH3 and S13 respectively. 18srRNA was done for identification of the isolated fungi with positive fibrinolytic protease. S13 had the highest similarity (100%) to that of *Penicillium citrinum* strain TG2 and FH3 had the highest similarity (99%) to that of *Fusarium* sp. FW2PhC1, *Fusarium* sp. 13002, *Fusarium* sp. 08006, *Fusarium equiseti* strain Salicorn 8 and Fungal sp. FCASAn-2. Media composition variation showed the effects of carbon nitrogen on protein concentration, where the decrement of 50% of media composition caused drastic decrease in protease of FH3 from 1.081 to 0.056 and also S13 from 2.946 to 0.198.

**Keywords:** Isolation, identification, fibrinolytic protease, endophytic fungi, Hibiscus leaves.

## ELECTROCHEMICAL PERFORMANCE OF CARBON NANOTUBE BASED SUPERCAPACITOR

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### **Abstract:**

Carbon nanotube is one of the most attractive materials for the potential applications of nanotechnology due to its excellent mechanical, thermal, electrical and optical properties. In this paper we report a supercapacitor made of nickel foil electrodes, coated with multiwall carbon nanotubes (MWCNTs) thin film using electrophoretic deposition (EPD) method. Chemical vapor deposition method was used for the growth of MWCNTs and ethanol was used as a hydrocarbon source. High graphitic multiwall carbon nanotube was found at 750oC analyzing by Raman spectroscopy. We observed the electrochemical performance of supercapacitor by cyclic voltammetry. The electrodes of supercapacitor fabricated from MWCNTs exhibit considerably small equivalent series resistance (ESR), and a high specific power density. Electrophoretic deposition is an easy method in fabricating MWCNT electrodes for high performance supercapacitor.

**Keywords:** Carbon nanotube, chemical vapor deposition, catalyst, charge, cyclic voltammetry.

## STATISTICAL MODELING FOR PERMEABILIZATION OF A NOVEL YEAST ISOLATE FOR B-GALACTOSIDASE ACTIVITY USING ORGANIC SOLVENTS

**Shweta Kumari, Parmjit S. Panesar, Manab B. Bera**

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### Abstract:

The hydrolysis of lactose using  $\beta$ -galactosidase is one of the most promising biotechnological applications, which has wide range of potential applications in food processing industries. However, due to intracellular location of the yeast enzyme, and expensive extraction methods, the industrial applications of enzymatic hydrolysis processes are being hampered. The use of permeabilization technique can help to overcome the problems associated with enzyme extraction and purification of yeast cells and to develop the economically viable process for the utilization of whole cell biocatalysts in food industries. In the present investigation, standardization of permeabilization process of novel yeast isolate was carried out using a statistical model approach known as Response Surface Methodology (RSM) to achieve maximal *b*-galactosidase activity. The optimum operating conditions for permeabilization process for optimal  $\beta$ -galactosidase activity obtained by RSM were 1:1 ratio of toluene (25%, v/v) and ethanol (50%, v/v), 25.0 °C temperature and treatment time of 12 min, which displayed enzyme activity of 1.71 IU /mg DW.

**Keywords:**  $\beta$ -galactosidase, optimization, permeabilization, response surface methodology, yeast.

## INFLUENCE OF THE FIELD TYPE (MOUNTAIN AND PLAIN) ON THE CUPRIC STATUS OF LAMBS

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Batna

### **Abstract:**

The study realized on alive lambs in two different areas mountain and plain in Batna region, aims to demonstrate the possible effect of field type on cupric status of lambs, through evaluation of copper contents in the chain: soil – plant – animal by atomic absorption spectrophotometry. This comparative study also allowed the investigation of the influence of the age and the season. The results obtained show that contents of copper in the soil, forage in the same way as in the plasma of lambs are higher in the plain than in the mountainous area; however, the difference is significant only between the values of feed.

**Keywords:** Copper, Forage, Lambs, Plasma copper.

## RENEWED URBAN WATERFRONT: SPATIAL CONDITIONS OF A CONTEMPORARY URBAN SPACE TYPOLOGY

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### **Abstract:**

The formerly industrially or militarily used Urban Waterfront is a potential area for urban development. Extensive interventions in the urban space come along with the development of these previously inaccessible areas in the city. The development of the Urban Waterfront in the European City is not subject to any recognizable urban paradigm. In this study, the development of the Urban Waterfront as a new urban space typology is analyzed by case studies of Urban Waterfront developments in European Cities. For humans, perceptible spatial conditions are categorized and it is identified whether the themed Urban Waterfront Developments are congruent or incongruent urban design interventions and which deviations the Urban Waterfront itself induce. As congruent urban design, a design is understood, which fits in the urban fabric regarding its similar spatial conditions to the surrounding. Incongruent urban design, however, shows significantly different conditions in its shape. Finally, the spatial relationship of the themed Urban Waterfront developments and their associated environment are compared in order to identify contrasts between new and old urban space. In this way, conclusions about urban design paradigms of the new urban space typology are tried to be drawn.

**Keywords:** Composition, congruence, identity, paradigm, spatial condition, urban design, urban development, urban waterfront.

## SEX DIFFERENCES IN THYROID GLAND STRUCTURE OF RABBITS

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### **Abstract:**

The aim of the present investigation was to compare sex differences in thyroid gland structure of rabbits. Five adult male and five adult female (3.1-3.5 kg body weight) New Zealand white rabbits were used in the experiment. Results showed that at light microscopic level, there was no sex difference in microscopic appearance of the thyroid glands. At electron microscopic level, however, the mitochondria and the microvilli of the follicular cells are more numerous and the Golgi complex is also more extensive in male rabbits in comparison to females. Results obtained from micrometric measurements showed that the volume density of the follicles is higher in males than in females, but the differences are not statistically significant. The volume density of epithelium and the height of follicular cells are significantly greater in males than in females and reverse is true about the volume density of interstitium ( $p < 0.05$ ). The volume density of colloid is also greater in females ( $66 \pm 6$ ) than in males ( $60 \pm 7$ ) but the differences are not statistically significant. It was concluded that sex has limited effects on histomorphometric properties of thyroid gland in rabbits.

**Keywords:** Rabbit, Thyroid Gland, Sex difference, Electron microscope

## **OLIVE LEAVES EXTRACT RESTORED THE ANTIOXIDANT PERTURBATIONS IN RED BLOOD CELLS HEMOLYSATE IN STREPTOZOTOCIN INDUCED DIABETIC RATS**

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Damanhour Univesity, Faculty of Veterinary medicine , Department of Biochemictry,Egypt

### **Abstract:**

Oxidative stress and overwhelming free radicals associated with diabetes mellitus are likely to be linked with development of certain complication such as retinopathy, nephropathy and neuropathy. Treatment of diabetic subjects with antioxidant may be of advantage in attenuating these complications. Olive leaf (*Olea europaea*), has been endowed with many beneficial and health promoting properties mostly linked to its antioxidant activity. This study aimed to evaluate the significance of supplementation of Olive leaves extract (OLE) in reducing oxidative stress, hyperglycemia and hyperlipidemia in Sterptozotocin (STZ)- induced diabetic rats. After induction of diabetes, a significant rise in plasma glucose, lipid profiles except High density lipoproteincholesterol (HDLc), malondialdehyde (MDA) and significant decrease of plasma insulin, HDLc and Plasma reduced glutathione GSH as well as alteration in enzymatic antioxidants was observed in all diabetic animals. During treatment of diabetic rats with 0.5g/kg body weight of Olive leaves extract (OLE) the levels of plasma (MDA) ,(GSH), insulin, lipid profiles along with blood glucose and erythrocyte enzymatic antioxidant enzymes were significantly restored to establish values that were not different from normal control rats. Untreated diabetic rats on the other hand demonstrated persistent alterations in the oxidative stress marker (MDA), blood glucose, insulin, lipid profiles and the antioxidant parameters. These results demonstrate that OLE may be of advantage in inhibiting hyperglycemia, hyperlipidemia and oxidative stress induced by diabetes and suggest that administration of OLE may be helpful in the prevention or at least reduced of diabetic complications associated with oxidative stress.

**Keywords:** Diabetes mellitus, olive leaves, oxidative stress, red blood cells



## **THE EFFECTS OF GARLIC OIL (*ALLIUM SATIVA*), TURMERIC POWDER (*CURCUMA LONGA LINN*) AND MONENSIN ON TOTAL APPARENT DIGESTIBILITY OF NUTRIENTS IN BALOOCHI LAMBS**

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### **Abstract:**

The objective of this study was to determine the effects of garlic oil (*Allium sativa*), turmeric powder (*Curcuma longa* Linn) and Monensin on Total apparent digestibility of nutrients in Baloochi lambs. The experiment was designed as a 4 x 4 Latin square using 4 ruminally baloochi lambs with 4 treatments in four 28-d periods. Treatments were control (no additive), garlic oil (0.4 g/d), monensin (0.2 g/d) and turmeric powder (20 g/d). Total apparent digestibility's (% of intake) of organic matter (OM), dry matter (DM), crud protein (CP), ether extract (EE), non fiber carbohydrate (NFC), acid detergent fiber (ADF) and neutral detergent fiber (NDF) in the total tract were not influenced by addition of either additives.

**Keywords:** apparent digestibility, essential oil, garlic oil, monensin, turmeric

## THE EFFECT OF SELECTIVE CYCLOOXYGENASE (COX) INHIBITORS ON JAPANESE MEDAKA (*ORYZIAS LATIPES*) REPRODUCTION PARAMETERS

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Animal Reproduction and Food Research, Polish Academy of Sciences in Olsztyn, Poland  
Department of Aquaculture The Stanisław Sakowicz Inland Fisheries Institute, Poland

### **Abstract:**

Our results showed that treatment with both cyclooxygenase (COX1 or COX2) inhibitors impair reproduction parameters of the medaka. Resveratrol (COX1 inhibitor) caused a decrease in the number of spawning females at the first week of feeding fish with experimental diets. In the group treated with NS- 398 (COX2 inhibitor) we found the lowest sperm velocity parameters and decreased linearity of movement. The ovaries of the medaka fed feed supplemented with Resveratrol or NS-398 were confirmed to have a lower share of matured oocytes however during the experiment (four weeks) the number of eggs spawned by females was similar. Both inhibitors in fish diet (20 mg/kg body weight/day) caused a decrease in the embryo survival. Our results revealed that for the medaka female reproduction, activity of both COX enzymes might be necessary whereas males reproduction competence, as expressed by sperm motility parameters, might be related to COX2 activity.

**Keywords:** COX inhibitors, medaka, reproduction parameters

## THE RELATIONSHIP BETWEEN EXCRETA VISCOSITY AND TMEN IN SBM

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### Abstract:

The experiment was performed to study the relationship between excreta viscosity and Nitrogen-corrected true metabolisable energy quantities of soybean meals using conventional addition method (CAM) in adult cockerels for 7 d: a 3-d preexperiment and a 4-d experiment period. Results indicated that differences between the excreta viscosity values were ( $P<0.01$ ) significant for SBMs. The excreta viscosity values were less ( $P<0.01$ ) for SBMs 6, 2, 8, 1 and 3 than other SBMs. The mean TMEn (kcal/kg) values were significant ( $P<0.01$ ) between SBMs. The most TMEn values were ( $P<0.01$ ) for SBMs 6, 2, 8 and 1, also the lowest TMEn values were ( $P<0.01$ ) for SBMs 3, 7, 4, 9 and 5. There was a reverse linear relationship between the values of excreta viscosity and TMEn in SBMs. In conclusion, there was a reverse linear relationship between the values of excreta viscosity and TMEn in SBMs probably due to their various soluble NSPs.

**Keywords:** soybean meals (SBMs), Nitrogen-corrected true metabolisable energy (TMEn), viscosity

## PRAGATI NODE POPULARITY (PNP) APPROACH TO IDENTIFY CONGESTION HOT SPOTS IN MPLS

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### Abstract:

In large Internet backbones, Service Providers typically have to explicitly manage the traffic flows in order to optimize the use of network resources. This process is often referred to as Traffic Engineering (TE). Common objectives of traffic engineering include balance traffic distribution across the network and avoiding congestion hot spots. Raj P H and SVK Raja designed the Bayesian network approach to identify congestion hot spots in MPLS. In this approach for every node in the network the Conditional Probability Distribution (CPD) is specified. Based on the CPD the congestion hot spots are identified. Then the traffic can be distributed so that no link in the network is either over utilized or under utilized. Although the Bayesian network approach has been implemented in operational networks, it has a number of well known scaling issues. This paper proposes a new approach, which we call the Pragati (means Progress) Node Popularity (PNP) approach to identify the congestion hot spots with the network topology alone. In the new Pragati Node Popularity approach, IP routing runs natively over the physical topology rather than depending on the CPD of each node as in Bayesian network. We first illustrate our approach with a simple network, then present a formal analysis of the Pragati Node Popularity approach. Our PNP approach shows that for any given network of Bayesian approach, it exactly identifies the same result with minimum efforts. We further extend the result to a more generic one: for any network topology and even though the network is loopy. A theoretical insight of our result is that the optimal routing is always shortest path routing with respect to some considerations of hot spots in the networks.

**Keywords:** Conditional Probability Distribution, Congestion hotspots, Operational Networks, Traffic Engineering.

## EFFECT OF L-ARGININE ON NEUROMUSCULAR TRANSMISSION OF THE CHICK BIVENTER CERVICIS MUSCLE

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### **Abstract:**

In this study, the effect of L-arginine was examined at the neuromuscular junction of the chick biventer cervicis muscle. L-Arginine at 500  $\mu\text{g}/\text{ml}$ , decreased twitch response to electrical stimulation, and produced rightward shift of the dose-response curve for acetylcholine or carbachol. L-Arginine at 1000 $\mu\text{g}/\text{ml}$  produced a strong shift to the right of the dose-response curve for acetylcholine or carbachol with a reduction in the efficacy. The inhibitory effect of L-arginine on the twitch response was blocked by caffeine (200 $\mu\text{g}/\text{ml}$ ). NO levels were also measured in the chick biventer cervicis muscle homogenates, using spectrophotometric method for the direct detection of NO, nitrite and nitrate. Total nitrite (nitrite + nitrate) was measured by a spectrophotometer at 540 nm after the conversion of nitrate to nitrite by copperized cadmium granules. NO levels were found to be significantly increased in concentrations 500 and 1000 $\mu\text{g}/\text{ml}$  of L-arginine in comparison with the control group ( $p < 0.001$ ). These findings indicate a possible role of increased NO levels in the suppressive action of L-arginine on the twitch response. In addition, the results indicate that the post-junctional antagonistic action of L-arginine is probably the result of impaired sarcoplasmic reticulum (SR)  $\text{Ca}^{2+}$  releases.

**Keywords:** Chick, L-Arginine, Nitric Oxide, Skeletal muscle.

## TO DESIGN HOLISTIC HEALTH SERVICE SYSTEMS ON THE INTERNET

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### Abstract:

There are different kinds of online systems on the Internet for people who need support and develop new knowledge. Online communities and Ask the Expert systems are two such systems. In the health care area, the number of users of these systems has increased at a rapid pace. Interactions with medical trained experts take place online, and people with concerns about similar health problems come together to share experiences and advice. The systems are also used as storages and browsed for health information. Over the years, studies have been conducted of the usage of the different systems. However, in what ways the systems can be used together to enhance learning has not been explored. This paper presents results from a study of online health-communities and an Ask the Expert system for people who suffer from overweight. Differences and similarities in regards to posted issues and replies are discussed, and suggestions for a new holistic design of the two systems are presented.

**Keywords:** Learning, Ask the Expert, online community, healthcare, holistic, overweight.

## PERVASIVE COMPUTING IN HEALTHCARE SYSTEMS

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### Abstract:

The hospital and the health-care center of a community, as a place for people-s life-care and health-care settings, must provide more and better services for patients or residents. After Establishing Electronic Medical Record (EMR) system -which is a necessity- in the hospital, providing pervasive services is a further step. Our objective in this paper is to use pervasive computing in a case study of healthcare, based on EMR database that coordinates application services over network to form a service environment for medical and health-care. Our method also categorizes the hospital spaces into 3 spaces: Public spaces, Private spaces and Isolated spaces. Although, there are many projects about using pervasive computing in healthcare, but all of them concentrate on the disease recognition, designing smart cloths, or provide services only for patient. The proposed method is implemented in a hospital. The obtained results show that it is suitable for our purpose.

**Keywords:** Pervasive computing, RFID, Health-care.

## SECURITY ARCHITECTURE FOR AT-HOME MEDICAL CARE USING SENSOR NETWORK

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Rajalakshmi Engineering College, Anna University, Chennai, India.

### Abstract

This paper proposes a novel architecture for At- Home medical care which enables senior citizens, patients with chronic ailments and patients requiring post- operative care to be remotely monitored in the comfort of their homes. This architecture is implemented using sensors and wireless networking for transmitting patient data to the hospitals, health- care centers for monitoring by medical professionals. Patients are equipped with sensors to measure their physiological parameters, like blood pressure, pulse rate etc. and a Wearable Data Acquisition Unit is used to transmit the patient sensor data. Medical professionals can be alerted to any abnormal variations in these values for diagnosis and suitable treatment. Security threats and challenges inherent to wireless communication and sensor network have been discussed and a security mechanism to ensure data confidentiality and source authentication has been proposed. Symmetric key algorithm AES has been used for encrypting the data and a patent-free, two-pass block cipher mode CCFB has been used for implementing semantic security.

**Keywords:** data confidentiality, integrity, remotemonitoring, source authentication



## **EXPLORING THE APPLICATION OF KNOWLEDGE MANAGEMENT FACTORS IN ESFAHAN UNIVERSITY'S MEDICAL COLLEGE**

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### **Abstract:**

In this competitive age, one of the key tools of most successful organizations is knowledge management. Today some organizations measure their current knowledge and use it as an indicator for rating the organization on their reports. Noting that the universities and colleges of medical science have a great role in public health of societies, their access to newest scientific research and the establishment of organizational knowledge management systems is very important. In order to explore the Application of Knowledge Management Factors, a national study was undertaken. The main purpose of this study was to find the rate of the application of knowledge management factors and some ways to establish more application of knowledge management system in Esfahan University-s Medical College (EUMC). Esfahan is the second largest city after Tehran, the capital city of Iran, and the EUMC is the biggest medical college in Esfahan. To rate the application of knowledge management, this study uses a quantitative research methodology based on Probst, Raub and Romhardt model of knowledge management. A group of 267 faculty members and staff of the EUMC were asked via questionnaire. Finding showed that the rate of the application of knowledge management factors in EUMC have been lower than average. As a result, an interview with ten faculty members conducted to find the guidelines to establish more applications of knowledge management system in EUMC.

**Keywords:** Knowledge, knowledge management, knowledge management factors.

## ON THE ANALYSIS OF A COMPOUND NEURAL NETWORK FOR DETECTING ATRIO VENTRICULAR HEART BLOCK (AVB) IN AN ECG SIGNAL

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### **Abstract:**

Heart failure is the most common reason of death nowadays, but if the medical help is given directly, the patient's life may be saved in many cases. Numerous heart diseases can be detected by means of analyzing electrocardiograms (ECG). Artificial Neural Networks (ANN) are computer-based expert systems that have proved to be useful in pattern recognition tasks. ANN can be used in different phases of the decision-making process, from classification to diagnostic procedures. This work concentrates on a review followed by a novel method. The purpose of the review is to assess the evidence of healthcare benefits involving the application of artificial neural networks to the clinical functions of diagnosis, prognosis and survival analysis, in ECG signals. The developed method is based on a compound neural network (CNN), to classify ECGs as normal or carrying an AtrioVentricular heart Block (AVB). This method uses three different feed forward multilayer neural networks. A single output unit encodes the probability of AVB occurrences. A value between 0 and 0.1 is the desired output for a normal ECG; a value between 0.1 and 1 would infer an occurrence of an AVB. The results show that this compound network has a good performance in detecting AVBs, with a sensitivity of 90.7% and a specificity of 86.05%. The accuracy value is 87.9%.

**Keywords:** Artificial neural networks, Electrocardiogram(ECG), Feed forward multilayer neural network, Medical diagnosis, Pattern recognition, Signal processing.

## NEUROGENIC POTENTIAL OF CLITORIA TERNATEA AQUEOUS ROOT EXTRACT–A BASIS FOR ENHANCING LEARNING AND MEMORY

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### **Abstract:**

The neurogenic potential of many herbal extracts used in Indian medicine is hitherto unknown. Extracts derived from *Clitoria ternatea* Linn have been used in Indian Ayurvedic system of medicine as an ingredient of “Medhya rasayana”, consumed for improving memory and longevity in humans and also in treatment of various neurological disorders. Our earlier experimental studies with oral intubation of *Clitoria ternatea* aqueous root extract (CTR) had shown significant enhancement of learning and memory in postnatal and young adult Wistar rats. The present study was designed to elucidate the *in vitro* effects of 200ng/ml of CTR on proliferation, differentiation and growth of anterior subventricular zone neural stem cells (aSVZ NSC-s) derived from prenatal and postnatal rat pups. Results show significant increase in proliferation and growth of neurospheres and increase in the yield of differentiated neurons of aSVZ neural precursor cells (aSVZNPC-s) at 7 days *in vitro* when treated with 200ng/ml of CTR as compared to age matched control. Results indicate that CTR has growth promoting neurogenic effect on aSVZ neural stem cells and their survival similar to neurotrophic factors like Survivin, Neuregulin 1, FGF-2, BDNF possibly the basis for enhanced learning and memory.

**Keywords:** Anterior subventricular zone (aSVZ) neural stemcell, *Clitoria ternatea*, Learning and memory, Neurogenesis.

## VALIDATION AND APPLICATION OF A NEW OPTIMIZED RP-HPLC-FLUORESCENT DETECTION METHOD FOR NORFLOXACIN

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### **Abstract:**

A new reverse phase-high performance liquid chromatography (RP-HPLC) method with fluorescent detector (FLD) was developed and optimized for Norfloxacin determination in human plasma. Mobile phase specifications, extraction method and excitation and emission wavelengths were varied for optimization. HPLC system contained a reverse phase C18 (5  $\mu$ m, 4.6 mm $\times$ 150 mm) column with FLD operated at excitation 330 nm and emission 440 nm. The optimized mobile phase consisted of 14% acetonitrile in buffer solution. The aqueous phase was prepared by mixing 2g of citric acid, 2g sodium acetate and 1 ml of triethylamine in 1 L of Milli-Q water was run at a flow rate of 1.2 mL/min. The standard curve was linear for the range tested (0.156–20  $\mu$ g/mL) and the coefficient of determination was 0.9978. Aceclofenac sodium was used as internal standard. A detection limit of 0.078  $\mu$ g/mL was achieved. Run time was set at 10 minutes because retention time of norfloxacin was 0.99 min. which shows the rapidness of this method of analysis. The present assay showed good accuracy, precision and sensitivity for Norfloxacin determination in human plasma with a new internal standard and can be applied pharmacokinetic evaluation of Norfloxacin tablets after oral administration in human.

**Keywords:** Norfloxacin, Aceclofenac sodium, Method optimization, RP-HPLC method, Fluorescent detection, Calibration curve.

## FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS

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Faculty of Pharmaceutical Sciences, Prince of Songkla University, Thailand

### **Abstract:**

The objective of this study was to develop vaginal suppository containing lactobacillus. Four kinds of vaginal suppositories containing *Lactobacillus paracasei* HL32 were formulated: 1) a conventional suppository with Witepsol H-15 as a base, 2) a conventional suppository with mixed polyethylene glycols (PEGs) as a base, 3) a hollow-type suppository with Witepsol H-15 as a base and 4) a hollow-type suppository with mixed PEGs as a base. The release studies demonstrated that the hollow-type suppository with mixed PEGs as the base gave the highest release of *L. paracasei* HL32 and was microbiological stable after storage at 2- 8°C over the period of 3 months.

**Keywords:** *Lactobacillus paracasei* HL32, vaginal suppository, release study, hollow-type, viability.

## EVALUATION OF SHEAR STRENGTH PARAMETERS OF AMENDED LOESS THROUGH USING COMMON ADMIXTURES IN GORGAN, IRAN

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### Abstract:

Non-saturated soils that while saturation greatly decrease their volume, have sudden settlement due to increasing humidity, fracture and structural crack are called loess soils. Whereas importance of civil projects including: dams, canals and constructions bearing this type of soil and thereof problems, it is required for carrying out more research and study in relation to loess soils. This research studies shear strength parameters by using grading test, Atterberg limit, compression, direct shear and consolidation and then effect of using cement and lime additives on stability of loess soils is studied. In related tests, lime and cement are separately added to mixed ratios under different percentages of soil and for different times the stabilized samples are processed and effect of aforesaid additives on shear strength parameters of soil is studied. Results show that upon passing time the effect of additives and collapsible potential is greatly decreased and upon increasing percentage of cement and lime the maximum dry density is decreased; however, optimum humidity is increased. In addition, liquid limit and plastic index is decreased; however, plastic index limit is increased. It is to be noted that results of direct shear test reveal increasing shear strength of soil due to increasing cohesion parameter and soil friction angle.

**Keywords:** Loess Soils, Shear Strength, Cement, Lime.

## A STUDY ON THE DEVELOPING METHOD OF THE BIM (BUILDING INFORMATION MODELING) SOFTWARE BASED ON CLOUD COMPUTING ENVIRONMENT

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### Abstract:

According as the Architecture, Engineering and Construction (AEC) Industry projects have grown more complex and larger, the number of utilization of BIM for 3D design and simulation is increasing significantly. Therefore, typical applications of BIM such as clash detection and alternative measures based on 3-dimensional planning are expanded to process management, cost and quantity management, structural analysis, check for regulation, and various domains for virtual design and construction. Presently, commercial BIM software is operated on single-user environment, so initial cost is so high and the investment may be wasted frequently. Cloud computing that is a next-generation internet technology enables simple internet devices (such as PC, Tablet, Smart phone etc) to use services and resources of BIM software. In this paper, we suggested developing method of the BIM software based on cloud computing environment in order to expand utilization of BIM and reduce cost of BIM software. First, for the benchmarking, we surveyed successful case of BIM and cloud computing. And we analyzed needs and opportunities of BIM and cloud computing in AEC Industry. Finally, we suggested main functions of BIM software based on cloud computing environment and developed a simple prototype of cloud computing BIM software for basic BIM model viewing.

**Keywords:** Construction IT, BIM(Building Information Modeling), Cloud Computing, BIM Service Based Cloud Computing, Viewer Based BIM Server, 3D Design.

# **SIMULATION AND PARAMETERIZATION BY THE FINITE ELEMENT METHOD OF A C SHAPE DELECTROMAGNET FOR APPLICATION IN THE CHARACTERIZATION OF MAGNETIC PROPERTIES OF MATERIALS**

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## **Abstract:**

This article presents the simulation, parameterization and optimization of an electromagnet with the C-shaped configuration, intended for the study of magnetic properties of materials. The electromagnet studied consists of a C-shaped yoke, which provides self-shielding for minimizing losses of magnetic flux density, two poles of high magnetic permeability and power coils wound on the poles. The main physical variable studied was the static magnetic flux density in a column within the gap between the poles, with 4cm<sup>2</sup> of square cross section and a length of 5cm, seeking a suitable set of parameters that allow us to achieve a uniform magnetic flux density of 1x10<sup>4</sup> Gauss values above this in the column, when the system operates at room temperature and with a current consumption not exceeding 5A. By means of a magnetostatic analysis by the finite element method, the magnetic flux density and the distribution of the magnetic field lines were visualized and quantified. From the results obtained by simulating an initial configuration of electromagnet, a structural optimization of the geometry of the adjustable caps for the ends of the poles was performed. The magnetic permeability effect of the soft magnetic materials used in the poles system, such as low-carbon steel (0.08% C), Permalloy (45% Ni, 54.7% Fe) and Mumetal (21.2% Fe, 78.5% Ni), was also evaluated. The intensity and uniformity of the magnetic field in the gap showed a high dependence with the factors described above. The magnetic field achieved in the column was uniform and its magnitude ranged between 1.5x10<sup>4</sup> Gauss and 1.9x10<sup>4</sup> Gauss according to the material of the pole used, with the possibility of increasing the magnetic field by choosing a suitable geometry of the cap, introducing a cooling system for the coils and adjusting the spacing between the poles. This makes the device a versatile and scalable tool to generate the magnetic field necessary to perform magnetic characterization of materials by techniques such as vibrating sample magnetometry (VSM), Hall-effect, Kerr-effect magnetometry, among others. Additionally, a CAD design of the modules of the electromagnet is presented in order to facilitate the construction and scaling of the physical device.

**Keywords:** Electromagnet, Finite Elements Method, Magnetostatic, Magnetometry, Modeling.



## CULTURAL ASPECTS ANALYSES IN SUSTAINABLE ARCHITECTURE

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### Abstract:

Social ideology, cultural values and principles shaping environment are inferred by environment and structural characteristics of construction site. In other words, this inference manifestation also indicates ideology and culture of its foundation and also applies its principles and values and somehow plays an important role in Cultural Revolution. All human behaviors and artifacts are affected and being influenced by culture. Culture is not abstract concept, it is a spiritual domain that an individual and society grow and develop in it. Social behaviors are affected by environmental comprehension, so the architecture work influences on its audience and it is the environment that fosters social behaviors. Indeed, sustainable architecture should be considered as background of culture for establishing optimal sustainable culture. Since unidentified architecture roots in cultural non identity and abnormalities, so the society possesses identity characteristics and life and as a consequence, the society and architecture are changed by transformation of life style. This article aims to investigate the interaction of architecture, society, environment and sustainable architecture formation in its cultural basis and analyzes the results approaching behavior and sustainable culture in recent era.

**Keywords:** Culture, Sustainable Architecture, Environment, Development

## CONVECTION THROUGH LIGHT WEIGHT TIMBER CONSTRUCTIONS WITH MINERAL WOOL

J. Schmidt, O. Kornadt

### Abstract:

The major part of light weight timber constructions consists of insulation. Mineral wool is the most commonly used insulation due to its cost efficiency and easy handling. The fiber orientation and porosity of this insulation material enables flowthrough. The air flow resistance is low. If leakage occurs in the insulated bay section, the convective flow may cause energy losses and infiltration of the exterior wall with moisture and particles. In particular the infiltrated moisture may lead to thermal bridges and growth of health endangering mould and mildew. In order to prevent this problem, different numerical calculation models have been developed. All models developed so far have a potential for completion. The implementation of the flow-through properties of mineral wool insulation may help to improve the existing models. Assuming that the real pressure difference between interior and exterior surface is larger than the prescribed pressure difference in the standard test procedure for mineral wool ISO 9053 / EN 29053, measurements were performed using the measurement setup for research on convective moisture transfer "MSRCMT". These measurements show, that structural inhomogeneities of mineral wool effect the permeability only at higher pressure differences, as applied in MSRCMT. Additional microscopic investigations show, that the location of a leak within the construction has a crucial influence on the air flow-through and the infiltration rate. The results clearly indicate that the empirical values for the acoustic resistance of mineral wool should not be used for the calculation of convective transfer mechanisms.

**Keywords:** convection, convective transfer, infiltration, mineralwool, permeability, resistance, leakage

## THE ESTABLISHMENT OF CAUSE-SYSTEM OF POOR CONSTRUCTION SITE SAFETY AND PRIORITY ANALYSIS FROM DIFFERENT PERSPECTIVES

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### Abstract:

Construction site safety in China has aroused comprehensive concern all over the world. It is imperative to investigate the main causes of poor construction site safety. This paper divides all the causes into four aspects, namely the factors of workers, object, environment and management and sets up the accident causes element system based on Delphi Method. This is followed by the application of structural equation modeling to examine the importance of each aspect of causes from the standpoints of different roles related to the construction respectively. The results indicate that all the four aspects of factors are in need of improvement, and different roles have different ideas considering the priority of those factors. The paper has instructive significance for the practitioners to take measures to improve construction site safety in China accordingly.

**Keywords:** construction site safety, Delphi Method, structuralequation modeling, different perspective.

## STABILITY OPTIMIZATION OF FUNCTIONALLY GRADED PIPES CONVEYING FLUID

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### Abstract:

This paper presents an exact analytical model for optimizing stability of thin-walled, composite, functionally graded pipes conveying fluid. The critical flow velocity at which divergence occurs is maximized for a specified total structural mass in order to ensure the economic feasibility of the attained optimum designs. The composition of the material of construction is optimized by defining the spatial distribution of volume fractions of the material constituents using piecewise variations along the pipe length. The major aim is to tailor the material distribution in the axial direction so as to avoid the occurrence of divergence instability without the penalty of increasing structural mass. Three types of boundary conditions have been examined; namely, Hinged-Hinged, Clamped- Hinged and Clamped-Clamped pipelines. The resulting optimization problem has been formulated as a nonlinear mathematical programming problem solved by invoking the MatLab optimization toolbox routines, which implement constrained function minimization routine named "fmincon" interacting with the associated eigenvalue problem routines. In fact, the proposed mathematical models have succeeded in maximizing the critical flow velocity without mass penalty and producing efficient and economic designs having enhanced stability characteristics as compared with the baseline designs.

**Keywords:** Functionally graded materials, pipe flow, optimumdesign, fluid- structure interaction

## OPTIMUM DESIGN OF LAUNCHING NOSE DURING INCREMENTAL LAUNCHING CONSTRUCTION OF SAME-SPAN CONTINUOUS BRIDGE

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### Abstract:

The launching nose plays an important role in the incremental launching construction. The parameters of the launching nose essentially affect the internal forces of the girder during the construction. The appropriate parameters can decrease the internal forces in the girder and save the material and reduce the cost. The simplified structural model, which is made with displacement method according to the characteristic of incremental launching construction and the variation rule of the internal forces, calculates and analyzes the effect of the length, the rigidity and weight of launch nose on the internal forces of girder during the incremental launching construction. The method, which can calculate the launching nose parameters for the optimum incremental launching construction, is achieved. This method is simple, reliable and easy for practical use.

**Keywords:** incremental launching, launching nose, optimum analysis, displacement method

## APPLICATION OF “STREAMLINED” MATERIAL ACCOUNTING TO ESTIMATE ENVIRONMENTAL IMPACT

Paul Osmond

### Abstract:

This paper reports a new application of material accounting techniques to characterise and quantify material stocks and flows at the “neighbourhood” scale. The study area is the main campus of the University of New South Wales in Sydney, Australia. The system boundary is defined by the urban structural unit (USU), a typological construct devised to facilitate assessment of the metabolism of urban systems. A streamlined material flow analysis (MFA) was applied to quantify the stocks and flows of key construction materials within the campus USU over time, drawing on empirical data from a major campus development project. The results are reviewed to assess the efficacy of the method in supporting urban environmental evaluation and design practice, for example to facilitate estimation of significant impacts such as greenhouse gas emissions. It is concluded that linking a service (in this case, teaching students) enabled by a given product (university buildings) to the amount of materials used in creating that product offers a potential way to reduce the environmental impact of that service, through more efficient use of materials.

**Keywords:** Construction materials, material flow analysis, urban metabolism, urban structural unit.

## SPRINGBACK SIMULATIONS OF MONOLITHIC AND LAYERED STEELS USED FOR PRESSURE EQUIPMENT

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Dr. H. K. Raval is Professor in engineering at S. V. National Institute of Technology, Surat 395007, Gujarat, INDIA.

### **Abstract:**

Carbon steel is used in boilers, pressure vessels, heat exchangers, piping, structural elements and other moderate temperature service systems in which good strength and ductility are desired. ASME Boiler and Pressure Vessel Code, Section II Part A (2004) provides specifications of ferrous materials for construction of pressure equipment, covering wide range of mechanical properties including high strength materials for power plants application. However, increased level of springback is one of the major problems in fabricating components of high strength steel using bending. Presented work discuss the springback simulations for five different steels (i.e. SA-36, SA-299, SA-515 grade 70, SA-612 and SA-724 grade B) using finite element analysis of air V-bending. Analytical springback simulations of hypothetical layered materials are presented. Result shows that; (i) combination of the material property parameters controls the springback, (ii) layer of the high ductility steel on the high strength steel greatly suppresses the springback.

**Keywords:** Carbon steel, Finite element analysis, Layered material, Springback

## EVALUATION OF URBAN LAND DEVELOPMENT DIRECTION IN KABUL CITY, AFGHANISTAN

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Associate professor, Department of Civil Engineering, Faculty of Engineering, Tokai  
University, Japan

### **Abstract:**

Kabul, the capital and largest city in Afghanistan has been experiencing a massive population expansion and fast economic development in last decade, in which urban land has increasingly expanded and formed a high informal development territory in the city. This paper investigates the urban land development direction based on the integrated urbanization trends in Kabul city since the last and the fastest ever urban land growth period (1999-2008), which is parallel with the establishment of the new government in Afghanistan. Considering the existing challenges in terms of informal settlements, squatter settlements, the population expansion of the city, and fast economic development, as well as the huge influx of returning refugees from neighboring countries, and the sprawl direction of urbanization of the Kabul city urban fringes, this research focuses on the possible urban land development direction and trends for the city. The paper studies the feasible future land development direction of Kabul city in the northern part called Shamali basin, in which district 17 is the gateway for future development. The area has much developable area including eight districts of Kabul province, and the vast area of Parwan and Kapisa provinces. The northern area of the Kabul city generally has favorable conditions for further urbanization from the city. It is a large and relatively flat area of area in the northern part of Kabul city, with ample water resources available from the Panjshir basin as a base principle of land development direction in the area.

**Keywords:** Kabul city, land development trends, urban land development, urbanization.



## **INFLUENCE OF PLACE IDENTITY ON WALKABILITY: A COMPARATIVE STUDY BETWEEN TWO MIXED USED STREETS CHAHARBAGH ST. ISFAHAN, IRAN AND DEREBOYU ST. LEFKOSA, NORTH CYPRUS**

R. Rafiemanzelat

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Mediterranean University, Famagusta, North Cyprus

### **Abstract:**

One of the most recent fields of investigation in urban issues focuses on the walkability in urban spaces. Considering the importance of walkability apart from pedestrian transportation, increasing walkability will help to reduce the congestion and environmental impact. This subject also matters as it has a social life, experiential quality and economical sustainability value. This study focused on the effects of walkability and place identity on each other in urban public spaces, streets in particular, as a major indicator of their success. The theoretical aspects which examine for this purpose consist of two parts: The first will evaluate the essential components of place identity in the streets and the second one will discuss the concept of walkability and its development theories which have been derived from walkable spaces. Finally, research investigates place identity and walkability and their determinants in two major streets in different cities. The streets are Chaharbagh Street in Isfahan/Iran and Dereboyu Street in Lefkosa/North Cyprus. This study has a qualitative approach with the research method of walkability studies. The qualitative method is combined with the collection of data relating to walking behavior and place identity through an observational field study. The result will show a relationship between pedestrian-friendly spaces and identity by related variables which has obtained.

**Keywords:** Place identity, walkability, urban public space, streets, pedestrian-friendly.

## RENEWED URBAN WATERFRONT: SPATIAL CONDITIONS OF A CONTEMPORARY URBAN SPACE TYPOLOGY

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### Abstract:

The formerly industrially or militarily used Urban Waterfront is a potential area for urban development. Extensive interventions in the urban space come along with the development of these previously inaccessible areas in the city. The development of the Urban Waterfront in the European City is not subject to any recognizable urban paradigm. In this study, the development of the Urban Waterfront as a new urban space typology is analyzed by case studies of Urban Waterfront developments in European Cities. For humans, perceptible spatial conditions are categorized and it is identified whether the themed Urban Waterfront Developments are congruent or incongruent urban design interventions and which deviations the Urban Waterfront itself induce. As congruent urban design, a design is understood, which fits in the urban fabric regarding its similar spatial conditions to the surrounding. Incongruent urban design, however, shows significantly different conditions in its shape. Finally, the spatial relationship of the themed Urban Waterfront developments and their associated environment are compared in order to identify contrasts between new and old urban space. In this way, conclusions about urban design paradigms of the new urban space typology are tried to be drawn.

**Keywords:** Composition, congruence, identity, paradigm, spatial condition, urban design, urban development, urban waterfront.

## URBAN ECOLOGICAL INTERACTION: AIR, WATER, LIGHT AND NEW TRANSIT AT THE HUMAN SCALE OF BARCELONA'S SUPERILLES

Philip Speranza

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### Abstract:

As everyday transit options are shifting from autocentric to pedestrian and bicycle oriented modes for healthy living, downtown streets are becoming more attractive places to live. However, tools and methods to measure the natural environment at the small scale of streets do not exist. Fortunately, a combination of mobile data collection technology and parametric urban design software now allows an interface to relate urban ecological conditions. This paper describes creation of an interactive tool to measure urban phenomena of air, water, and heat/light at the scale of new three-by-three block pedestrianized areas in Barcelona called Superilles. Each Superilla limits transit to the exterior of the blocks and to create more walkable and bikeable interior streets for healthy living. The research will describe the integration of data collection, analysis, and design output via a live interface using parametric software Rhino Grasshopper and the Human User Interface (UI) plugin.

**Keywords:** Transit, urban design, GIS, parametric design, Superilles, Barcelona, urban ecology.

## PERFORMANCE EVALUATION OF A ‘PRIORITY-CONTROLLED’ INTERSECTION CONVERTED TO SIGNAL-CONTROLLED INTERSECTION

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### Abstract:

There is a call to ensure that the issues of safety and efficient throughput are considered during design; the solutions to these issues can also be retrofitted at locations where they were not captured during design, but have become problems to road users over time. This paper adopts several methods to analyze the performance of an intersection which was formerly a ‘priority-controlled’ intersection, but has now been converted to a ‘signal-controlled’ intersection. Extensive review of literature helped form the basis for result analysis and discussion. The Ikot-Ekpene/Anagha-Ezikpe intersection, located at the heart of Umuahia was adopted as case study; considering the high traffic volume on the route. Anecdotal evidence revealed that traffic signals imposed enormous delays at the intersection, especially for traffic on the major road. The major road has arrival flow which surpasses the saturation flow obtained from modelling of the isolated signalized intersection. Similarly, there were several geometric elements that did not agree with the specific function of the road. A roundabout, particularly flower roundabout was recommended as a better traffic control measure.

**Keywords:** Highway function, level of service, roundabout, traffic delays, Umuahia.

## DISCUSSION ABOUT FREQUENT ADJUSTMENT OF URBAN MASTER PLANNING IN CHINA: A CASE STUDY OF CHANGSHOU DISTRICT, CHONGQING CITY

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### Abstract:

Since the reform and opening, the urbanization process of China has entered a rapid development period. In recent years, the authors participated in some projects of urban master planning in China and found a phenomenon that the rapid urbanization area of China is experiencing frequent adjustment process of urban master planning. This phenomenon is not the natural process of urbanization development. It may be caused by different government roles from different levels. Through the methods of investigation, data comparison and case study, this paper aims to explore the reason why the rapid urbanization area is experiencing frequent adjustment of master planning and give some solution strategies. Firstly, taking Changshou district of Chongqing city as an example, this paper wants to introduce the phenomenon about frequent adjustment process in China. And then, discuss distinct roles in the process between national government, provincial government and local government of China. At last, put forward preliminary solutions strategies for this area in China from the aspects of land use, intergovernmental cooperation and so on.

**Keywords:** Urban master planning, frequent adjustment, urbanization development, problems and strategies, China.

## HYBRID LIVING: EMERGING OUT OF THE CRISES AND DIVISIONS

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Yiorgos Hadjichristou

### Abstract:

The paper will focus on the hybrid living typologies which are brought about due to the Global Crisis. Mixing of the generations and the groups of people, mingling the functions of living with working and socializing, merging the act of living in synergy with the urban realm and its constituent elements will be the springboard of proposing an essential sustainable housing approach and the respective urban development. The thematic will be based on methodologies developed both on the academic, educational environment including participation of students' research and on the practical aspect of architecture including case studies executed by the author in the island of Cyprus. Both paths of the research will deal with the explorative understanding of the hybrid ways of living, testing the limits of its autonomy. The evolution of the living typologies into substantial hybrid entities, will deal with the understanding of new ways of living which include among others: re-introduction of natural phenomena, accommodation of the activity of work and services in the living realm, interchange of public and private, injections of communal events into the individual living territories. The issues and the binary questions raised by what is natural and artificial, what is private and what public, what is ephemeral and what permanent and all the in-between conditions are eloquently traced in the everyday life in the island. Additionally, given the situation of Cyprus with the eminent scar of the dividing 'Green line' and the waiting of the 'ghost city' of Famagusta to be resurrected, the conventional way of understanding the limits and the definitions of the properties is irreversibly shaken. The situation is further aggravated by the unprecedented phenomenon of the crisis on the island. All these observations set the premises of reexamining the urban development and the respective sustainable housing in a synergy where their characteristics start exchanging positions, merge into each other, temporarily emerge and vanish, changing from permanent to ephemeral. This fluidity of conditions will attempt to render a future of the built- and unbuilt realm where the main focusing point will be redirected to the human and the social. Weather and social ritual scenographies together with 'spontaneous urban landscapes' of 'momentary relationships' will suggest a recipe for emerging urban environments and sustainable living. Thus, the paper will aim at opening a discourse on the future of the sustainable living merged in a sustainable urban development in relation to the imminent solution of the division of island, where the issue of property became the main obstacle to be overcome. At the same time, it will attempt to link this approach to the global need for a sustainable evolution of the urban and living realms.

**Keywords:** Social ritual scenographies, spontaneous urban landscapes, substantial hybrid entities, re-introduction of natural phenomena.

## EFFECTS OF URBANIZATION ON LAND USE/LAND COVER AND STREAM FLOW OF A SUB-TROPICAL RIVER BASIN OF INDIA

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### Abstract:

Rapid urbanization changes the land use/land cover pattern of a developing region. Due to these land surface changes, stream flow of the rivers also changes. It is important to investigate the factors affecting hydrological characteristics of the river basin for better river basin management planning. This study is aimed to understand the effect of Land Use/Land Cover (LU/LC) changes on stream flow of Upper Bhima River basin which is highly stressed in terms of water resources. In this study, Upper Bhima River basin is divided into two adjacent sub-watersheds: Mula-Mutha (urbanized) sub-watershed and Bhima (non-urbanized) sub-watershed. First of all, LU/LC changes were estimated over 1980, 2002, and 2009 for both Mula-Mutha and Bhima sub-watersheds. Further, stream flow simulations were done using Soil and Water Assessment Tool (SWAT) for the streams draining both watersheds. Results revealed that stream flow was relatively higher for urbanized sub-watershed. Through Sensitivity Analysis it was observed that out of all the parameters used, base flow was the most sensitive parameter towards LU/LC changes.

**Keywords:** Land Use/Land Cover, remote sensing, stream flow, urbanization.

## **RAPID URBANIZATION AND THE CHALLENGE OF SUSTAINABLE URBAN DEVELOPMENT IN PALESTINIAN CITIES**

Lubna Shaheen

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### **Abstract:**

Palestinian cities face the challenges of land scarcity, high population growth rates, rapid urbanization, uneven development and territorial fragmentation. Due to geopolitical constraints and the absence of an effective Palestinian planning institution, urban development in Palestinian cities has not followed any discernable planning scheme. This has led to a number of internal contradictions in the structure of cities, and adversely affected land use, the provision of urban services, and the quality of the living environment. This paper explores these challenges, and the potential that exists for introducing a more sustainable urban development pattern in Palestinian cities. It assesses alternative development approaches with a particular focus on sustainable development, promoting ecodevelopment imperatives, limiting random urbanization, and meeting present and future challenges, including fulfilling the needs of the people and conserving the scarce land and limited natural resources. This paper concludes by offering conceptual proposals and guidelines for promoting sustainable physical development in Palestinian cities.

**Keywords:** Palestinian Cities, Rapid urbanization, Sustainable urban development.



## NUMERICAL TREATMENT OF MATRIX DIFFERENTIAL MODELS USING MATRIX SPLINES

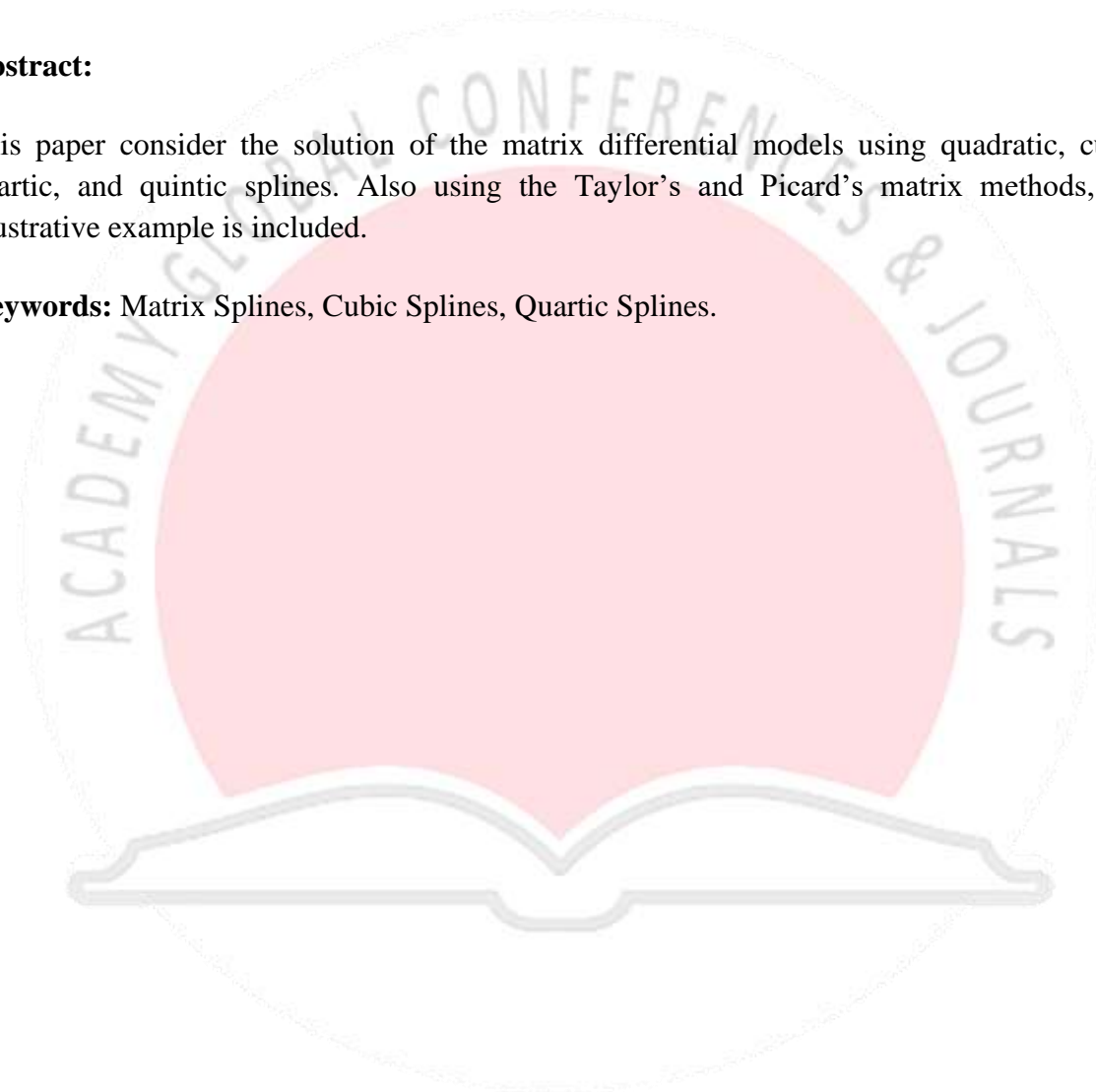
**Kholod M. Abualnaja**

Mathematics Department, Umm Al-Qura University, Makkah, Saudi Arabia,

**Abstract:**

This paper consider the solution of the matrix differential models using quadratic, cubic, quartic, and quintic splines. Also using the Taylor's and Picard's matrix methods, one illustrative example is included.

**Keywords:** Matrix Splines, Cubic Splines, Quartic Splines.



## AIRPORT CHECK-IN OPTIMIZATION BY IP AND SIMULATION IN COMBINATION

**Ahmad Thanyan Al-Sultan**

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### Abstract:

The check-in area of airport terminal is one of the busiest sections at airports at certain periods. The passengers are subjected to queues and delays during the check-in process. These delays and queues are due to constraints in the capacity of service facilities. In this project, the airport terminal is decomposed into several check-in areas. The airport check-in scheduling problem requires both a deterministic (integer programming) and stochastic (simulation) approach. Integer programming formulations are provided to minimize the total number of counters in each check-in area under the realistic constraint that counters for one and the same flight should be adjacent and the desired number of counters remaining in each area should be fixed during check-in operations. By using simulation, the airport system can be modeled to study the effects of various parameters such as number of passengers on a flight and check-in counter opening and closing time.

Keywords: Airport terminal, Integer programming, Scheduling, Simulation.

## A NEW MODIFICATION OF NONLINEAR CONJUGATE GRADIENT COEFFICIENTS WITH GLOBAL CONVERGENCE PROPERTIES

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Fakulti Informatik dan Komputeran, Universiti Sultan Zainal Abidin, Malaysia

Department of Mathematics, Faculty of Science and Technology, Universiti Malaysia  
Department of Computer Science and Mathematics, Univesiti Teknologi Mara Malaysia

### **Abstract:**

Conjugate gradient method has been enormously used to solve large scale unconstrained optimization problems due to the number of iteration, memory, CPU time, and convergence property, in this paper we find a new class of nonlinear conjugate gradient coefficient with global convergence properties proved by exact line search. The numerical results for our new  $\beta_K$  give a good result when it compared with well known formulas.

**Keywords:** Conjugate gradient method, conjugate gradient coefficient, global convergence.

## ESTIMATION OF THE MEAN OF THE SELECTED POPULATION

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Department of Mathematics, Indian Institute of Technology Roorkee –

Department of Mathematics, NISER, INDIA

### **Abstract:**

Two normal populations with different means and same variance are considered, where the variance is known. The population with the smaller sample mean is selected. Various estimators are constructed for the mean of the selected normal population. Finally, they are compared with respect to the bias and MSE risks by the method of Monte-Carlo simulation and their performances are analysed with the help of graphs.

**Keywords:** Estimation after selection, Brewster-Zidek technique.

## APPLICATION OF INTUITIONISTIC FUZZY CROSS ENTROPY MEASURE IN DECISION MAKING FOR MEDICAL DIAGNOSIS

**Shikha Maheshwari, Amit Srivastava**

Jaypee Institute of Information Technology, India  
Jaypee Institute of Information Technology, Noida, Uttar Pradesh India

### **Abstract:**

In medical investigations, uncertainty is a major challenging problem in making decision for doctors/experts to identify the diseases with a common set of symptoms and also has been extensively increasing in medical diagnosis problems. The theory of cross entropy for intuitionistic fuzzy sets (IFS) is an effective approach in coping uncertainty in decision making for medical diagnosis problem. The main focus of this paper is to propose a new intuitionistic fuzzy cross entropy measure (IFCEM), which aid in reducing the uncertainty and doctors/experts will take their decision easily in context of patient's disease. It is shown that the proposed measure has some elegant properties, which demonstrates its potency. Further, it is also exemplified in detail the efficiency and utility of the proposed measure by using a real life case study of diagnosis the disease in medical science.

**Keywords:** Intuitionistic fuzzy cross entropy (IFCEM), intuitionistic fuzzy set (IFS), medical diagnosis, uncertainty.

## PREPARATION AND CHARACTERIZATION OF POLYANILINE (PANI)- PLATINUM NANOCOMPOSITE

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### **Abstract:**

Polyaniline is an indispensable component in lightemitting devices (LEDs), televisions, cellular telephones, automotive, corrosion-resistant coatings, actuators etc. The electrical conductivity properties was found be increased by introduction of metal nano particles. In the present study, an attempt has been made to utilize platinum nano particles to achieve the improved electrical properties. Polyaniline and Pt-polyaniline composite are synthesized by electrochemical routes. X-ray diffractometer confirms the amorphous nature of polyaniline. The Bragg's diffraction peaks correspond to platinum nanoparticles in Pt-polyaniline composite and thermogravimetric analyzer indicates its decomposition at certain temperature. The Scanning Electron Micrographs of colloidal platinum nanoparticles were spherical, uniform shape in the composite. The current-voltage (I-V) characteristics of the PANI and composites were also studied which indicate a significant decreasing resistivity than PANI-Platinum after introduction of pt nanoparticles in the matrix of polyaniline (PANI).

**Keywords:** Polyaniline, XRD and Platinum Nanoparticles.

## SOME RESULTS ON THE GENERALIZED HIGHER RANK NUMERICAL RANGES

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### **Abstract:**

In this paper, the notion of rank- $k$  numerical range of rectangular complex matrix polynomials are introduced. Some algebraic and geometrical properties are investigated. Moreover, for  $\epsilon > 0$ , the notion of Birkhoff-James approximate orthogonality sets for  $\epsilon$ -higher rank numerical ranges of rectangular matrix polynomials is also introduced and studied. The proposed definitions yield a natural generalization of the standard higher rank numerical ranges.

**Keywords:** Rank- $k$  numerical range, isometry, numerical range, rectangular matrix polynomials.