ABSTRACT BOOK

AVRASYA 6. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

TBİLİSİ - GÜRCİSTAN
9 - 10 TEMMUZ 2022

AVRASYA 6. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

AVRASYA 6th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

AVRASYA 6th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

JULY 9 – 11, 2022
TBILISI - GEORGIA

Edited By
DR. GÜLTEKİN GÜRÇAY
DR. AMANEH MANAFIDIZAJI

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AVRASYA 6TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

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ORGANIIZATION
UBAK International Sciences Academy

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

PARTICIPATING COUNTRIES
Turkey –India- Japan – Philippines - Iran – Nigeria- U.K. Kuwait- Malaysia- Hungary- Uganda- Palestine- Canada - Saudi Arabia

PERCENTAGE OF PRESENTATION
45% form Turkey and 55 % from other Countries

PRESENTATION
Oral presentation

LANGUAGES

Turkish, English, Russian, Persian, Arabic

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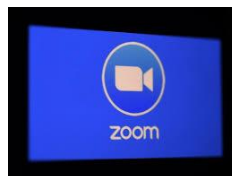
Dr. Gültekin GÜRÇAY

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AVRASYA 6th INTERNATIONAL CONFERENCE ON SOCIAL SCIENCES
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CONFERENCE PROGRAM
Online and Face to Face Presentation

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exp. H-..., S- ... NAME SURNAME

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Face to Face Congress Program – 10.07.2022

10. 07. 2022 10: 00 – 11:00	
Congress Venu: Holiday Inn Hotel Tbilisi	
HALL: 1 SESSION: 1 **MODERATOR:** PROF. DR. NURAY GÜZELER	
MUSTAFA UMUT KARAOĞLAN HAŞIM FIRAT KARASU	KARDAN MAFSALLI TAŞIT HAREKET İLETİM TEST DÜZENEĞİ TASARIMI VE DENEYSEL OLARAK İNCELENMESİ
HAŞIM FIRAT KARASU MINE DEMIRSOY	YÜK TAŞIMA HALATLARININ GERİLMELİ KOROZYON ÇATLAMASI TESTLERİ İLE İNCELENMESİ
NURAY GÜZELER FIRUZA KOBOYEVA DILEK SAY	KAŞAR PEYNİRİ ÇEŞİTLERİ VE ÖZELLİKLERİ

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Online Congress Program – 10.07.2022

10.07. 2022 Meeting ID: 857 2023 7461	11: 00 – 13:00 Passcode: 910722
HALL: 1 SESSION: 1	MODERATOR: DOÇ. DR. MERAL EKİM
PROF. DR. HASAN EKİM DR. ÖĞR. ÜYESİ SAMEH ALAGHA DOÇ. DR. MERAL EKİM PROF. DR. FERİT ÇİÇEKCİOĞLU	DEVELOPMENT OF PNEUMOTHORAX AFTER CARDIAC SURGERY: A LATE COMPLICATION OF COVID-19
DOÇ. DR. MERAL EKİM DR. ÖĞR. ÜYESİ SAMEH ALAGHA PROF. DR. HASAN EKİM DR. ÖĞR. ÜYESİ ZAFER CENGİZ ER PROF. DR. FERİT ÇİÇEKCİOĞLU PROF. DR. M. FEVZİ POLAT	VARİKÖZ VENLERİN TEDAVİSİNDE FİTOTERAPİNİN YERİ
PROMISE GOODNESS ADELEYE	RECENTS ADVANCES ON THE APPLICATIONS OF BIOTECHNOLOGICAL TECHNIQUES FOR THE IMPROVEMENT OF ANIMAL NUTRITION AND FEEDS
FATMA ÖZNUR ULUSOY RAMAZAN SEREZLİ	İLERİ ANALİZ YÖNTEMLERİ KULLANILARAK FARKLI BÖLGELERDEN ÖRNEKLENEN ÇAMUR KARİDESİNİN (UPOGEBİA PUSİLLA) KARAKTERİZASYONU
FATİH HANCI	TRANSPOSON ANALYZES in PLANTS UNDER ABIOTIC STRESS CONDITIONS

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HALL: 2 SESSION: 1	MODERATOR: EZGİ GÜRGENÇ
DEMET DARCAN ALİ RIZA DİNÇER	ORGANİK PEROKSİT İÇEREN ATIK SULARIN ELEKTRO KİMYASAL OKSİDASYON VE ADSORBSİYON YÖNTEMİ KULLANILARAK ARITIMI
DEMET DARCAN ALİ RIZA DİNÇER	ATIK SULARIN FARKLI PERSÜLFAT VE FARKLI AKIM KOŞULLARINDA ELEKTRO KİMYASAL OKSİDASYON YÖNTEMİ KULLANILARAK ARITIMI
İSA MUSTAFAYEV PROF. DR. ÖZŞEN ÇORUMLU3OĞLU	KARABAĞ (AZERBAYCAN) İŞGALİ NEDENİYLE YÖRE ARAZİ ÖRTÜSÜ VE KULLANIMINDAKİ DEĞİŞİMLERİN UZAKTAN ALGILAMA YÖNTEMLERİ İLE TESPİT VE ANALİZİ
EZGİ GÜRGENÇ	DİNAMİK SOL-JEL SPİN KAPLAMA YÖNTEMİ İLE ÜRETİLEN H-BN KATKILI CDO İNCE FİLMLERİN KARAKTERİZASYONU
EZGİ GÜRGENÇ CEVHER KÜRŞAT MACİT	FARKLI SICAKLIKLARDA TAVLANAN GRAFİT KATKILI KALAY OKSİT NANOPARÇACIKLARIN YAPISAL VE MORFOLOJİK ÖZELLİKLERİNİN İNCELENMESİ

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HALL: 3 SESSION: 1	**MODERATOR: DOÇ. DR. AKIN ÖZÇİFT**
DOÇ. DR. AKIN ÖZÇİFT	EVALUATION OF SUPERVISED MACHINE LEARNING ALGORITHMS IN PREDICTION OF LUMPY SKIN DISEASE
DOÇ. DR. AKIN ÖZÇİFT	HEART DISEASE IDENTIFICATION COMPARISON WITH ENSEMBLE AND BASE MACHINE LEARNING ALGORITHMS
NİHAT PAMUK	INVESTIGATION OF WELDING TRANSFORMER MAGNETIZING CIRCUIT PARAMETERS USING PSPICE SIMULATION MODEL
RAMAZAN KARTAL SEMA KOÇ KAYHAN	RETINAL BLOOD VESSEL SEGMENTATION USING TRANSFER LEARNING ON UNET
SERPİL SAVCI GÜLLÜ KIRAT	KURŞUN VE ÇİNKO AĞIR METALLERİNİN ÇEVRE ÜZERİNE OLAN ETKİLERİ
GÜLLÜ KIRAT SERPİL SAVCI	BAKIR MİNERALİNİN ÇEVRESEL RİSKLERİ ve İNSAN SAĞLIĞI ÜZERİNE OLAN ETKİLERİ
PROF. DR. TUĞRUL OKTAY ÖĞR. GÖR. ENES ÖZEN	THE EFFECTS OF ARM RISE AND HUB ANGLE CHANGE OF A MORPHING QUADROTOR ON LATERAL FLIGHT

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HALL: 4 SESSION: 1 MODERATOR: **PROF. HAJAR HUSEYNOVA**	
DOÇ. DR. ÖMER ÇALIŞKAN	OKUL MÜDÜRLERİNİN SOSYAL ADALET LİDERLİĞİ SERGİLEME DURUMLARININ İNCELENMESİ
BAHADIR KAYGUSUZ DOÇ. DR. ABDULKADİR KIRBAŞ	TÜRKÇE ÖĞRETİMİNDE UZAKTAN EĞİTİM SÜRECİ
DOÇ. DR. ABDULKADİR KIRBAŞ BAHADIR KAYGUSUZ	TÜRKÇE ÖĞRETİMİNDE BİLİŞİM TEKNOLOJİLERİNİN KULLANIMI
DR. ÖĞRETİM ÜYESİ GİZEM KÖŞKER	ÇOCUKLARA YABANCI DİL ÖĞRETİMİNDE DOKÜMAN SEÇİMİ: CHARLES PERRAULT'UN ÇİZMELİ KEDİ MASALI ÜZERİNDEN HEDEF KÜLTÜR AKTARIMI VE EVRENSEL DEĞERLER GELİŞİMİ TEMALI BİR İNCELEME
DOÇ. DR. NAZİLƏ ABDULLAZADƏ	FİRUDİN BƏY KÖÇƏRLİ VƏ AZƏRBAYCAN ƏDƏBİYYATININ TƏDRİSİ MƏSƏLƏLƏRİ
PROF. HAJAR HUSEYNOVA	AZƏRBAYCAN DİALEKTLƏRİNDƏ ARXAİK TÜRK DİLİ ELEMENTLƏRİ
UĞUR GÜLLÜ	SOSYO EKONOMİK GÖÇ TABANLI 21. YÜZYIL ANADOLU HALK MÜZİĞİ EVRİLMİŞ MOTİF KÜLTÜRÜ
ZEYNALOV SƏRDAR	XX ƏSRİN TÜRK DİLİ VƏ AZƏRBAYCAN DİLİ KİTABLARINDA SİFƏTİN QURULUŞCA NÖVLƏRİ

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HALL: 5 SESSION: 1	MODERATOR: Dr. LEMAN KUZU
KARUPPAIYA MARUTHAI VIRUTHAGIRI THANGAVELU MANIKANDAN KANAGASABAI	STATISTICAL SCREENING OF MEDIUM COMPONENTS ON ETHANOL PRODUCTION FROM CASHEW APPLE JUICE USING SACCHAROMYCES DIASTICUS
EMMA K. SALES NILDA G. BUTARDO	MOLECULAR ANALYSIS OF SOMACLONAL VARIATION IN TISSUE CULTURE DERIVED BANANAS USING MSAP AND SSR MARKERS
NILIMA D. GAJBHIYE	TOXIC EFFECT OF SODIUM NITRATE ON GERMINATING SEEDS OF VIGNA RADIATA
E. BINAEIAN SH. SOROUSHNIA	INVESTIGATION ON TOXICITY OF MANUFACTURED NANOPARTICLES TO BIOLUMINESCENCE BACTERIA VIBRIO FISCHERI
ADNAN Y. ROJEAB	MAGNETIC PROPERTIES GOVERN THE PROCESSES OF DNA REPLICATION AND THE SHORTENING OF THE TELOMERE
SOMAYYEH AZIZI SAEED KABOLI ATSUSHI YAGI	EVOLUTIONARY DISTANCE IN THE YEAST GENOME
ARPITA SONI SAPNA MITTAL	SMART MOTION
NADIA EL ALAMI EL HASSANI, SOUKAINA MOTIA BENACHIR BOUCHIKHI NEZHA EL BARI	SYNTHESIS OF HIGHLY SENSITIVE MOLECULAR IMPRINTED SENSOR FOR SELECTIVE DETERMINATION OF DOXYCYCLINE IN HONEY SAMPLES

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HALL: 6 SESSION: 1	MODERATOR: SAMIA AIT ALI YAHIA
ABU SALIM MUSTAFA	MICROBIAL CONTAMINANTS IN DRINKING WATER COLLECTED FROM DIFFERENT REGIONS OF KUWAIT
MANISHA CHAUDHARY JOYDIP DHAR GOVIND PRASAD SAHU	MATHEMATICAL MODEL OF DEPLETION OF FORESTRY RESOURCE: EFFECT OF SYNTHETIC BASED INDUSTRIES
NOOR MOHAMMAD	THE AGRICULTURAL GOVERNANCE IN BANGLADESH: A CASE STUDY
OQBA BASAL ANDRÁS SZABÓ	THE EFFECTS OF DROUGHT AND NITROGEN ON SOYBEAN (GLYCINE MAX (L.) MERRILL) PHYSIOLOGY AND YIELD
GERALD AMATRE JULIUS BUNNY LEJJU MORGAN ANDAMA	JIGGER FLEA (TUNGA PENETRANS) INFESTATIONS AND USE OF SOIL-COW DUNG-ASH MIXTURE AS A FLEA CONTROL METHOD IN EASTERN UGANDA
MOHAMMAD ABDOLLAHI	APPLICATION OF METARHIZIUM ANISOPLIAE AGAINST MELOIDOGYNE JAVANICA IN SOIL AMENDED WITH OAK DEBRIS
MUHAMMAD IMRAN IQRA BASİT MOBUSHİR RİAZ KHAN SAJİD RASHEED AHMAD	ANALYZING THE IMPACT OF SPATIO-TEMPORAL CLIMATE VARIATIONS ON THE RICE CROP CALENDAR IN PAKISTAN
KUNWAR D. YADAV DAYANAND SHARMA	VERMICOMPOSTING OF TEXTILE INDUSTRIES' DYEING SLUDGE BY USING EISENIA FOETIDA

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HALL: 7 SESSION: 1	**MODERATOR: ANTONIOS MANIATIS**
MUHAMMAD NAVEED YANG CAIXIA	NEED OF NATIONAL SPACE LEGISLATION FOR SPACE FARING NATIONS
ANTONIOS MANIATIS	HUMAN RIGHTS IN ARMED CONFLICTS AND CONSTITUTIONAL LAW
SAULE MUSSABEKOVA	FORENSIC MEDICAL CAPACITIES OF RESEARCH OF SALIVA STAINS ON PHYSICAL EVIDENCE AFTER WASHING
FAHAD ALANAZI ANDREW JONES	A METHOD TO ENHANCE THE ACCURACY OF DIGITAL FORENSIC IN THE ABSENCE OF SUFFICIENT EVIDENCE IN SAUDI ARABIA
KHADIJA ALI	SEXUAL AND GENDER BASED CRIMES IN INTERNATIONAL CRIMINAL LAW: MOVING FORWARDS OR BACKWARDS?
UMAR UBANDAWAKI	CONTROLLING YOUTHS PARTICIPATION IN POLITICS IN SOKOTO STATE: A CONSTRUCTIVE INCLUSIVENESS FOR GOOD GOVERNANCE IN NIGERIA
ABDUL SALIM AMIN	JUDICIAL INSTITUTIONS IN A POST-CONFLICT SOCIETY: GAINING LEGITIMACY THROUGH A HOLISTIC REFORM
DINI DEWI HENIARTI	MILITARY COURT'S JURISDICTION OVER MILITARY MEMBERS WHO COMMIT GENERAL CRIMES UNDER INDONESIAN MILITARY JUDICIARY SYSTEM IN COMPARISON WITH OTHER COUNTRIES
KHODR FAKIH	THE OMBUDSMAN: DIFFERENT TERMINOLOGIES SAME MISSIONS
ARMEN YEZEKYAN	THE LEGAL PROCEDURE OF ATTESTATION OF PUBLIC SERVANTS

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10. 07. 2022 Meeting ID: 857 2023 7461	14: 00 – 16: 00 Passcode: 910722
HALL: 1 SESSION: 2	**MODERATOR:** **MURAT KARA**
MEHMET AKİF BÜYÜKBAŞ NALAN GÜLTEN AKIN	SÜREÇ ANALİZİ VE SÜREÇ İYİLEŞTİRME: BİR İMALAT FİRMASINDA UYGULAMA
KAAN YİĞENOĞLU	COVID-19 PANDEMİSİ DÖNEMİNDE BLOKZİNCİR TEKNOLOJİSİNİN GIDA TEDARİK ZİNCİRİNDE UYGULANMASI
KAAN YİĞENOĞLU	CONSUMERS' SATISFACTION IN VIRTUAL COMMERCE
MURAT KARA	TÜRK BANKACILIK SEKTÖRÜNDE UYGULANABİLECEK SOSYAL SORUMLULUK KAMPANYASI STRATEJİLERİNİN EKONOMİK ETKİLERİNİN İNCELENMESİ
MURAT KARA	ENFLASYONLA MÜCADELE KAPSAMINDA TÜRKİYE'DE ZİNCİR MARKETLERDE UYGULANABİLECEK PAZARLAMA KARMASI STRATEJİLERİ
ADEM GÜLER MAHMUT AKIN	İŞLETMELERDE PERSONELİN, PSİKOLOJİK SERMAYE, ÖRGÜTSEL MUHALEFET VE YARATICI KATKILARI ARASINDAKİ İLİŞKİLER
TURHAN MOÇ	İŞ YAŞAMINDA YALNIZLAŞMA İLE ÖRGÜTSEL ÖZDEŞLEŞME ARASINDAKİ İLİŞKİ. AKADEMİSYENLER ÜZERİNE BİR ARAŞTIRMA.
MEHMET ŞİMŞEK	GİRESUN'DA APİ TURİZM OLANAKLARI ÜZERİNE BİR İNCELEME
ARAŞ. GÖR. TUĞÇE ORAL	SEKTÖR BAZINDA SGK VERİLERİNE GÖRE İSG UYGULAMALARININ ETKİNLİĞİ: KONAKLAMA İŞLETMECİLİĞİ

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HALL: 2 SESSION: 2	MODERATOR: KÜBRA KULAKLIKAYA
MS. SNIGDHA KURIYAL, PRATEEK KUMAR DINKAR, PAYAL	MUSLIM WOMEN: EMERGING FRAMEWORK OF RIGHTS
DOÇ. DR. OSMAN ZAHİD ÇİFÇİ YUSUF ŞAHİN	A VICIOUS CIRCLE IN PHILOSOPHY ARRIVED DESTINATION: NEO-SOPHISM
HATİCE CANSU GÖKDEMİR	2002 – 2015 YILLARI ARASINDA TÜRKİYE CUMHURİYETİ DIŞİŞLERİ BAKANLIĞI'NIN SAHRAALTI AFRİKA DENEYİMİ
RES. ASSIST. ZEHRA ÇUBUKCU PROF. DR. ÖNDER KUTLU	NON-GOVERNMENTAL ORGANIZATIONS AND PARTICIPATION IN LOCAL PUBLIC POLICIES
FETTAH KAYRA	PUBLIC-PRIVATE PARTNERSHIP: AN ASSESSMENT IN TERMS OF THE CONCEPTS OF INSTITUTIONAL LOGIC AND LEGITIMACY
LOBNA JABER	İSLAM HUKUKUNA GÖRE VAKIFLAR YOLUYLA İŞSİZLİK SORUNUNU ÇÖZME YOLLARI ÜZERİNE BAZI GÖRÜŞLER
KÜBRA KULAKLIKAYA	SOSYOLOJİK YÖNÜYLE DAYANIŞMA VE YARDIMLAŞMA: MUŞ İLİ ÖRNEĞİ
KÜBRA KULAKLIKAYA	COVID 19 KAMU SPOTLARINDA KULLANILAN İKNA YÖNTEMLERİ

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HALL: 3 SESSION: 2	**MODERATOR: SEVİNC SADIQOVA**
EARL JONES G. MUICO	STRATEGIC INVENTORY FOR LANGUAGE LEARNING AMONG SECOND LANGAUGE LEARNERS
ÜNSAL SEVİNDİK BEYZA MERVE AKGÜL TEBESSÜM DURHAN AYYILDIZ SUAT KARAKÜÇÜK	ELİT SPORCULARDA BOŞ ZAMAN EĞİTİMİ VE REKREASYON FAYDA DÜZEYLERİNİN İNCELENMESİ
NURKAN YILMAZ	MERKEZİ SÜTUN BÖLGE ANTRENMANLARININ SEÇİLMİŞ BAZI BİYOMOTOR YETİLER ÜZERİNDEKİ ETKİLERİNİN İNCELENMESİ
NURKAN YILMAZ	ANTRENE EDİLMİŞ CORE BÖLGESİNİN KUVVETTE DAYANIKLILIK PERFORMANSI ÜZERİNE ETKİLERİNİN İNCELENMESİ
EYÜP ACAR	ORTAÖĞRETİM BRANŞ ÖĞRETMENLERİNİN İŞ STRESİ İŞ VE YAŞAM DOYUM DÜZEYLERİNİN KARŞILAŞTIRILMASI
MURAT YILMAZ ESRA BAYRAK AYAŞ	SPORCU ÖĞRENCİLERİN SPORDA SÖYLENTİ DÜZEYLERİNİN BELİRLENMESİ
SEVİNC SADIQOVA	QƏRBİ AZƏRBAYCAN ŞİVƏLƏRİNDƏ İSMİN HALLARININ ƏVƏZLƏNMƏSİ
SƏMİNƏ SABİR QIZI ABDULLAYEVA	AZƏRBAYCAN ŞİFAHİ DİLİNİN NORMALARI

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HALL: 4 SESSION: 2	MODERATOR:	ASSOC. PROF. MAMEDOVA ASMETKHANUM
MEHMET ALPDOĞAN ERCİŞ	GİUSEPPE ARCİMBOLDO VE SALVADOR DALİ ARASINDAKİ RESİMSEL ÜSLUP BENZERLİĞİ	
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DR. GULANA ALİYEVA	ARCHAEOLOGICAL MONUMENTS OF KHOJAVEND REGION OF AZERBAIJAN	
ASSOC. PROF. MAMEDOVA ASMETKHANUM	FIGURATİVE KHİTAB (APPEALING) IN ''KHAMSA" BY NIZAMI GANJAVI	
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SEVDA ABBASOVA, PƏRİ PAŞAYEVA	YUXARI SİNİF ŞAGİRDLƏRİNDƏ NITQ MƏDƏNİYYƏTİNİN FORMALAŞDIRILMASI	
NƏSİROVA FİDAN YAQUB QIZI	"MUNİSNAMƏ" - UŞAQ ƏDƏBİYYATININ ZƏNGİNLƏŞMƏSİNƏ XİDMƏT EDƏN ƏDƏBİ ABİDƏ	

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M. AMINU SANDA K. EWONTUMAH	ORGANIZATIONAL INVOLVEMENT AND EMPLOYEES' CONSUMPTION OF NEW WORK PRACTICES IN STATE-OWNED ENTERPRISES: THE GHANAIAN CASE
YESUSELVI MANICKAM TAN SOON CHIN	ASSESSMENT ON COMMUNICATION STUDENTS' INTERNSHIP PERFORMANCES FROM THE EMPLOYERS' PERSPECTIVE
MAJEED MOHAMMED MIDHIN CLARE FINBURGH	TOM STOPPARD: THE AMORALITY OF THE ARTIST
AHMED USMAN EGYE HAMZA MUHAMMAD	ANALYSIS OF POVERTY REDUCTION STRATEGIES AS MECHANISM FOR DEVELOPMENT IN NIGERIA FROM 1999-2019
NINO ABESADZE MARINE MINDORASHVILI NINO PARESASHVILI	INVESTIGATION OF THE MAIN TRENDS OF TOURIST EXPENSES IN GEORGIA
SAMIA AIT ALI YAHIA	ANALYSIS OF STELES WITH LIBYAN INSCRIPTIONS OF GRANDE KABYLIA, ALGERIA
SAYANTAN KHANRA ROJERS P. JOSEPH	ADOPTION AND DIFFUSION OF E-GOVERNMENT SERVICES IN INDIA: THE IMPACT OF USER DEMOGRAPHICS AND SERVICE QUALITY
NAEEM AHMED	SOCIAL WORK PRACTICE TO LABOUR WELFARE: A PROPOSED MODEL OF FIELD WORK PRACTICUM AND ROLE OF SOCIAL WORKER IN INDIA
MONA SALAH EL-DIN HASSANEIN	FROM VICTIM TO ETHICAL AGENT: OSCAR WILDE'S THE BALLAD OF READING GAOL AS POST-TRAUMATIC WRITING

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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
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ALPANA AGARWAL AKHIL SHARMA	INVERTER BASED GAIN-BOOSTING FULLY DIFFERENTIAL CMOS AMPLIFIER

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AVRASYA 6th INTERNATIONAL CONFERENCE

4th International Group Exhibition

"ADVENTURE OF ART FROM TRADITIONAL TO CONTEMPORARY"

July 9-10, 2022 — Tbilisi

Meeting ID: 857 2023 7461
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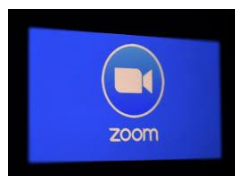
4th International Group Exhibition
"ADVENTURE OF ART FROM TRADITIONAL TO CONTEMPORARY"
July 9 - 10,2022
Tbilisi

Meeting ID: 857 2023 7461
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10. 07. 2022 Meeting ID: 857 2023 7461	14: 00 – 16: 00 Passcode: 910722
HALL: Exhibition Hall	MODERATOR DOÇ. DR. YÜCEL YAZGIN
FATMA NUR BAŞARAN	Bala-sar
FATMA NUR BAŞARAN	KESİŞİM (Intersection)
FAZİLET CEYHANLI	Kadın Olmak
FERRAH NUR DÜNDAR	Sessizlik
FİLİZ YILDIZ	Ölümsüz - Immortal
HAMİDE SOYSAL DEMİRCİ	Su izi-3
MEHMET ALPDOĞAN ERCİŞ	Umut/Hope
MEHMET ALPDOĞAN ERCİŞ	Gerilim/ Potential
MİNARA GULİYEVA	İlkbahar rüyası/ Spring dream
MİNARA GULİYEVA	Yaz rüyası / Summer dream
NURSEL KARACA	Taç / Crown
NURSEL KARACA	Esintiler / Breezes
NURGÜL AVCI	Baharın Müjdecileri
VALİDE PAŞAYEVA	"Anadolu – 2. Hayat". Dokuma tasarımı
YASEMİN DEDEOĞLU	Leke
YÜCEL YAZGIN	Cyprus Dwarf Hippopotamus
YÜCEL YAZGIN	Elephas (Palaeoloxodon) Cypriotes

CONTENT

KARDAN MAFSALLI TAŞIT HAREKET İLETİM TEST DÜZENEĞİ TASARIMI VE DENEYSEL OLARAK İNCELENMESİ

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Otomotiv sektöründe özellikle binek araçlardan daha uzun aks aralığına sahip hafif ve ağır ticari taşıtların tahrik iletim hattında genellikle iki ve üç mafsallı kardan milleri kullanılmaktadır. Otomotiv sektöründe geniş kullanım alanına sahip bu tür araçlarda, kardan mafsal bağlantı noktalarının doğru bir şekilde belirlenmesi, sorunsuz bir tahrik iletimi için büyük önem taşımaktadır. Bu çalışmada, üç mafsallı tahrik iletiminin deneysel olarak incelenebilmesi için bir test düzeneği tasarlanmıştır. Bu test düzeneğinde üç kardan mafsalına ait bağlantı noktaları, istenilen tahrik mili bağlantı açısını verecek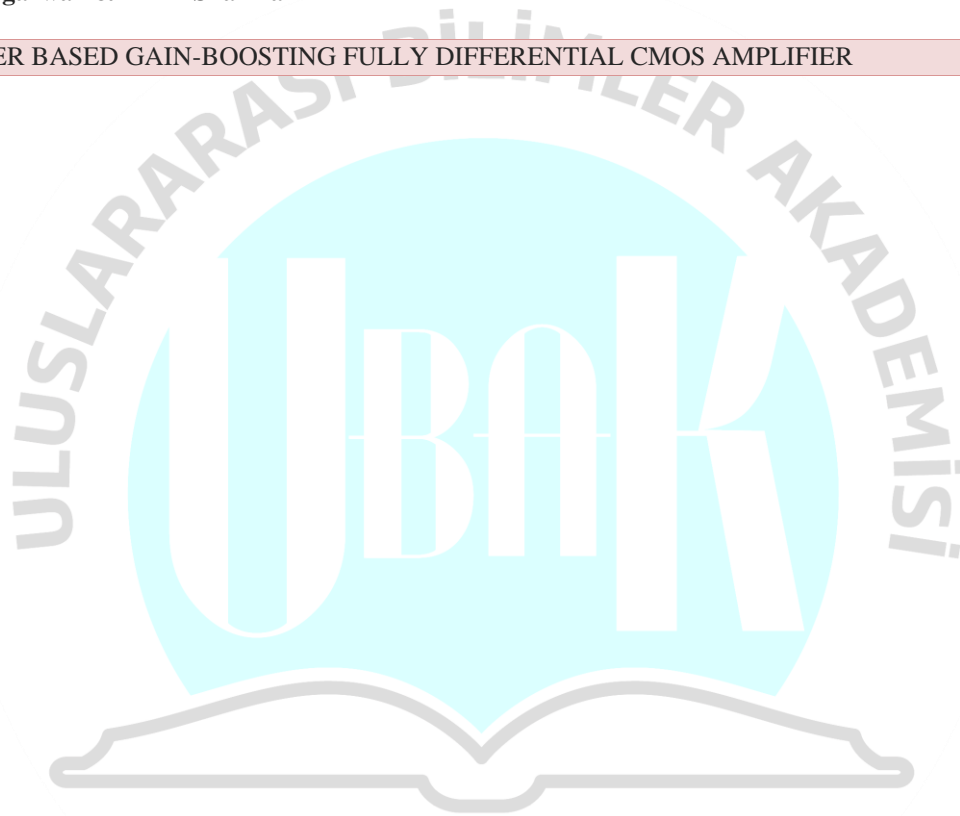 şekilde değiştirilebilmektedir. Bir tahrik iletim hattında meydana gelen ve hız düzgünsüzlüğü olarak adlandırılan, çıkış mili ile giriş mili arasındaki açısal hız farklılıkları, iletim hattı üzerinde salınıma neden olmaktadır. Bu sebeple meydana gelen hız ve moment düzgünsüzlüğü, kardan mafsallarındaki güç aktarımının kayıplarla gerçekleştiğini göstermektedir. Taşıtlarda hasara yol açan bu kayıpları optimum düzeyde tutabilmek, iletim hattı mafsal noktalarının uygun düzende yerleştirilmesiyle mümkün olmaktadır. İki kardan mafsalından daha fazla mafsal kullanılması ise tahrik iletiminde meydana gelen hız düzgünsüzlüklerinin artmasına sebep olmaktadır. Bu nedenle, üç mafsallı tahrik iletiminin analizi gerçekleştirilmiş ve mafsal noktalarının hız düzgünsüzlüklerine etkisi incelenmiştir. Tahrik sisteminin kinematik analizine bağlı olarak pratik ve kullanışlı olması açısından tahrik sistemin konstrüksiyonuna göre kinematik hesaplamaları içeren bir mobil uygulama geliştirilmiştir. Ayrıca üç mafsallı tahrik iletim hattının katı modelinin kinematik analizi gerçekleştirilmiş ve elde edilen sonuçlar deneysel olarak ölçülen değerlerle karşılaştırılmıştır. Elde edilen sonuçlar, analiz ve ölçüm sonuçlarının birbiri ile örtüştüğünü göstermektedir. Tasarlanan bu test düzeneği ile bir taşıtın tahrik iletim hattının üretimi ve montajı öncesinde, hareket testinin yapılarak düzgün ve verimli bir tahrik iletimine sahip olması sağlanacaktır.

Anahtar Kelimeler: Kardan mafsalı, tahrik sistemi, kinematik analiz, otomotiv

YÜK TAŞIMA HALATLARININ GERİLMELİ KOROZYON ÇATLAMASI TESTLERİ İLE İNCELENMESİ

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ÖZET

Yük taşıma halatları, limanlardaki ve gemilerdeki krenlerde, okyanuslarda bulunan petrol platformlarında ve madenlerde kullanılmaktadır. Bu ortamlarda bulunan halatlar, çalışma ömürleri boyunca neme ve deniz tuzuna maruz kalmaktadır. Eğer bu ortamda oluşan korozyonun halat üzerindeki etkisi göz ardı edilirse yüksek yük taşıma kapasitelerindeki bu elemanlar için ciddi derecede yüksek bir risk faktörü ortaya çıkmaktadır. Bu çalışmada, belirlenen çelik tel halat tiplerine gerilmeli korozyon çatlaması testleri uygulanarak bu risk faktörünü kontrol altında tutmak amaçlanmıştır. Ortam güdümlü çatlamalar, ortamda bulunan mekanik ve çevresel etkilerin birbirlerinin etkilerini güçlendirerek neden oldukları hasar tipleridir. Gerilmeli korozyon çatlaması da bir ortam güdümlü çatlama olup diğer tipleri korozyonlu yorulma çatlaması ve hidrojenli çatlamadır. Genellikle malzeme akma sınırının %10-70 aralığında değişen gerilmeli korozyon çatlaması dayanımı, ortam koşullarındaki farklılaşmalara karşı oldukça duyarlıdır. Bu bağlamda çelik özlü ve kendir özlü olmak üzere iki grup olarak seçilen Standart, Seale ve Warrington Seale halat tiplerine uygun olarak tasarlanıp üretilen bir gerilmeli korozyon test cihazı ile halatların ASTM G49 standardı baz alınarak ön gerilmeli korozyon testleri yapılmıştır. Halatlar test cihazında torkmetre ile sağlanan bir ön gerilme kuvvetine maruzken diğer yandan da elektrokimyasal hücre kabı içerisindeki %3,5 tuzlu su solüsyonu vasıtasıyla korozyona maruz kalmaktadır. Elektrokimyasal hücre kabı içerisinde, çalışma elektrodu olarak çelik halat numunesi, Hg/HgCl referans elektrot ve yardımcı (karşıt) elektrot olarak grafit çubuk kullanılmıştır. Bu şekilde, gerilmeli korozyon için gerekli olan ortam, malzeme ve yük sağlanmış olmaktadır. Bulunan verilere göre korozyona karşı uygun iyileştirme yöntemleri uygulanmıştır. Bunlar; sıcak daldırma ile galvanizleme ve çinko bakımından zengin epoksi astar ile boyamadır. Uygulanan bu yöntemlerin sonuçları ilk durumdaki sonuçlarla karşılaştırılarak korozyona karşı yapılan iyileştirmenin derecesi belirlenmiştir.

Anahtar Kelimeler: Yük taşıma halatı, korozyon, gerilmeli korozyon çatlaması, galvanizleme

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ÖZET

Her toplum tarihsel gelişim süresince örf ve adetleri ile bulunduğu yörenin şartlarına uygun olarak farklı peynirleri üretme yoluna gitmişlerdir. Bu nedenle Dünyada yaklaşık olarak 4000, Türkiye'de ise her biri ayrı lezzete sahip 200'den fazla peynir çeşidinin olduğu bilinmektedir. Peynirlerin arasındaki farklılığı oluşturan unsurlar; kültürel alışkanlıklar, üretimde kullanılan sütün türü ve bileşim özellikleri, üretim yeri, yapım metotları, kullanılan ambalaj materyalleri, olgunlaştırma koşulları ve süreleri şeklinde sıralanabilir. Üretim ve tüketim açısından değerlendirildiğinde Türkiye'nin en önemli peynir çeşitlerinden biri Kaşar peyniridir. Ekonomik açıdan önemli yere sahip olan Kaşar peyniri Türkiye İstatistik Kurumu verilerine göre üretim miktarları göz önünde bulundurulduğunda Beyaz peynirden sonra ikinci sırada yer almaktadır. Bu peynir, pasta-filata (plastik telemeli) ve dilimlenebilir peynirler grubunda yer almaktadır. Türkiye'nin birçok bölgesinde Kaşar peyniri üretilmekte ve genellikle yapımında inek sütü kullanılmaktadır. Bu peynirin yapımında inek sütünün yanı sıra koyun sütü, keçi sütü veya bu sütlerin karışımlarının kullanımı da söz konusudur. Kendine özgü koku, renk, tat ve aromaya sahip olan Kaşar peyniri sadece Türkiye'de değil birçok ülkede farklı isimlerle bilinmekte ve yapılmaktadır. Bulgaristan'da Kaşkaval, Yunanistan'da Kassari, Yugoslavya'da Kachkawaj, Rusya'da Kavkazskiy adları ile tanınmaktadır. Ülkemizin hemen hemen her bölgesinde üretilen Kaşar peynirinin üretimi, çiğ sütün ısıl işleme tabi tutulmadan mayalanması, pıhtı oluştuktan sonra peyniraltı suyunun uzaklaştırılması, suyundan ayrılan telemenin belirli bir seviyede asitleştirilmesi, sıcak su içerisinde haşlanması ve ardından yoğrulup kalıplara yerleştirilmesi şeklindedir. Kaşar peyniri taze (olgunlaştırılmadan) olarak veya olgunlaştırıldıktan sonra satışa sunulmaktadır. Kaşar peyniri kahvaltılık olarak tüketilmesinin yanında tost, sandviç, makarna, peynirli pide, pizza gibi yiyeceklerin hazırlanmasında da

kullanılmaktadır. Bu çalışmada, Kaşar peynirinin genel özellikleri, üretim yöntemleri, bileşimleri ve Kaşar peyniri üzerine yapılan araştırmalara yer verilmiştir.

Anahtar Kelimeler: Kaşar peyniri, üretim yöntemleri, bileşim

KASHAR CHEESE TYPES AND PROPERTIES

ABSTRACT

Every society has tried to produce different cheeses in accordance with the conditions of the region, customs and traditions throughout the historical development. Therefore, it is known that there are approximately 4000 varieties of cheese in the world and more than 200 varieties of cheese in Turkey, each with a different flavor. The factors making the difference between cheeses can be listed as cultural habits, type and composition of milk used in the production, production place, production methods, packaging materials used, conditions and durations of ripening. In terms of production and consumption, one of the most important cheese varieties of Turkey is Kashar cheese. According to the data of the Turkish Statistical Institute, Kashar cheese, which has an important place in terms of economy, it is in the second place after White cheese, taking into consideration the production amounts of cheeses. This cheese is in the group of pasta-filata (with plasticized curd) and sliceable cheeses. Kashar cheese is produced in many regions of Turkey and cow's milk is generally used in its production. In addition to cow's milk, sheep's and goat's milks or mixtures of these milks are also used in the process of making of this cheese. Kashar cheese, which has its own unique smell, color, taste, and aroma, is known and made not only in Turkey but also in many countries, but is known under different names. For instance, it is known as Kashkaval (Kaşkaval) in Bulgaria, Kassari in Greece, Kachkawaj in Yugoslavia, and Kavkazskiy in Russia. The production of Kashar cheese, which is produced in almost every region of our country, can be stated as fermenting the raw milk without heat treatment, removing the whey after the forming of the clot, acidifying the curd separated from the water to a certain level, boiling it in hot water, and then kneading it and placing it in molds. Kashar cheese is sold as fresh (unripened) or after ripening. In addition to being consumed for breakfast, Kashar cheese is also used in the preparation of meals such as toast, sandwiches, pasta, cheese flatbread, and pizza. In this study, the general properties of Kashar cheese, production methods, compositions, and studies on Kashar cheese are included.

Key-words: Kashar cheese, production methods, composition

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ÖZET

Alt ekstremitlerdeki deri altında bulunan yüzeyel venlerin uzaması, kıvrılması ve genişlemesine varis denir. Genişleyen bu variköz venlerin kapaklarında yetmezlik gelişir. Çoğunlukla alt ekstremitelerin yüzeyel venlerinde görülmekle beraber Spermatik kordon, özefagus, anorektum ve diğer venalarda da rastlanabilir. Spermatik kordonda oluşanlara varikosel, anorektumda oluşanlara da hemoroid denir. Zayıflamış damar duvarları normalden daha uzun, daha geniş ve daha az elastiktir, bu da kapakçıklarda koaptasyon kusuruna ve reflüye neden olur. Son zamanlarda yapılan araştırmalar ise kapak disfonksiyonunun damar duvarındaki değişikliklerden önce gelebileceğini ortaya koymaktadır. Varisler en sık vena safena magna ve vena safena parva ve dallarında görülür.

Kadınlarda varis klasik olarak hamilelik sırasında veya sonrasında ve menopozun başlangıcında gelişir ve hormonal faktörler ile de ilişkilidir. Kozmetik bir sorun olarak kabul

edilmekle birlikte, varisler ağrı, iş gücü kaybı, sakatlık ve sağlıkla ilgili yaşam kalitesinin (QOL) bozulmasına yol açabilir. Etiyoloji çok faktörlü olabilse de, en sık görülen neden damar duvarındaki içsel morfolojik veya biyokimyasal anormalliktir.

Yunanaca Phyton (Bitki) ve Therapeia (tedavi) kelimelerinden meydana gelen Fitoterapi, geleneksel bitkisel tıbbi ürünler ve bitkisel ilaçlarla oluşturulan bir tedavi yöntemidir. İbn-i Sina, Lokman Hekim gibi eski bilginlerinde kullandığı yöntemler fitoterapiye dayanmaktadır. Çevremizdeki birçok yabani ot, çeşitli önemli sağlık sorunlarına yardımcı olabilecek oldukça etkili şifalı bitkilerdir. Atkestanesi ekstresi başta olmak üzere bazı bitkisel ürünler venöz sistem hastalıklarında kullanılmaktadır. Ancak, bitkilerde bulunan biyoaktif fito- moleküllerin etki şekli ile ilgili yeterli çalışmalar henüz yoktur.

Variköz venlerin medikal tedavisinde fitoterapinin şüphesiz bazı yenilikler getirmesi muhtemeldir. Ancak, venöz sistem hastalıklarında kullanılan bitkisel ürünlerin hastalığı geçirmediği ancak kullanıldığı sürece bir rahatlama sağladığı göz önüne alınmalıdır. Bu nedenle variköz venlerin kesin tedavisinde cerrahi veya endovasküler tedavi metotları kullanılmalıdır.

Anahtar kelimeler: Varis, Fitoterapi, Venöz Kapak, At Kestanesi Ekstresi.

ROLE OF PHYTOTHERAPY IN THE TREATMENT OF VARICOSE VEINS

ABSTRACT

The lengthening, bending and enlargement of the superficial veins under the skin in the lower extremities is called varicose veins. Insufficiency develops in the valves of these enlarged varicose veins. Although it is mostly seen in the superficial veins of the lower extremities, it can also be found in the spermatic cord, esophagus, anorectum and other veins. Those that form in the spermatic cord are called varicocele, and those that form in the anorectum are called hemorrhoids. Weakened vessel walls are longer, wider, and less elastic than normal, resulting in valve coaptation disorder and reflux. Recent studies suggest that valve dysfunction may precede changes in the vessel wall. Varicose veins are superficial veins that are enlarged and twisted. Varicose veins are most commonly seen in the vena saphenous magna and vena saphena parva and their branches.

In women, varicose veins classically develop during or after pregnancy and at the onset of menopause and are also associated with hormonal factors. Although considered a cosmetic

problem, varicose veins can lead to pain, loss of work power, disability and deterioration of health-related quality of life (QOL). Although the etiology may be multifactorial, the most common cause is an intrinsic morphological or biochemical abnormality in the vessel wall.

Phytotherapy, which consists of the Greek words Phyton (Plant) and Therapeia (therapy), is a treatment method created with traditional herbal medicinal products and herbal medicines. The methods used by ancient scholars such as İbn-i Sina and Lokman Hekim are based on phytotherapy. Many weeds around us are highly effective herbs that can help with a variety of major health issues. Some herbal products, especially horse chestnut extract, are used in venous system diseases. However, there are not enough studies yet on the mode of action of bioactive phytomolecules found in plants.

Phytotherapy is undoubtedly likely to bring some innovations in the medical treatment of varicose veins. However, it should be taken into account that herbal products used in venous system diseases do not cure the disease, but provide relief as long as they are used. Therefore, surgical or endovascular treatment methods should be chosen for the definitive treatment of varicose veins.

Key words: Varicose Veins, Phytotherapy, Venous Valve, Horse Chestnut Extract.
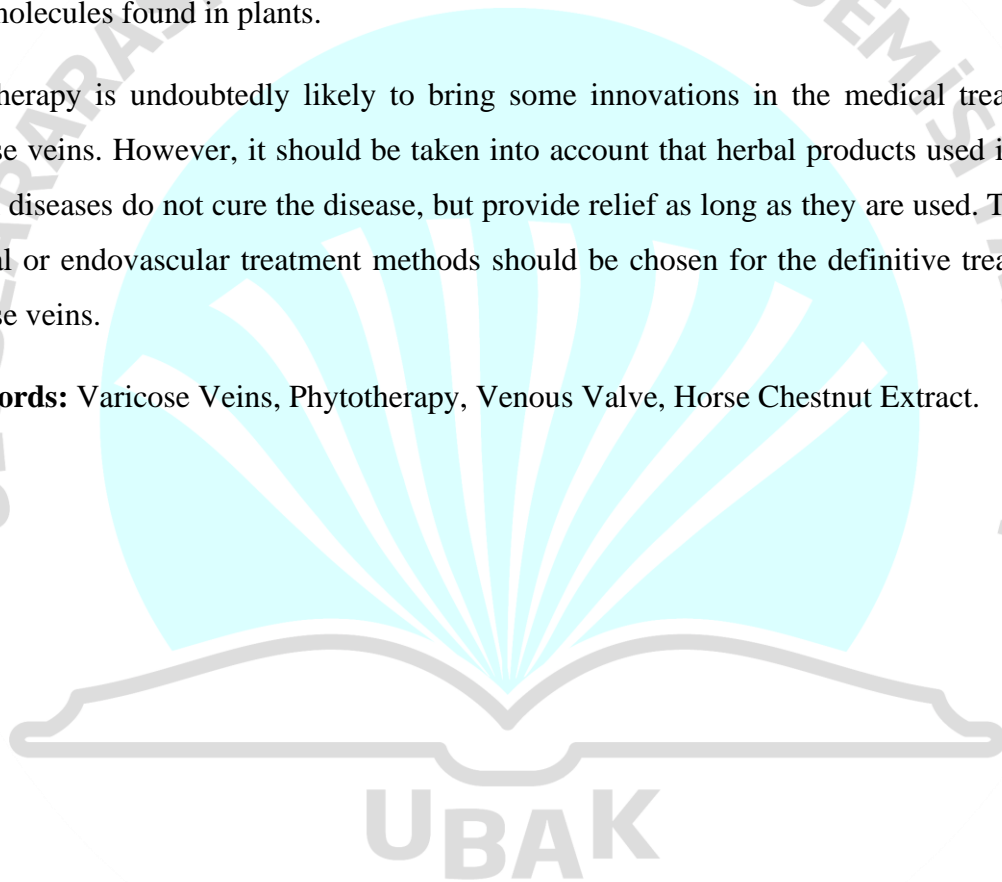
DEVELOPMENT OF PNEUMOTHORAX AFTER CARDIAC SURGERY: A LATE COMPLICATION OF COVID-19

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ABSTRACT

Coronavirus disease 2019 (COVID-19) is an infectious viral disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a respiratory viral pathogen that can cause a wide range of disease forms transmitted by airborne and droplets spread when a sick person sneezes or through contact with contaminated objects. This infectious disease has a wide range of presentations, which can range from an asymptomatic course to severe acute respiratory distress syndrome. COVID-19 promotes hypoxia and weakens the pulmonary parenchyma due to the downregulation of surfactant, loss of extracellular matrix and promotion of hypercoagulation. Weakening of the pulmonary parenchyma also predisposes to the development of pneumothorax in those with COVID-19.

We present a case of pneumothorax with massive subcutaneous emphysema as a late complication of severe Covid-19 infection. This patient was operated on and mitral valve repair was performed. The intensive care follow-up was uneventful and he was taken to the ward on the third day. Her follow-up in the ward was uneventful until the sixth postoperative day. On the sixth postoperative day, she suddenly had right-sided pleuritic chest pain and dyspnea. On physical examination, diffuse subcutaneous emphysema and decreased breath sounds in the

right hemithorax were noted. A chest radiograph showed a right-sided pneumothorax and massive subcutaneous emphysema. Tube thoracostomy was performed urgently. Following the expansion of the lung, the inserted chest tube was removed and he was discharged with full recovery.

Although the exact etiological mechanism is not fully known, bullous lung disease may develop as a result of COVID-19 infection. Long-term follow-up of recovered patients is important to better understand the possible permanent lung damage of COVID-19 disease. Therefore, it should be considered that pneumothorax may develop after cardiothoracic surgery in patients with a history of COVID-19.

Keywords: COVID-19, Bullous Lung Disease, Pneumothorax

KALP CERRAHİSİ SONRASI PNÖMOTORAKS GELİŞMESİ: COVID-19'UN GEÇ BİR KOMPLIKASYONU

ÖZET

Coronavirus hastalığı 2019 (COVID-19), şiddetli akut solunum sendromu koronavirüs 2'nin (SARS-CoV-2) neden olduğu bulaşıcı bir viral hastalıktır. SARS-CoV-2, hava yoluyla bulaşan ve hasta bir kişi hapşırdığında veya kontamine nesnelerle temas yoluyla yayılan damlacıklar yoluyla bulaşan çok çeşitli hastalık formlarına neden olabilen bir solunum yolu viral patojenidir. Bu bulaşıcı hastalık, asemptomatik bir seyirden şiddetli akut solunum sıkıntısı sendromuna kadar değişebilen geniş bir sunum yelpazesine sahiptir. COVID-19, sürfaktanın aşağı regülasyonu, hücre dışı matris kaybı ve hiper pıhtılaşmanın teşvik edilmesi nedeniyle hipoksiyi teşvik eder ve pulmoner parankimi zayıflatır. Pulmoner parankimin zayıflaması da COVID-19 hastalarında pnömotoraks gelişimine yatkınlık yaratır.

Şiddetli Covid-19 enfeksiyonunun geç bir komplikasyonu olarak masif deri altı amfizemi gelişen bir pnömotoraks olgusunu sunuyoruz. Bu hasta ameliyat edilerek mitral kapak tamiri yapıldı. Yoğun bakım takibi sorunsuz geçti ve üçüncü gün servise alındı. Koğuştaki takibi postoperatif altıncı güne kadar sorunsuzdu, Postoperatif altıncı gün aniden sağ taraflı plöretik göğüs ağrısı ve nefes darlığı başladı. Fizik muayenede sağ hemitoraksta yaygın cilt altı amfizemi ve solunum seslerinde azalma vardı. Akciğer grafisinde sağ hemitoraksta pnömotoraks ve masif subkutan amfizem saptandı. Acil olarak tüp torakostomi yapıldı. Takiplerde akciğerin ekspanse olduğu gözlendi ve şifa ile taburcu edildi.

Kesin etiyolojik mekanizma tam olarak bilinmemekle birlikte, COVID-19 hastalığı nedeniyle büllöz akciğer hastalığı gelişebilir. COVID-19 hastalığının olası kalıcı akciğer hasarını daha iyi anlamak için COVID-19'dan iyileşenlerin uzun süreli takibi önemlidir. Bu nedenle özgeçmişinde COVID-19 öyküsü olan hastalarda kardiyotorasik cerrahi sonrası pnömotoraks gelişebileceği göz önünde bulundurulmalıdır.

Anahtar Kelimeler: COVID-19, Büllöz Akciğer Hastalığı, Pnömotoraks

RECENTS ADVANCES ON THE APPLICATIONS OF BIOTECHNOLOGICAL TECHNIQUES FOR THE IMPROVEMENT OF ANIMAL NUTRITION AND FEEDS

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Abstract

With recent shortage and high-cost of animal feeds across the globe there is need to employ efficient feed production technology that is sustainable. As a result of this utilization of Biotechnology in the production of animal feeds is seen as key pathways to address these recent issues in animal feeds. Adoption of biotechnology in the production of animal feeds offers triangular benefits improvement to the animal feeds. These triangular pathways are feed additives production, value-addition to forage used as animal feed and efficient manipulation of rumen microbes for the improvement of feed utilization. Mostly these animal feed shortages are evident in developing countries owing to lack of adequate technology to process the required animal feeds according to the right formulation. Utilization of biotechnology productively will not only bring value to animal feeds but will as well help human being too as the primary consumers of the animals. These biotechnological techniques can be adopted for the assessment of quality assurance programs which is important to production of livestock products in hygienically state. Therefore, the aim of this mini research is to systematically review the applicable roles of biotechnological techniques in animal feeds production with overall benefits to contribute to the improvement of livestock feed in general.

Keywords: Animal feeds, Livestock, Biotechnology, Poultry, Production.

İLERİ ANALİZ YÖNTEMLERİ KULLANILARAK FARKLI BÖLGELERDEN ÖRNEKLENEN ÇAMUR KARİDESİNİN (*UPOGEBİA PUSİLLA*) KARAKTERİZASYONU

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ÖZET

Bu çalışma, 2021 yılında Şubat-Temmuz aylarında İzmir Körfezi Kırdeniz mevkii olarak bilinen bölgeden (ST) ve Aliağa Şakran (AŞ) sahilinden canlı olarak örneklenen çamur karideslerinin kurutulup, kuru madde miktarları üzerinden ileri analiz yöntemleri kullanılarak 2 bölge arasında farklılık olup olmadığını ortaya koymak amacıyla yapılmıştır.

Yaklaşık 100 mikron boyutunda toz haline getirilmiş örnekler ileri analiz yöntemlerine tabi tutulmuştur. Kuru madde üzerinden ileri analiz yöntemlerine tabi tutulan örnekler arasında farklılık olup olmadığı irdelenmiştir.

İleri analiz yöntemlerinden Taramalı Elektron Mikroskobu (SEM), Endüktif Ortak Plazma Kütle Spektrofotometrisi (ICP-MS), Frouer Dönüşüm Kızılötesi (FTIR) ve Elementel Analiz cihazlarında analizlere tabi tutulmuşlardır. Bunun yanı sıra çamur karidesi örneklerinin protein, yağ, kül ve kuru madde miktarları klasik yöntemlerle bölgesel ve dönemsel belirlenmiştir.

Sonuçta uygulanan inceleme teknikleri ile bazı parametrelerde görülen değişikliklerin bölgesel ve mevsimsel olarak değişiminin anlamlı olmadığı (p>0,05), bazı analizlerin ise bu farklılıkları net olarak ortaya koyduğu ve mevsimsel ve bölgesel farklılıkların belirlendiği görülmüştür (p<0,05).

Anahtar Kelimeler : Biyolojik materyaller, karakterizasyon, FTIR, SEM, ICP-MS, *Upogebia pusilla,* mamun

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TRANSPOSON ANALYZES in PLANTS UNDER ABIOTIC STRESS CONDITIONS

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ABSTRACT

Transposons are small, linear, double-stranded DNA fragments that can be displaced in a plant cell under abiotic stress conditions. Therefore, they are considered as mobile elements of the genome. Practically all known plant retrotransposons are inactive under optimum conditions. However, different abiotic and biotic stress conditions can activate them. For this reason, their mobility raises the mutation rate and occurs new genetic variation. Retrotransposons are mobile elements that are transported to a random part of the genome by converting RNA to DNA by the reverse transcriptase enzyme. Transposons are classified according to the mediators they use, as RNA elements (Class I) and DNA elements (Class II) transposons. The percentages of transposons in the genome vary between species and even between varieties of the same species. In most prokaryotes, the amount of transposons varies between 1-3%. In yeast, on the other hand, it is known that transposons make up about 3% of the genome. Transposons, which make up 3-45% of the genome in animals, cover 25-45% of the mammalian genome. Plants have the highest percentage of transposons (50-98%). Inactive transposons in the present genome of organisms transposed in the early stages of that species' evolution and settled in the chromosomal regions where it is found today. For this reason, inactive transposons are also called molecular fossils. However, the active or inactive presence of transposons is not permanent, it can be changed. Transposons are widely used for mapping studies in eukaryotes, insertion mutations, gene cloning, obtaining transgenic organisms; and is widely used for classical antibiotic resistance markers in prokaryotes. In this study, comprehensive information about transposon markers is shared. In addition, a comprehensive summary of recent studies examining transposon polymorphisms occurring under abiotic stresses in plants is given.

Keywords : Abiotic stress, DNA, Plant, Transposons.

ATIK SULARIN FARKLI PERSÜLFAT VE FARKLI AKIM KOŞULLARINDA ELEKTRO KİMYASAL OKSİDASYON YÖNTEMİ KULLANILARAK ARITIMI

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ÖZET

Elektrokimyasal oksidasyon ile farklı persülfat ve farklı akım koşullarında TOC giderim verimleri çalışılmıştır. Deneylerde 1-5 g persülfat ve 1-5 A akım şiddeti uygulanmıştır. Bir gram persülfat konsantrasyonunda 1A akım koşullarında TOC giderim verimi 5 saat sonunda %38 bulunmuştur. En yüksek TOC giderim verimi 5.0 g persülfat konsantrasyonunda gerçekleşmiştir. Persülfat konsantrasyonuna bağlı TOC giderimi doğrusal bir artış bulunmamıştır. 1A ve 2 A akım koşullarında 1 saat reaksiyon sonunda 2A akım koşullarında daha yüksek TOC giderimi elde edilmiştir. 2A akım koşullarında en yüksek TOC giderimi 4 saat sonunda elde edilmiştir. 2 g persülfat ve 2 A akım şartlarında 5 saat sonunda TOC giderim verimi %45 gerçekleşmiştir. 3 A akım değerinde farklı persülfat konsantrasyonlarında TOC gideriminde doğrusal bir artış yada azalma görülmemiştir.4 g persülfat ve 1 saat reaksiyon sonunda 2A akım koşullarında TOC giderim verimi %57 bulunmuştur. 5 saat reaksiyon sonunda 1 g,2 g,3g, 4 g ve 5 g persilfat konsantrasyonlarında TOC giderim verimleri sırasıyla %43, %38,%47,%49 ve %43 bulunmuştur. 1.0-4.0 g persülfat ve 5.0A akım koşullarında 3 saat sonunda en yüksek TOC giderim verimleri gerçekleşmiştir. 1 g, 2 g, 3 g ve 4 g persülfat konsantrasyonlarında 3.0 saat reaksiyon sonunda 5 A akım şiddetinde TOC giderim verimleri sırasıyla %65, %52, %51 ve %50 bulunmuştur. Bir saat elektrokimyasal oksidasyon sonunda en yüksek TOC giderimi 5 A akım şiddetinde gerçekleşmiştir.

Anahtar kelimeler: Elektrokimyasal oksidasyon, persülfat,TOC

ELECTROCHEMICAL TREATMENT OF AKPA CHEMICAL WASTE WATER WITH DIFFERENT PERSULPHATE(S_2O_8) AND DIFFERENT CURRENT CONDITIONS

ABSTRACT

TOC removal efficiencies were studied under different persulfate and different current conditions by electrochemical oxidation. In the experiments, 1-5 g persulfate and 1-5 A current intensity were applied. TOC removal efficiency was found to be 38% at the end of 5 hours at 1A current conditions at one gram persulfate concentration. The highest TOC removal efficiency was achieved at 5.0 g persulfate concentration. There was no linear increase in TOC removal due to persulfate concentration. After 1 hour of reaction at 1A and 2A current conditions, higher TOC removal was obtained at 2A current conditions. The highest TOC removal was obtained after 4 hours at 2A current conditions. TOC removal efficiency was 45% after 5 hours at 2 g persulfate and 2 A current conditions. There was no linear increase or decrease in TOC removal at different persulfate concentrations at 3 A current. After 5 hours of reaction, TOC removal efficiencies were found to be 43%, 38%, 47%, 49% and 43%, respectively, at 1 g, 2 g, 3 g, 4 g and 5 g persilfat concentrations. The highest TOC removal efficiencies were achieved after 3 hours at 1.0-4.0 g persulfate and 5.0A current conditions. TOC removal efficiencies of 1 g, 2 g, 3 g and 4 g persulfate concentrations were found to be 65%, 52%, 51% and 50%, respectively, at a current intensity of 5 A after 3.0 hours of reaction. After one hour of electrochemical oxidation, the highest TOC removal was achieved at a current intensity of 5 A.

Keywords: Electrochemical oxidation, persulfate,TOC
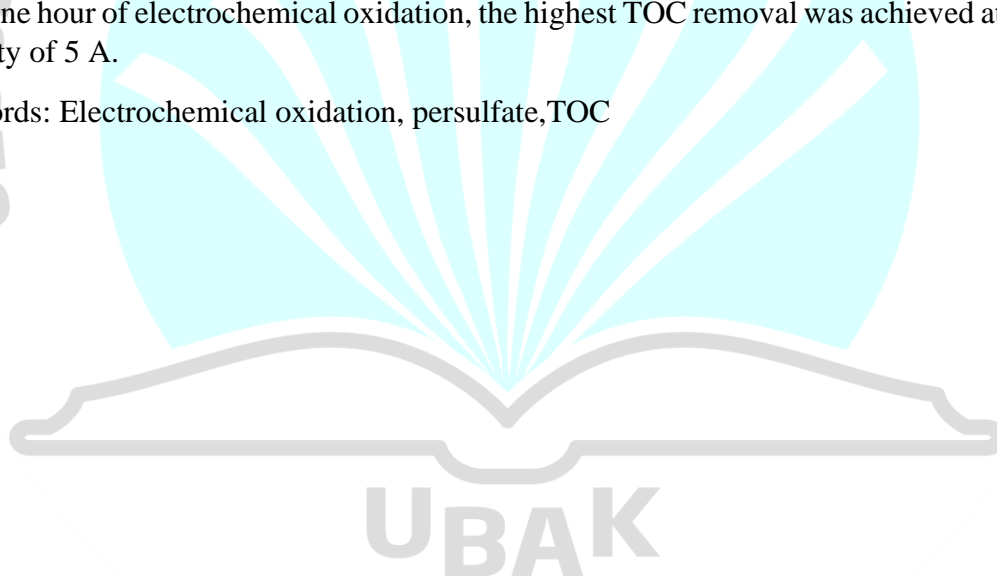
ORGANİK PEROKSİT İÇEREN ATIK SULARIN ELEKTRO KİMYASAL OKSİDASYON VE ADSORBSİYON YÖNTEMİ KULLANILARAK ARITIMI

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ÖZET

Bu çalışmada elektro kimyasal oksidasyon ve adsorpsiyon çalışmaları yapılmıştır. Tüm deneysel çalışmalar laboratuvar ölçekli reaktörlerde gerçekleştirilmiştir. Farklı akım şiddetleri(A), ve reaksiyon sürelerine bağlı olarak elektrokimyasal oksidasyon sürelerine bağlı olarak kirlilik parametrelerinin değişimi incelenmiştir. 1.0 A akım şiddetinde, 3.0 cm plaka boşluğunda bir, iki ve üçüncü saatin sonunda KOI giderim verimleri sırasıyla %5.8, %40.25 ve %57 bulunmuştur. Aynı akım şiddetinde(1.0A) 2.0 cm plaka boşluğunda birinci, ikinci ve üçüncü saaat sonunda KOI giderim verimleri sırasıyla %25.4, %34.65 ve %42.2 bulunmuştur.Yine 1.0A akım şiddetinde 1.0cm plaka boşluğunda bir, iki ve üç saat reaksiyon sonunda KOI giderim verimleri sırasıyla %17.5, %20.7 ve %32.5 tespit edilmiştir. Sonuç olarak oksidasyon süresi arttıkça KOI giderim verimi artmaktadır. Plakalar arası mesafe azaldıkça KOI giderim verimi azalmaktadır.

Aynı levha boşluklarında(3.0 cm) farklı akım şiddetlerinde(2.0A-5.0A) KOI giderim verimleri incelenmiştir. Deney koşullarının farklı olmasına rağmen sülfat gideriminde çok düşük giderim verimleri olduğu görülmüştür. Hidrojen peroksit gideriminde temel basamak anti peroksit olduğu tespit edilmiştir. 5.0A ve 3.0 cm levha boşluğunda bir ve üç saat reaksiyon sonunda KOI giderim verimi sırasıyla %33.4 ve %54.7 bulunmuştur. Akım 4.0A'e düşürüldüğünde aynı levha aralığında (3.0 cm) bir, iki ve üç saat sonunda sırasıyla KOI verimleri %19.25, %50.45 ve %33.4 verimleri elde edilmiştir.3.0 A akım koşullarında (levha arası mesafe 3.0 cm) bir, iki ve üç saat sonunda elektrokimyasal oksidasyon sonunda KOI verimleri sırasıyla %55.9, %53.05 ve %38.6 hesaplanmıştır. Son olarak akım şiddeti aynı levha açıklığında 2.0 A'e düşürüldüğünde birinci, ikinci ve üçüncü saat sonunda KOI giderimi sırasıyla %0.0, %44.3 ve %32.35 bulunmuştur. Bu deneyde atıksu önce aktif karbon ile adsorpsiyon işlemine tabi tutulmuş ve burada elde edilen atıksu elektrokimyasal oksidasyon işlemine tabi tutulmuştur. Bu çalışmada akım şiddeti 4.0A, 20 V akım ponansiyeli ve 3.0 saat reaksiyon süresi uygulanmıştır. Üç saat elektrokimyasal oksidasyon sonucunda KOI giderme verimleri %62.05 bulunmuştur. Önceki deneylerle kıyaslandığında aktif karbon+elektrokimyasal oksidasyon uygulamasının diğer deney sonuçlarına yakın olduğu bulunmuştur.

Anahtar kelimeler: Adsorpsiyon,Elektrokimyasal oksidasyon, KOI

TREATMENT OF WASTE WATERS CONTAINING ORGANIC PEROXIDE USING ELECTROCHEMICAL OXIDATION AND ADSORBATION METHOD

ABSTRACT

In this study, electrochemical oxidation and adsorption studies were carried out. All experimental studies were carried out in laboratory scale reactors. The change of pollution parameters depending on the electrochemical oxidation times depending on different current intensities (A) and reaction times were investigated. The COD removal efficiencies were found to be 5.8%, 40.25% and 57%, respectively, at 1.0 A current intensity and 3.0 cm plate space at the end of one, two and three hours. At the same current intensity (1.0A), the COD removal efficiencies were found to be 25.4%, 34.65% and 42.2%, respectively, in 2.0 cm plate space at the end of the first, second and third hours. removal efficiencies were determined as 17.5%, 20.7% and 32.5%, respectively. As a result, as the oxidation time increases, the COD removal efficiency increases. As the distance between the plates decreases, the COD removal efficiency decreases.

COD removal efficiencies were investigated at different current intensities (2.0A-5.0A) in the same plate gaps (3.0 cm). Although the experimental conditions were different, it was observed that there were very low removal efficiencies in sulfate removal. It has been determined that the basic step in hydrogen peroxide removal is anti peroxide. The COD removal efficiency was found to be 33.4% and 54.7%, respectively, after one and three hours of reaction in the 5.0A and 3.0 cm plate space. When the current is reduced to 4.0A, COD efficiencies of 19.25%, 50.45% and 33.4% were obtained, respectively, after one, two and three hours in the same plate spacing (3.0 cm). After three hours, the COD yields at the end of electrochemical oxidation were calculated as 55.9%, 53.05% and 38.6%, respectively. Finally, when the current intensity was reduced to 2.0 A at the same plate opening, the COD removal at the end of the first, second and third hours was 0.0%, 44.3% and 32.35%, respectively. In this experiment, the wastewater was first subjected to adsorption with activated carbon and the wastewater obtained here was subjected to electrochemical oxidation. In this study, a current of 4.0A, a current potential of 20 V and a reaction time of 3.0 hours were applied. After three hours of electrochemical oxidation, the COD removal efficiencies were found to be 62.05%. When compared with the previous experiments, it was found that the application of activated carbon + electrochemical oxidation was close to the results of other experiments.

Keywords: Adsorption, Electrochemical oxidation, COD

KARABAĞ (AZERBAYCAN) İŞGALİ NEDENİYLE YÖRE ARAZİ ÖRTÜSÜ VE KULLANIMINDAKİ DEĞİŞİMLERİN UZAKTAN ALGILAMA YÖNTEMLERİ İLE TESPİT VE ANALİZİ

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ÖZET

Azerbaycan'ın 30 yıla yakın bir süre Ermenistan tarafından işgal altında kalan toprağı Karabağ'ın arazi kullanımı ve arazi örtüsünde önemli değişikler olmuştur. Şehirleşmenin durduğu, ormanların yakıldığı ve tahrip edildiği, tarımsal faaliyetin durduğu işgal süreci, arazi örtüsü ve kullanımında ciddi değişiklere neden olmuştur.

Bu çalışmada özellikle geriye dönük veri elde etmenin neredeyse olanaksız olduğu bu dönemde, tek veri kaynağı haline gelen Uzaktan Algılama yöntemi ve bu verilerin analizinde ise Coğrafi Bilgi Sistemleri kullanılarak Karabağ bölgesindeki değişim incelenmiştir. 1986-2021 yılları arasında altı farklı zamana ait LANDSAT 5 TM, LANDSAT 7 ETM+ ve LANDSAT 8 OLI/TIRS uydu görüntülerine literatürde önerilen değişik indekslerle beraber "temel bileşen analizlerini" içeren yerleşim alanı analiz indekleri ile yerleşim alanlarının tespit ve değişimi zamansal olarak haritalanmaya çalışılmıştır.

Normalize Edilmiş Fark Yerleşim Alanı İndeksi (NDBI) ve Temel Bileşen Analizi (PCA) sonuçlarının ortak değerlendirilmesi sonucu, 1991 senesi itibarı ile Ağdam şehri ve etraf yerleşim alanları 25,13 km2'lik alanı kapsarken, 2001 senesi itibarı ile 24,85 km2'lik gerileme ile 0,28 km2 alanı kapsamıştır. Eski Ağdere şehri ve etraf yerleşim alanları 1991 senesi itibarı ile 11,33 km2'lik alanı kapsarken, 2001 senesi itibarı ile 11,05 km2'lik gerileme ile 0,28 km2 olmuştur. Füzuli şehri ve etraf yerleşim alanları 1991 senesi itibarı ile 8,49 km2'lik alanı kapsarken, 2001 senesi itibarı ile 7,15 km2'lik gerileme ile 1,34 km2 olmuştur. Çalışma alanına uygulanan Modifiye Edilmiş Fark Su Alanı İndeksi (MNDWI) sonucuna göre ise, 1991 senesi itibarı ile Ağdam kent merkezinde yerleşim alanları 5,8 km2'lik alanı kapsarken, 2001 senesi itibarı ile 4,44 km2'lik gerileme ile 1,36 km2 alanı kapsamıştır. Ağdere kent merkezinde yerleşim alanları 1991 senesi itibarı ile 0,95 km2'lik alanı kapsarken, 2001 senesi itibarı ile 0,27 km2'lik gerileme ile 0,68 km2 olmuştur. Füzuli kent merkezinde yerleşim alanları 1991

senesi itibarı ile 3,49 km2'lik alanı kapsarken, 2001 senesi itibarı ile 2,92 km2'lik gerileme ile 0,57 km2 olmuştur.

Anahtar Kelimeler : Uzaktan algılama, Coğrafi Bilgi Sistemleri, LANDSAT, Karabağ, Spektral indeks.

DETECTION AND ANALYSIS OF CHANGES IN THE LAND COVER AND LAND USE DUE TO THE INVASION OF KARABAKH (AZERBAIJAN) BY REMOTE SENSING METHODS

ABSTRACT

There have been significant changes in the land use and land cover of Karabakh, Azerbaijan's land occupied by Armenia for nearly 30 years. During the occupation period, where urbanization stopped, forests were burned and destroyed, agricultural activities stopped, it caused serious changes in land cover and use.

In this study, especially in this period when it is almost impossible to obtain retrospective data, the change in the Karabakh region has been examined by using the Remote Sensing method, which has become the only data source, and the Geographical Information Systems in the analysis of these data. Between the years 1986-2021, LANDSAT 5 TM, LANDSAT 7 ETM+ and LANDSAT 8 OLI/TIRS satellite images belonging to six different periods were tried to be mapped temporally with the settlement analysis indices, which include "principal component analyzes" along with various indexes suggested in the literature.

As a result of the joint evaluation of the Normalized Difference Settlement Area Index (NDBI) and Principal Component Analysis (PCA) results, while the city of Agdam and its surrounding settlements covered an area of 25.13 km2 as of 1991, 24.85 km2 as of 2001 decreased and became 0.28 km2. While the old Agdere city and its surrounding settlement areas covered an area of 11.33 km2 as of 1991, it became 0.28 km2 with a decrease of 11.05 km2 as of 2001. While the city of Fizuli and its surrounding settlement areas covered an area of 8.49 km2 as of 1991, it became 1.34 km2 with a decrease of 7.15 km2 as of 2001. According to the result of the Modified Difference Water Area Index (MNDWI) applied to the study area, as of 1991, the residential areas in Ağdam city center covered an area of 5.8 km2, while as of 2001, a decrease of 4.44 km2 was 1.36 km2 covered the area. While the settlement areas in Ağdere

city center covered an area of 0.95 km2 as of 1991, it became 0.68 km2 with a decrease of 0.27 km2 as of 2001. While the settlement areas in Füzüli city center covered an area of 3.49 km2 as of 1991, it became 0.57 km2 with a decrease of 2.92 km2 as of 2001.

Keywords: Remote sensing, Geographic Information Systems, LANDSAT, Karabakh, Spectral index.

FARKLI SICAKLIKLARDA TAVLANAN GRAFİT KATKILI KALAY OKSİT NANOPARÇACIKLARIN YAPISAL VE MORFOLOJİK ÖZELLİKLERİNİN İNCELENMESİ

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ÖZET

Bu çalışmada, Grafit katkılı kalay oksit (SnO_2) nanoparçacıkları sol-jel sentezleme yöntemi ile üretilmiştir. Saf SnO_2 nanoparçacıklarını üretmek için, 40 ml etanole 2 gram Kalay(II) klorür dihidrat ($SnCl_2 \cdot 2H_2O$) eklendi (Karışım-1) ve tüm parçacıklar çözünene kadar manyetik karıştırıcı ile karıştırıldı. Bu karışıma 10 ml etanol daha eklendi ve daha sonra bu çözeltinin pH değeri amonyum hidroksit (NH_4OH) ile 10'a ayarlandı. Nihai karışım 60 C°'de 2 saat süreyle karıştırıldı. Elde edilen sol-jel çözeltisi fitre kağıdı ile süzüldü. Süzme işleminden sonra çökeltiler sırasıyla etanol ve saf su temizlendi. Etüvde 100 C°' de 2 saat süreyle kurutuldu. Elde edilen nanoparçacıklar 450 C° ve 600 C°'de tavlandı. Bu numuneler sırasıyla SnO_2-450 ve SnO_2-600 olarak isimlendirildi. Grafit katkılı numunelerde aynı şekilde üretildi. Tek fark olarak 10 ml etanole ağ.% 1 oranında grafit eklendi ve ultrasonik karıştırıcıda 30 dakika süre ile karıştırıldı. Daha sonra bu karışım Karışım-1'e eklendi ve yukarıdaki tüm işlemler tekrarlandı. Grafit katkılı SnO_2 numuneleri 450 C° ve 600 C° tavlama sıcaklıkları için sırasıyla SnO_2-G-450 ve SnO_2-G-600 olarak isimlendirildi. Tavlama sıcaklıklarının ve grafit katkısının değişiminin oluşan nanoparçacıkların yapısal ve morfolojik özelliklerine etkisi incelendi. Üretilen nanoparçacıkların yapısal ve morfolojik özellikleri XRD, EDX ve FE-SEM ile araştırıldı. Tüm numunelerde SnO_2'ye ait karakteristik piklere rastlanmadı ve pik şiddetleri tavlama sıcaklığı ve grafit katkısı ile arttığı görüldü. 600 C°'de tavlanan numunelerin pikleri daha keskindir. Grafit katkılı numunelerde ikincil fazlara veya grafite ait piklere rastlanmadı. Elde edilen parçacıklar nano-boyuttadırlar. Saf ve grafit katkılı SnO_2 nanoparçacıkları başarıyla üretildiği gürüldü. Sonuçlar, sentezlenen nanoparçacıkların yarıiletken metal oksit içeren elektronik cihazlarda kullanılabileceğini göstermektedir.

Anahtar Kelimeler: Sol-Jel, Nanomalzeme, Grafit, Kalay Oksit.

DİNAMİK SOL-JEL SPİN KAPLAMA YÖNTEMİ İLE ÜRETİLEN H-BN KATKILI CDO İNCE FİLMLERİN KARAKTERİZASYONU

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ÖZET

Bu çalışmada saf kadmiyum oksit (CdO) ve hekzagonal bor nitrür (h-BN) katkılı ince filmler dinamik sol-jel spin kaplama yöntemi ile üretildi. 10 ml 2-methoxyethanol'e 0.5 molar (M) kadmiyum asetat dihidrat ($C_4H_6CdO_4 \cdot 2H_2O$) eklendi ve tozların tamamı çözününceye kadar manyetik karıştırıcı ile karıştırıldı. Daha sonra karıştırma işlemi devam ederken 0.5 M monoethanolamine bu çözeltiye eklendi ve birlikte 60 °C'de 2 saat süreyle manyetik karıştırıcı ile karıştırıldı. Böylelikle saf CdO ince filmini üretmede kullanılacak sol-jel hazırlanmış oldu. h-BN katkılı ince filmleri üretmek için ise saf CdO sol-jeline ağ.% 1 oranında piyasadan temin edilen h-BN katıldı ve ilk olarak ultrasonik olarak 30 dakika süre ile karıştırıldı. Daha sonra birlikte 60 °C'de 2 saat süreyle manyetik karıştırıcı ile karıştırıldı ve katkılı ince filmler için gerekli sol-jel elde edilmiş oldu. Altlık olarak 10 x 10 mm^2 ölçülerinde kesilmiş ve temizlenmiş (sırasıyla 5'er dakika aseton, etil alkol ve saf su ile temizlenmiş ve azot gazı ile kurutulmuş) mikroskop camları kullanıldı. Bu camlar üzerine iki damla çözelti döküldü ve 1500 d/dk'da 30 saniye süre ile kaplama işlemi dinamik modda gerçekleştirildi. Kaplama işleminden sonra camlar 150 °C'de 10 dakika hot platede kurutuldu ve son olarak 450 °C'de 1 saat süreyle tavlandı. Böylelikle ince filmler elde edilmiş oldu. İnce filmleri oluşturan fazların çeşitleri X-ışını kırınım analizi (XRD) ile karakterize edildi. İnce filmleri meydana getiren yapıların morfolojileri alan emisyon taramalı elektron mikroskobu (FE-SEM) ile belirlendi. İnce filmlerin kimyasal kompozisyonları ile enerji dağılımı X-ışını spektrometresi (EDX) analizinden yararlanarak tespit edildi. Şekil 1'de görülen XRD kırınım desenlerinden üretilen ince filmlerin yüksek saflıkta olduğu ve pik şiddetleri ve konumlarının h-BN katkısından etkilendiği görüldü. Saf CdO numunesinde 33.06º, 38.36º, 55.39º, 65.96º ve 69.32º 2θ derecelerinde görülen yüksek şiddetli pikler (111), (200), (220), (311) and (222) düzlemlerine karşılık gelmektedir. Bu pikler h-BN katkılı CdO numunesinde ise 32.96º, 38.31º, 55.32º, 65.89º ve 69.25º 2θ derecelerinde görülmüştür. XRD analizleri JCPDS kart numarası 005-0640 ile uyumludur. h-BN katkısı ile CdO'nun karakteristik pikleri daha düşük 2θ derecelerine kaymıştır. Üretilen ince filmler nano-yapılardan meydana gelmiştir. Bu nano yapılar üst üste istiflenmiş ve yer yer topaklanmış neredeyse küresel biçimdedir. Üretilen ince filmlerin opto-elektronik uygulamalarda kullanım alanı bulabileceği sonucuna varıldı.

Anahtar Kelimeler İnce film, CdO, h-BN, Nanomalzeme, Opto-elektronik
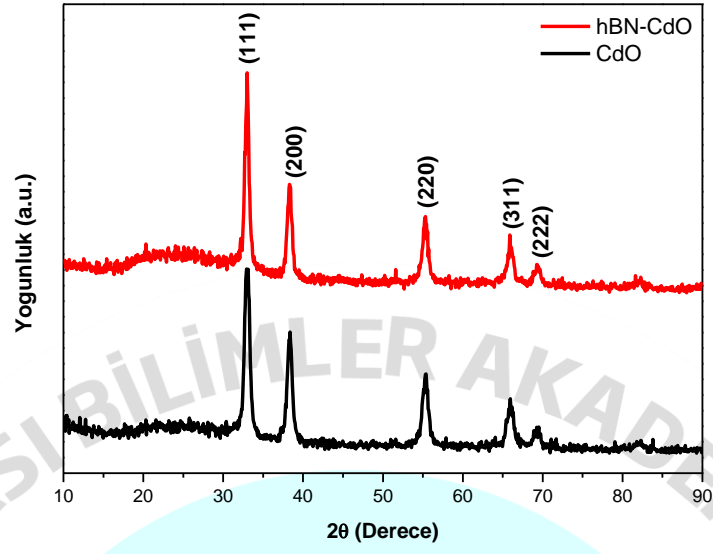
Şekil 1. Üretilen ince filmlerin XRD analiz sonuçları.
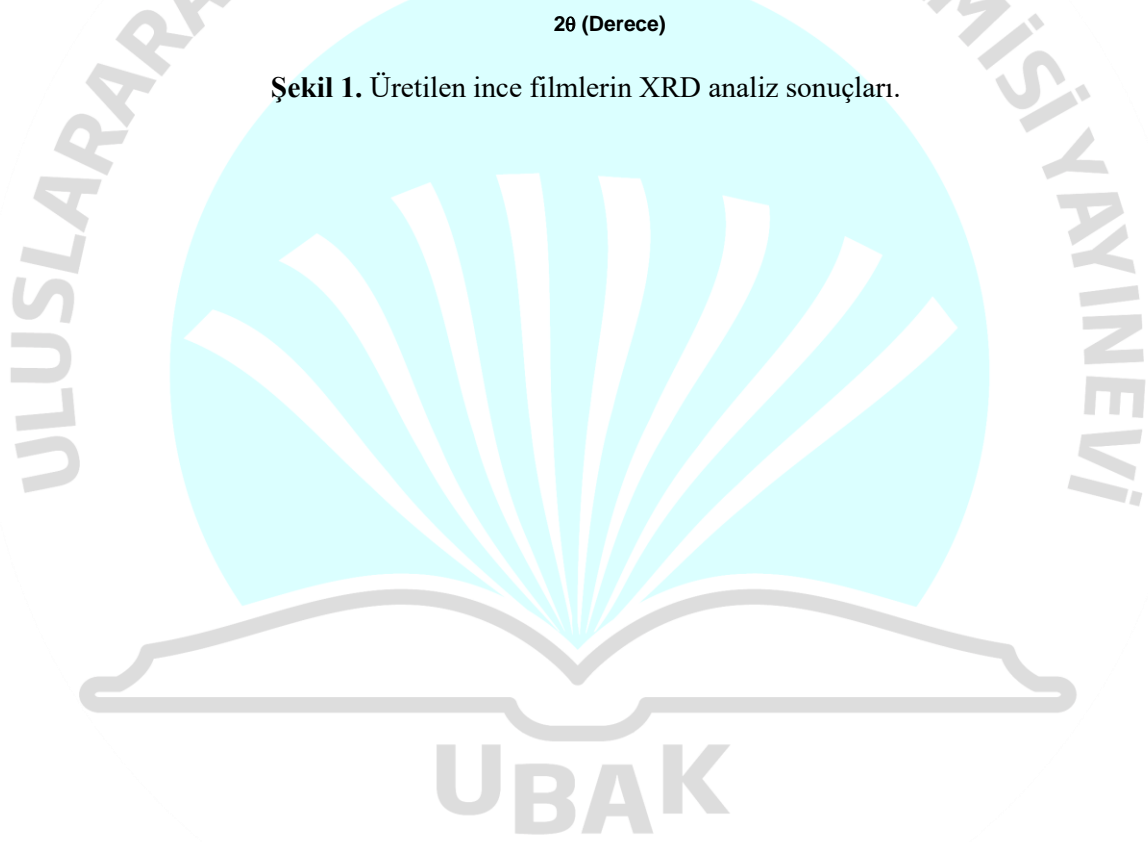
HEART DISEASE IDENTIFICATION COMPARISON WITH ENSEMBLE AND BASE MACHINE LEARNING ALGORITHMS

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ABSTRACT

Data science continuously generate data from various sensors, medical devices and even through smartphones or wearables. Such a great amount of data cannot be analyzed with human support alone. In particular, automated analyses of this data requires automated approaches such as Machine Learning (ML). Recent success of ML algorithms in data analysis, let them to be used in health sciences either for disease prediction or treatment. According to Center for Disease (CDC), heart disease is one of the principal death causes. In principle, health literature defines main risk factors of heart disease with high blood pressure, high cholesterol, smoking, diabetes or obesity. The main goal of medical informatics or ML is to determine the most key factors causing heart disease. In other words, identification of key factors causing heart disease may result as countermeasures to be taken. From ML point of view, the algorithms may help to detect hidden patterns, i.e. heart disease contributor factors, from data. In this study, we compared two groups of ML algorithms namely ensemble and base learners in heart disease identification performance. More precisely, we compared Random Forests (RF), Gradient Boosting Classifier (GBC), AdaBoost (ADB), Extra Tree classifier (ET) as ensemble predictors and Decision Tree (DT), Gaussian Naïve Bayes (GNB), Logistics Regression (LR) and K-nearest Neighbor (KNN) as base classifiers. We made use of Accuracy (Acc) metric for comparison and we obtained LR with the best result of 91.28%.

Keywords: Heart disease prediction, heart disease indicators, ensemble learning, machine learning.

EVALUATION OF SUPERVISED MACHINE LEARNING ALGORITHMS IN PREDICTION OF LUMPY SKIN DISEASE

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ABSTRACT

Automated disease diagnosis with machine learning techniques is a widely studied field in data science. As the growth of data increased, automated analysis of the data becomes important. In particular health science also needs to analyze data automatically. Either human health or animals (possibly plants) may benefit from this approach. Lumpy skin disease virus (LSDV) is such a health issue in cattle, it also candidate to utilize machine learning algorithms to predict the disease. In this study, the object is to predict LSDV based on meteorological and geological features with the use of supervised machine learning algorithms. In this context, some widely used predictors, i.e. Naïve Bayes (NB), Support Vector Machine (SVM), Decision Tree (DT), K-Nearest Neighbor (KNN) and Random Forests (RF) were selected from literature. The algorithms are trained and tested on top of ten-fold cross validation (10-CV) scheme. The performance of the algorithms are evaluated with the use of Accuracy (Acc) and F1-score (F1). The best disease prediction performances of the algorithms was about 97% and they are promising in this context. Since the algorithms made use geospatial and meteorological parameters while making prediction, the precise disease identification rates allow the mentioned algorithms to help disease screening and taking preventive countermeasures.

Keywords: Disease prediction, health, veterinary, machine learning, lumpy skin disease.

INVESTIGATION OF WELDING TRANSFORMER MAGNETIZING CIRCUIT PARAMETERS USING PSPICE SIMULATION MODEL

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ABSTRACT

This paper deals with the novel methodology for the application of a PSPICE simulation model of a loaded welding transformer, examining some of its possibilities in the prediction of the behavior of the transformer. A set of initial experimental measurements over the real welding transformer is made to find out the component values for the simulation model. The PSPICE transformer model, being proved as a good representation of the real welding transformer, is further utilized for an analysis of the real welding transformer behavior over a wide range of working conditions. The proposed methodology in the paper is used for the determination of the magnetizing circuit parameters of the welding transformer. However, this procedure applies to any power transformer for the determination of parameter values. Some of the results obtained with this study and some recommendations on the practical application are presented. A comparison between the measured and the simulated parameters is made. The results show very good agreement which proves the methodology is accurate.

Keywords: Circuit parameters, Practical measurements, PSPICE model, Welding transformer

KAYNAK TRANSFORMATÖRÜ MIKNATISLANDIRMA DEVRE PARAMETRELERİNİN PSPICE SİMÜLASYON MODELİ İLE İNCELENMESİ

ÖZET

Bu çalışma, yüklü bir kaynak transformatörünün bir PSPICE simülasyon modelinin uygulaması için yeni bir metodoloji ile ilgilenmekte, ve transformatör davranışlarının tahminindeki bir kısım olasılıkları incelemektedir. Simülasyon modelindeki bileşen değerlerini bulmak için, gerçek kaynak transformatörü üzerinde ilk deneysel ölçümler yapılmaktadır. PSPICE transformatör modeli ile gerçek bir kaynak transformatörünün iyi bir temsili olduğu kanıtlanmakta ve gerçek kaynak transformatör davranışının geniş çalışma koşulları üzerindeki analizlerinden faydalanılmaktadır. Çalışmadaki önerilen metodoloji, kaynak transformatörünün mıknatıslanma devresine ait parametrelerin belirlenmesi için kullanılır. Bununla birlikte, bu prosedür herhangi bir güç transformatörünün parametre değerlerinin belirlenebilmesi içinde uygulanabilir. Bu çalışma ile elde edilen sonuçların bir kısmı ve pratik uygulamalarda kullanılan bazı önerilerde sunulmuştur. Ölçülen ve simülasyonu yapılan parametreler arasında bir karşılaştırma yapılmıştır. Sonuçlar, metodolojiyi doğru olarak kanıtlayan çok iyi bir uyuşma göstermektedir.

Anahtar Kelimeler: Devre parametreleri, Pratik ölçümler, PSPICE modeli, Kaynak transformatörü

RETINAL BLOOD VESSEL SEGMENTATION USING TRANSFER LEARNING ON UNET

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ABSTRACT

With the aid of morphological features of the eye, such as thickness and tortuosity, segmentation of the retinal blood vessels plays a significant role in the diagnosis of illnesses like diabetes and hypertension. This process needs a lot of time with trained people and even highly experienced ophthalmologists can have different conclusions on an example when doing it manually. With the recent advancements in Deep Learning, automated retinal blood vessel segmentation showed improvements. In this project, we used UNET, a Convolutional Neural Network-based architecture specifically designed for medical images, by designing the network with the Residual Network approach which has proven high efficiency on the very deep neural networks. We developed our method with Transfer Learning, a technique that launches the weights from the previously trained network instead of starting the learning with random values, we also used Data Augmentation since the publicly available DRIVE dataset contains only 20 training and 20 test images. We applied our model to several state-of-the-art pre-trained network architectures such as VGG, Res Net, and Efficient Net. Consequently, we reached a high efficiency and the outcomes far more than a professional ophthalmologist's manual way. We reached 96.88% accuracy with VGG19 architecture by freezing the first 12 layers of the network. With this work, we have shown that transfer learning has promising results. With the new improvements in transfer learning, it will not only decrease the time for training but also help to solve health problems like the blindness of the patient on a global scale.

Key Words: Deep Learning, Transfer Learning, UNET, Retinal Blood Vessel, Segmentation

BAKIR MİNERALİNİN ÇEVRESEL RİSKLERİ ve İNSAN SAĞLIĞI ÜZERİNE OLAN ETKİLERİ

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ÖZET

Bakır (Cu), Dünya ekonomisi için en önemli metallerden birisini oluşturmaktadır. Bakır madenciliği atıklarının uygun yöntemlerle bertaraf edilmemesi, çevreye salınan yüksek konsantrasyondaki toksik elementler nedeniyle insan sağlığını tehdit edebilmektedir. Bakır insan sağlığı için önemli bir mineraldir ve aynı zamanda alınan miktara bağlı olarak toksik olabilir. Cu, insan vücudu için önemli bir mineral olup, insanlarda sinir sisteminin ve metabolizmanın düzgün çalışmasına ve sağlıklı kemiklere sahip olmasına yardımcı olmaktadır. Temel bir eser element olan bakırın vücuttaki başlıca biyokimyasal işlevi, doğrudan bakır içeren metaloenzimlerdeki rolünden kaynaklanmaktadır. Bakır mineralinin eksikliği demir emilimini engeller ve ciddi bakır eksikliğinden dolayı anemi gelişebilir. Ayrıca aşırı yorgunluk, sık hastalanma, öğrenme zorluklarına ve kemiklerde kırılganlığın oluşmasına neden olur. Vücutta Cu birikmesiyle meydana gelen Wilson hastalığı kalıtsaldır. Bu hastalığın sebep olan Cu, birçok gıdada yer almaktadır. Tarım topraklarında bulunan Cu içeriğine göre, bu arazilerde yetişen gıdaların Cu miktarları değişkenlik gösterebilmektedir. Karaciğer ve kabuklu deniz ürünleri yüksek oranda Cu içermektedir. İnsan vücudunda fazla miktarda bulunan Cu, idrar yolu ile atılmaktadır. Ancak Wilson hastalığına sahip kişilerde, fazla Cu vücuttan atılmaz ve beyin, böbrek, karaciğer ve gözlerdeki kornealarda birikebilmektedir. Ayrıca iris kenarında ve göz korneasının kenarında yeşil-kahverengi Cu birikintileri olan Kayser Fleischer halkaları da gelişebilir. Sinir sistemi hasarı ile ortaya çıkan Wilson hastalarında ise genellikle Kayser Fleischer halkaları bulunabilir. Ancak bu halkalar, karaciğer hasarı belirtileri olan hastaların yaklaşık % 40 ile % 66'sında gözlenir. Çocuklarda bu hastalığın tanısı erişkinlere göre daha zordur. Çünkü klinik semptomlar göstermeyebilir ve Kayser Fleischer halkaları 7 yaşından önce nadiren gözlenir. Bu bildiride bakır mineralinin çevresel riskleriyle birlikte insan sağlığı üzerine olan etkileri incelenmiştir.

Anahtar Kelimeler : Bakır, insan sağlığı, çevre.

KURŞUN VE ÇİNKO AĞIR METALLERİNİN ÇEVRE ÜZERİNE OLAN ETKİLERİ

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ÖZET

Endüstriyel gelişmeler her geçen gün yeni kirlilik faktörleri oluşturmakta ve ağır metaller ise bu kirlilik faktörleri içinde en önemlilerinden birisini oluşturmaktadır. Ağır metal kirliliği dünyanın yüz yüze kaldığı ciddi çevresel problemlerden birisini oluşturmaktadır. Maden endüstrisi en önemli ekonomik aktiviteler arasındadır. Çinko ve kurşun madenleri yaygın olarak aynı bölgede ve bütün dünyada bulunmaktadır. Büyük bir bölümü hala aktif durumdadır. Bu metallerin her ikisi de, onları çok çeşitli uygulamalar için uygun kılan benzersiz fiziksel ve kimyasal özelliklere sahiptir. Ancak madencilikle ilgili endüstriler, ağır metallerden gelen çevresel kirliliğin en büyük kaynaklarından bazılarını da oluşturmaktadır. Büyük miktarda çinko ve kurşun madencilik endüstrisi yoluyla çevreye ulaşmakta, su kaynaklarını, toprağı ve bitkileri etkilemektedir. Ağır metallerin neden olduğu su kirliliği, dünya çapında ekolojik bozulmaya yol açan, su yaşamını, tarımı ve insan sağlığını tehdit eden artan bir çevresel sorundur. Bununla birlikte ağır metal içeren topraklarda yetiştirilen ürünlerin tüketilmesi sonucunda insan sağlığı üzerine de zararlı etkileri bulunmaktadır. Kurşun maruziyetinin insan üzerindeki olumsuz etkileri, sinir sistemi hasarı, yavaş büyüme, gelişme, öğrenme, davranış, işitme ve konuşma sorunlarıyla birlikte okulda düşük performans ve dikkat etme yeteneğinde azalma şeklinde sıralanabilmektedir. Çinko ise ökaryotik hücreler için gerekli bir besin elementidir. Yüzlerce protein ve enzimde önemli bir iyon olarak bulunmaktadır. Çinko aynı zamanda kemiklerin büyümesini ve boyunu iyileştirdiği yapılan araştırmalarla kanıtlanmıştır. Ancak çinkonun aşırı derecede alımı, insan metabolizmasında mide krampları, baş dönmesi, yorgunluk ve ishale neden olmaktadır. Deney hayvanları ile yapılan çalışmalar sonucunda da kanserojenik etkisinin saptandığı belirtilmiştir. Bu bildiride çevre açısından büyük bir tehdit oluşturan önemli ağır metallerden kurşun ve çinkonun çevre üzerine olan etkileri değerlendirilmiştir.

Anahtar Kelimeler: Ağır metal, çevre, kirlilik.

THE EFFECTS OF ARM RISE AND HUB ANGLE CHANGE OF A MORPHING QUADROTOR ON LONGITUDINAL FLIGHT

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ABSTRACT

Machines that are heavier than air and can fly are called aircraft. Four fundamental forces act on aircraft. These; weight, lift, thrust and drag. Types of aircraft are called aircraft, helicopters. It is classified as rotary wing and fixed wing. Rotary-wing aircraft generate a force by the rotors turning the horizontal propellers, the upward movement will occur when the total force, according to the number of rotors, overcomes the weight of the aircraft. Rotary-wing aircraft are more unstable than fixed-wing aircraft, as their orientation is achieved by adjusting the rotational speed of the rotors. This is an important research topic for academic studies. The aircraft can be controlled by flight computers. Rotary-wing aircraft are simpler in structure and easier to maintain. The processing speed of the flight computers on the aircraft can maintain stability by calculating the physical changes. The flight control computer enables different controllers to be designed and applied to the aircraft. In this study, the rotors of a rotary wing aircraft are raised by activating the joints connected to the fuselage, reducing the distance between the rotor axes, narrowing the aircraft and its effects on longitudinal flight. The resulting shape change causes the aircraft's responses to the given commands to change. It is shown by graphs that the main reason for this is the changing moments of inertia. Assuming that the rotor and propellers are a point mass, the rise of the arms will cause the point masses to approach the center of gravity and this will cause the moment of inertia to change. Appropriate controller design will be carried out for the non-linear aircraft using the modern control method. The proportional coefficient (50), integral coefficient (5), derivative coefficient (50) determined for the PID controller design will be compared with similar studies that will be used. The controllability will be calculated and a simulation flight will be performed in the MATLAB Simulink program and the obtained data will be compared with previous studies.

Keywords: Rotary Wing Aircraft, State Space Model, PID, Morphing

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STATISTICAL SCREENING OF MEDIUM COMPONENTS ON ETHANOL PRODUCTION FROM CASHEW APPLE JUICE USING SACCHAROMYCES DIASTICUS

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Abstract:

In the present study, effect of critical medium components (a total of fifteen components) on ethanol production from waste cashew apple juice (CAJ) using yeast Saccharomyces diasticus was studied. A statistical response surface methodology (RSM) based Plackett-Burman Design (PBD) was used for the design of experiments. The design contains a total of 32 experimental trails. The effect of medium components on ethanol was studied at two different levels such as low concentration level (-) and high concentration levels (+). The dependent variables selected in this study were ethanol concentration (g/L) and cellmass concentration (g/L). Data obtained from RSM on ethanol production were subjected to analysis of variance (ANOVA). In general, initial substrate concentration significantly influenced the microbial growth and product formation. Of the medium components evaluated, CAJ concentration, yeast extract, $(NH_4)_2SO_4$, and malt extract showed significant effect on ethanol fermentation. A second-order polynomial model was used to predict the experimental data and the model fitted the data with a high correlation coefficient ($R^2 > 0.98$). Maximum ethanol (15.3 g/L) and biomass (6.4 g/L) concentrations were obtained at the optimum medium composition and at optimum condition (temperature-30°C; initial pH-6.8) after 72 h fermentation using S.diasticus.

Keywords: cashew apple juice, ethanol, fermentation, yeast, response surface methodology

MOLECULAR ANALYSIS OF SOMACLONAL VARIATION IN TISSUE CULTURE DERIVED BANANAS USING MSAP AND SSR MARKERS

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Abstract:

The project was undertaken to determine the effects of modified tissue culture protocols e.g. age of culture and hormone levels (2,4-D) in generating somaclonal variation. Moreover, the utility of molecular markers (SSR and MSAP) in sorting off types/somaclones were investigated.

Results show that somaclonal variation is in effect due to prolonged subculture and high 2,4-D concentration. The resultant variation was observed to be due to high level of methylation events specifically cytosine methylation either at the internal or external cytosine and was identified by methylation sensitive amplification polymorphism (MSAP).Simple sequence repeats (SSR) on the other hand, was able to associate a marker to a trait of interest.

These therefore, show that molecular markers can be an important tool in sorting out variation/mutants at an early stage.

Keywords: Methylation, MSAP, somaclones, SSR, subculture, 2, 4-D.

TOXIC EFFECT OF SODIUM NITRATE ON GERMINATING SEEDS OF VIGNA RADIATA

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Abstract:

Sodium nitrate has been used industrially in a number of work fields ranging from agriculture to food industry. Sodium nitrate and nitrite are associated with a higher risk of cancer in human beings. In present study, the effect of sodium nitrate on germinating seeds was studied. Two different sets of ungerminated Vigna radiata seeds were taken. In one set Vigna radiata seeds were soaked in distilled water for 4 hours and they were allowed to germinate in distilled water (Control) and 0.1 to 1% and 10% concentrations of sodium nitrate ($NaNo_3$). In soaked seed set, on 2nd day radical developed in control and 0.1 to 1% concentrations of sodium nitrate. Seeds size was enlarged in 1% and 10% concentrations of sodium nitrate. On 3rd day in 0.1% sodium nitrate length of the radicle was 7.5cm with one leaf let and control sample showed 9cm with one leaflet. On 5th day in 0.1% sodium nitrate length of the radicle was 10 cm with one leaf let and control sample showed 11.5cm with one leaflet. No radicle developed in 1 and 10% $NaNo_3$ concentrations. On 10th day all plants including control were dead. More number of mitotic cells was observed in apical root meristems of control germinating seeds and less mitotic cells were observed in 0.1% $NaNo_3$ germinating seeds. But cells were elongated in 0.9% $NaNo_3$ concentration and particles are deposited in the cells and no mitotic cells were observed. In other sets, dry seeds were allowed to germinate in Distilled water (control) and in 0.1 to 1% and 10% concentrations of sodium nitrate. In dry seed set, on 2nd day radicle developed from control set. In 0.1 to 1% concentrations of sodium nitration seed enlarged in size but but not allowed germination. But in 10% $NaNo_3$ seeds coat colour was changed from dark green to brown. On 3rd day the radicle was developed in 0.1% concentration of $NaNo_3$. No growth of radicle was observed in 0.3 to 10% concentrations of $NaNo_3$ but plumule was observed in control plant. Seed coat color was changed from dark green to brown in color in 1% and 10% $NaNo_3$. On 5th day in control seeds the radicle growth was 11cm and 0.1% $NaNo_3$ concentration was 1.3 cm. On 10th day all plants including control were dead. More number of mitotic cells was observed in apical root meristems of control germinating seeds and less mitotic cells were observed in 0.1% $NaNo_3$ germinating seeds. At higher concentrations of $NaNo_3$ allowed seed germination in soaked seeds but produced radicle decay. In comparison to it, in dry seed set, germination of seeds observed only in 0.1% $NaNo_3$ concentration. The inhibitory effect of $NaNo_3$ on seed germination is due to reduction of water imbibition and mitotic activity.

Keywords: Germinating seeds, $NaNo_3$, Vigna radiate, mitotic activity.

INVESTIGATION ON TOXICITY OF MANUFACTURED NANOPARTICLES TO BIOLUMINESCENCE BACTERIA VIBRIO FISCHERI

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Abstract:

Acute toxicity of nano SiO_2, ZnO, MCM-41 (Meso pore silica), Cu, Multi Wall Carbon Nano Tube (MWCNT), Single Wall Carbon Nano Tube (SWCNT) , Fe (Coated) to bacteria Vibrio fischeri using a homemade luminometer , was evaluated. The values of the nominal effective concentrations (EC), causing 20% and 50% inhibition of biouminescence, using two mathematical models at two times of 5 and 30 minutes were calculated. Luminometer was designed with Photomultiplier (PMT) detector. Luminol chemiluminescence reaction was carried out for the calibration graph. In the linear calibration range, the correlation coefficients and coefficient of Variation (CV) were 0.988 and 3.21% respectively which demonstrate the accuracy and reproducibility of the instrument that are suitable. The important part of this research depends on how to optimize the best condition for maximum bioluminescence. The culture of Vibrio fischeri with optimal conditions in liquid media, were stirring at 120 rpm at a temperature of 150C to 180C and were incubated for 24 to 72 hours while solid medium was held at 180C and for 48 hours. Suspension of nanoparticles ZnO, after 30 min contact time to bacteria Vibrio fischeri, showed the highest toxicity while SiO_2 nanoparticles showed the lowest toxicity. After 5 min exposure time, the toxicity of ZnO was the strongest and MCM-41 was the weakest toxicant component.

Keywords: Bioluminescence, effective concentration, nanomaterials, toxicity, Vibrio fischeri.

MAGNETIC PROPERTIES GOVERN THE PROCESSES OF DNA REPLICATION AND THE SHORTENING OF THE TELOMERE

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Abstract:

This hypothesis shows that the induction and the remanent of magnetic properties govern the mechanism processes of DNA replication and the shortening of the telomere. The solenoid–like formation of each parental DNA strand, which exists at the initial stage of the replication process, enables an electric charge transformation through the strand to produce a magnetic field. The magnetic field, in turn, induces the surrounding medium to form a new (replicated) strand by a remanent magnetisation. Through the remanent [residual] magnetisation process, the replicated strand possesses a similar information pattern to that of the parental strand. In the same process, the remanent amount of magnetisation forms the medium in which it has less of both repetitive and pattern magnetisation than that of the parental strand, therefore the replicated strand shows a shortening in the length of its telomeres.

Keywords: DNA replication, magnetic properties, residual magnetisation, shortening of the telomere.

EVOLUTIONARY DISTANCE IN THE YEAST GENOME

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Abstract:

Whole genome duplication (WGD) increased the number of yeast Saccharomyces cerevisiae chromosomes from 8 to 16. In spite of retention the number of chromosomes in the genome of this organism after WGD to date, chromosomal rearrangement events have caused an evolutionary distance between current genome and its ancestor. Studies under evolutionary-based approaches on eukaryotic genomes have shown that the rearrangement distance is an approximable problem. In the case of S. cerevisiae, we describe that rearrangement distance is accessible by using dedoubled adjacency graph drawn for 55 large paired chromosomal regions originated from WGD. Then, we provide a program extracted from a C program database to draw a dedoubled genome adjacency graph for S. cerevisiae. From a bioinformatical perspective, using the duplicated blocks of current genome in S. cerevisiae, we infer that genomic organization of eukaryotes has the potential to provide valuable detailed information about their ancestrygenome.

Keywords: Whole-genome duplication, Evolution, Double-cutand- join operation, Yeast.

SYNTHESIS OF HIGHLY SENSITIVE MOLECULAR IMPRINTED SENSOR FOR SELECTIVE DETERMINATION OF DOXYCYCLINE IN HONEY SAMPLES

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Abstract:

Doxycycline (DXy) is a cycline antibiotic, most frequently prescribed to treat bacterial infections in veterinary medicine. However, its broad antimicrobial activity and low cost, lead to an intensive use, which can seriously affect human health. Therefore, its spread in the food products has to be monitored. The scope of this work was to synthetize a sensitive and very selective molecularly imprinted polymer (MIP) for DXy detection in honey samples. Firstly, the synthesis of this biosensor was performed by casting a layer of carboxylate polyvinyl chloride (PVC-COOH) on the working surface of a gold screen-printed electrode (Au-SPE) in order to bind covalently the analyte under mild conditions. Secondly, DXy as a template molecule was bounded to the activated carboxylic groups, and the formation of MIP was performed by a biocompatible polymer by the mean of polyacrylamide matrix. Then, DXy was detected by measurements of differential pulse voltammetry (DPV). A non-imprinted polymer (NIP) prepared in the same conditions and without the use of template molecule was also performed. We have noticed that the elaborated biosensor exhibits a high sensitivity and a linear behavior between the regenerated current and the logarithmic concentrations of DXy from 0.1 pg.mL−1 to 1000 pg.mL−1. This technic was successfully applied to determine DXy residues in honey samples with a limit of detection (LOD) of 0.1 pg.mL−1 and an excellent selectivity when compared to the results of oxytetracycline (OXy) as analogous interfering compound. The proposed method is cheap, sensitive, selective, simple, and is applied successfully to detect DXy in honey with the recoveries of 87% and 95%. Considering these advantages, this system provides a further perspective for food quality control in industrial fields.

Keywords: Electrochemical sensor, molecular imprinted polymer, doxycycline, food control.

MICROBIAL CONTAMINANTS IN DRINKING WATER COLLECTED FROM DIFFERENT REGIONS OF KUWAIT

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Abstract:

Water plays a major role in maintaining life on earth, but it can also serve as a matrix for pathogenic organisms, posing substantial health threats to humans. Although, outbreaks of diseases attributable to drinking water may not be common in industrialized countries, they still occur and can lead to serious acute, chronic, or sometimes fatal health consequences. The analysis of drinking water samples from different regions of Kuwait was performed in this study for bacterial and viral contaminations. Drinking tap water samples were collected from 15 different locations of the six Kuwait governorates. All samples were analyzed by confocal microscopy for the presence of bacteria. The samples were cultured in vitro to detect cultivable organisms. DNA was isolated from the cultured organisms and the identity of the bacteria was determined by sequencing the bacterial 16S rRNA genes, followed by BLAST analysis in the database of NCBI, USA. RNA was extracted from water samples and analyzed by real-time PCR for the detection of viruses with potential health risks, i.e. Astrovirus, Enterovirus, Norovirus, Rotavirus, and Hepatitis A. Confocal microscopy showed the presence of bacteria in some water samples. The 16S rRNA gene sequencing of culture grown organisms, followed by BLAST analysis, identified the presence of several non-pathogenic bacterial species. However, one sample had Acinetobacter baumannii, which often causes opportunistic infections in immunocompromised people, but none of the studied viruses could be detected in the drinking water samples analyzed. The results indicate that drinking water samples analyzed from various locations in Kuwait are relatively safe for drinking and do not contain many harmful pathogens.

Keywords: Drinking water, 16S rRNA, microbial diversity, viruses, Kuwait.

MATHEMATICAL MODEL OF DEPLETION OF FORESTRY RESOURCE: EFFECT OF SYNTHETIC BASED INDUSTRIES

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Abstract:

A mathematical model is proposed considering the forest biomass density $B(t)$, density of wood based industries $W(t)$ and density of synthetic industries $S(t)$. It is assumed that the forest biomass grows logistically in the absence of wood based industries, but depletion of forestry biomass is due to presence of wood based industries. The growth of wood based industries depends on $B(t)$, while $S(t)$ grows at a constant rate, independent of $B(t)$. Further there is a competition between $W(t)$ and $S(t)$ according to market demand. The proposed model has four ecologically feasible steady states, namely, E1: forest biomass free and wood industries free equilibrium; E2: wood industries free equilibrium and two coexisting equilibria E∗1 , E∗2 . Behavior of the system near all feasible equilibria is analyzed using the stability theory of differential equations. In the proposed model, the natural depletion rate h1 is a crucial parameter and system exhibits Hopf-bifurcation about the non-trivial equilibrium with respect to h1. The analytical results are verified using numerical simulation.

Keywords: A mathematical model, Competition between wood based and synthetic industries, Hopf-bifurcation, Stability analysis.

THE AGRICULTURAL GOVERNANCE IN BANGLADESH: A CASE STUDY

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Abstract:

Agriculture is one of the single largest sectors of Bangladesh economy. Bangladesh is an agro based country and predominantly is an agrarian economy. It is the backbone of the economy of Bangladesh. Around 75% of the total population directly or indirectly depends on agriculture and near about 84% of the total population lives in rural areas almost depend on agriculture for livelihood. Agriculture includes the sub-sectors of crop, livestock, forestry and fisheries. The contribution of all sub sectors is around 22.83 percent to national GDP in 2003-2004. The crops sub sector alone contributes 12.94 percent of GDP.

Keywords: Agricultural Governance
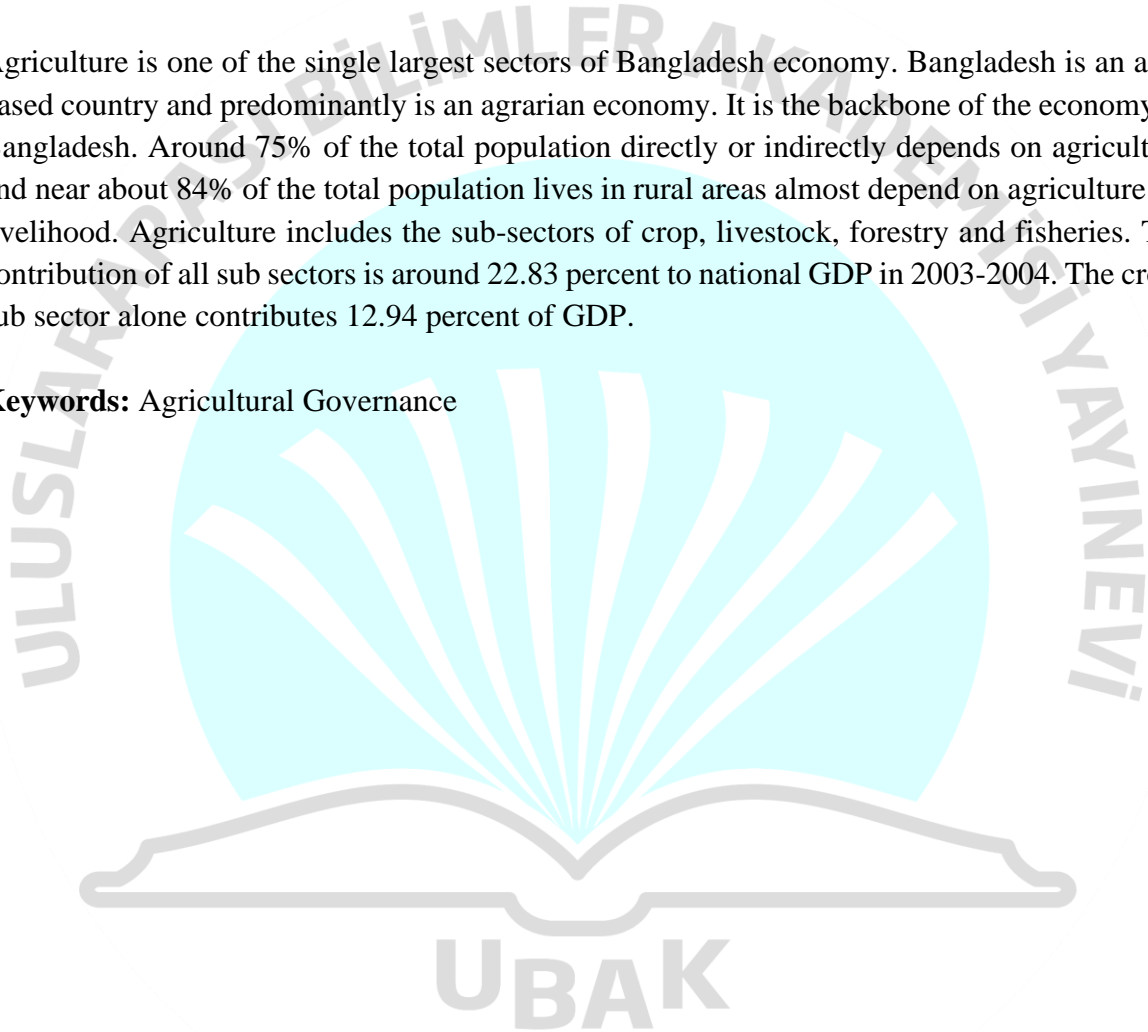
THE EFFECTS OF DROUGHT AND NITROGEN ON SOYBEAN (GLYCINE MAX (L.) MERRILL) PHYSIOLOGY AND YIELD

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Abstract:

Legume crops are able to fix atmospheric nitrogen by the symbiotic relation with specific bacteria, which allows the use of the mineral nitrogen-fertilizer to be reduced, or even excluded, resulting in more profit for the farmers and less pollution for the environment. Soybean (Glycine max (L.) Merrill) is one of the most important legumes with its high content of both protein and oil. However, it is recommended to combine the two nitrogen sources under stress conditions in order to overcome its negative effects. Drought stress is one of the most important abiotic stresses that increasingly limits soybean yields. A precise rate of mineral nitrogen under drought conditions is not confirmed, as it depends on many factors; soybean yield-potential and soil-nitrogen content to name a few. An experiment was conducted during 2017 growing season in Debrecen, Hungary to investigate the effects of nitrogen source on the physiology and the yield of the soybean cultivar 'Boglár'. Three N-fertilizer rates including no N-fertilizer (0 N), 35 kg ha-1 of N-fertilizer (35 N) and 105 kg ha-1 of N-fertilizer (105 N) were applied under three different irrigation regimes; severe drought stress (SD), moderate drought stress (MD) and control with no drought stress (ND). Half of the seeds in each treatment were pre-inoculated with Bradyrhizobium japonicum inoculant. The overall results showed significant differences associated with fertilization and irrigation, but not with inoculation. Increasing N rate was mostly accompanied with increased chlorophyll content and leaf area index, whereas it positively affected the plant height only when the drought was waived off. Plant height was the lowest under severe drought, regardless of inoculation and N-fertilizer application and rate. Inoculation increased the yield when there was no drought, and a low rate of N-fertilizer increased the yield furthermore; however, the high rate of N-fertilizer decreased the yield to a level even less than the inoculated control. On the other hand, the yield of non-inoculated plants increased as the N-fertilizer rate increased. Under drought conditions, adding N-fertilizer increased the yield of the non-inoculated plants compared to their inoculated counterparts; moreover, the high rate of N-fertilizer resulted in the best yield. Regardless of inoculation, the mean yield of the three fertilization rates was better when the water amount increased. It was concluded that applying N-fertilizer to provide the nitrogen needed by soybean plants, with the absence of N2-fixation process, is very important. Moreover, adding relatively high rate of N-fertilizer is very important under severe drought stress to alleviate the drought negative effects. Further research to recommend the best N-fertilizer rate to inoculated soybean under drought stress conditions should be executed.

Keywords: Drought stress, inoculation, N-fertilizer, soybean physiology, yield.

JIGGER FLEA (TUNGA PENETRANS) INFESTATIONS AND USE OF SOIL-COW DUNG-ASH MIXTURE AS A FLEA CONTROL METHOD IN EASTERN UGANDA

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Abstract:

Despite several interventions, jigger flea infestations continue to be reported in the Busoga sub-region in Eastern Uganda. The purpose of this study was to identify factors that expose the indigenous people to jigger flea infestations and evaluate the effectiveness of any indigenous materials used in flea control by the affected communities. Flea compositions in residences were described, factors associated with flea infestation and indigenous materials used in flea control were evaluated. Field surveys were conducted in the affected communities after obtaining preliminary information on jigger infestation from the offices of the District Health Inspectors to identify the affected villages and households. Informed consent was then sought from the local authorities and household heads to conduct the study. Focus group discussions were conducted with key district informants, namely, the District Health Inspectors, District Entomologists and representatives from the District Health Office. A GPS coordinate was taken at central point at every household enrolled. Fleas were trapped inside residences using Kilonzo traps. A Kilonzo Trap comprised a shallow pan, about three centimetres deep, filled to the brim with water. The edges of the pan were smeared with Vaseline to prevent fleas from crawling out. Traps were placed in the evening and checked every morning the following day. The trapped fleas were collected in labelled vials filled with 70% aqueous ethanol and taken to the laboratory for identification. Socio-economic and environmental data were collected. The results indicate that the commonest flea trapped in the residences was the cat flea (Ctenocephalides felis) (50%), followed by Jigger flea (Tunga penetrans) (46%) and rat flea (Xenopsylla Cheopis) (4%), respectively. The average size of residences was seven squire metres with a mean of six occupants. The residences were generally untidy; with loose dusty floors and the brick walls were not plastered. The majority of the jigger affected households were headed by peasants (86.7%) and artisans (13.3%). The household heads mainly stopped at primary school level (80%) and few at secondary school level (20%). The jigger affected households were mainly headed by peasants of low socioeconomic status. The affected community members use soil-cow dung-ash mixture to smear floors of residences as the only measure to control fleas. This method was found to be ineffective in controlling the insects. The study recommends that home improvement campaigns be continued in the affected communities to improve sanitation and hygiene in residences as one of the interventions to combat flea infestations. Other cheap, available and effective means should be identified to curb jigger flea infestations.

Keywords: Cow dung-soil-ash mixture, infestations, Jigger flea, Tunga penetrans.

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APPLICATION OF METARHIZIUM ANISOPLIAE AGAINST MELOIDOGYNE JAVANICA IN SOIL AMENDED WITH OAK DEBRIS

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Abstract:

Tomato (Lycopersicon esculentum Mill.) is one of the most popular, widely grown and the second most important vegetable crop, after potatoes. Nematodes have been identified as one of the major pests affecting tomato production throughout the world. The most destructive nematodes are the genus Meloidogyne. Most widespread and devastating species of this genus are M. incognita, M. javanica, and M. arenaria. These species can cause complete crop loss under adverse growing conditions. There are several potential methods for management of the root knot nematodes. Although the chemicals are widely used against the phytonematodes, because of hazardous effects of these compounds on non-target organisms and on the environment, there is a need to develop other control strategies. Nowadays, non-chemical measures are widely used to control the plant parasitic nematodes. Biocontrol of phytonematodes is an important method among environment-friendly measures of nematode management. There are some soil-inhabiting fungi that have biocontrol potential on phytonematodes, which can be used in nematode management program. The fungus Metarhizium anisopliae, originally is an entomopathogenic bioagent. Biocontrol potential of this fungus on some phytonematodes has been reported earlier. Recently, use of organic soil amendments as well as the use of bioagents is under special attention in sustainable agriculture. This research aimed to reduce the pesticide use in control of root-knot nematode, Meloidogyne javanica in tomato. The effects of M. anisopliae IMI 330189 and different levels of oak tree debris on M. javanica were determined. The combination effect of the fungus as well as the different rates of soil amendments was determined. Pots were filled with steam pasteurized soil mixture and the six leaf tomato seedlings were inoculated with 3000 second stage larvae of M. javanica/kg of soil. After eight weeks, plant growth parameters and nematode reproduction factors were compared. Based on the results of our experiment, combination of M. anisopliae IMI 330189 and oak debris caused more than 90% reduction in reproduction factor of nematode, at the rates of 100 and 150 g/kg soil ($P \leq 0.05$). As compared to control, the reduction in number of galls was 76%. It was 86% for nematode reproduction factor, showing the significance of combined effect of both tested agents. Our results showed that plant debris can increase the biological activity of the tested bioagent. It was also proved that there was no adverse effect of oak debris, which potentially has antimicrobial activity, on antagonistic power of applied bioagent.

Keywords: Biological control, nematode management, organic soil, Quercus branti, root knot nematode, soil amendment.

ANALYZING THE IMPACT OF SPATIO-TEMPORAL CLIMATE VARIATIONS ON THE RICE CROP CALENDAR IN PAKISTAN

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Abstract:

The present study investigates the space-time impact of climate change on the rice crop calendar in tropical Gujranwala, Pakistan. The climate change impact was quantified through the climatic variables, whereas the existing calendar of the rice crop was compared with the phonological stages of the crop, depicted through the time series of the Normalized Difference Vegetation Index (NDVI) derived from Landsat data for the decade 2005-2015. Local maxima were applied on the time series of NDVI to compute the rice phonological stages. Panel models with fixed and cross-section fixed effects were used to establish the relation between the climatic parameters and the time-series of NDVI across villages and across rice growing periods. Results show that the climatic parameters have significant impact on the rice crop calendar. Moreover, the fixed effect model is a significant improvement over cross-sectional fixed effect models (R-squared equal to 0.673 vs. 0.0338). We conclude that high inter-annual variability of climatic variables cause high variability of NDVI, and thus, a shift in the rice crop calendar. Moreover, inter-annual (temporal) variability of the rice crop calendar is high compared to the inter-village (spatial) variability. We suggest the local rice farmers to adapt this change in the rice crop calendar.

Keywords: Landsat NDVI, panel models, temperature, rainfall.

VERMICOMPOSTING OF TEXTILE INDUSTRIES' DYEING SLUDGE BY USING EISENIA FOETIDA

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Civil Engineering Department, India

Abstract:

Surat City in India is famous for textile and dyeing industries which generate textile sludge in huge quantity. Textile sludge contains harmful chemicals which are poisonous and carcinogenic. The safe disposal and reuse of textile dyeing sludge are challenging for owner of textile industries and government of the state. The aim of present study was the vermicomposting of textile industries dyeing sludge with cow dung and Eisenia foetida as earthworm spices. The vermicompost reactor of 0.3 m3 capacity was used for vermicomposting. Textile dyeing sludge was mixed with cow dung in different proportion, i.e., 0:100 (C1), 10:90 (C2), 20:80 (C3), 30:70 (C4). Vermicomposting duration was 120 days. All the combinations of the feed mixture, the pH was increased to a range 7.45-7.78, percentage of total organic carbon was decreased to a range of 31-33.3%, total nitrogen was decreased to a range of 1.15-1.32%, total phosphorus was increased in the range of 6.2-7.9 (g/kg).

Keywords: Cow dung, Eisenia foetida, textile sludge, vermicompost.

REDUCED RULE BASED FUZZY LOGIC CONTROLLED ISOLATED BIDIRECTIONAL CONVERTER OPERATING IN EXTENDED PHASE SHIFT CONTROL FOR BIDIRECTIONAL ENERGY TRANSFER

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Abstract:

Bidirectional energy transfer capability with high efficiency and reduced cost is fast gaining prominence in the central part of a lot of power conversion systems in Direct Current (DC) microgrid. Preferably, under the economics constraints, these systems utilise a single high efficiency power electronics conversion system and a dual active bridge converter. In this paper, modeling and performance of Dual Active Bridge (DAB) converter with Extended Phase Shift (EPS) is evaluated with two batteries on both sides of DC bus and bidirectional energy transfer is facilitated and this is further compared with the Single Phase Shift (SPS) mode of operation. Optimum operating zone is identified through exhaustive simulations using MATLAB/Simulink and SimPowerSystem software. Reduced rules based fuzzy logic controller is implemented for closed loop control of DAB converter. The control logic enables the bidirectional energy transfer within the batteries even at lower duty ratios. Charging and discharging of batteries is supervised by the fuzzy logic controller. State of charge, current and voltage for both the batteries are plotted in the battery characteristics. Power characteristics of batteries are also obtained using MATLAB simulations.

Keywords: Fuzzy logic controller, rule base, membership functions, dual active bridge converter, bidirectional power flow, duty ratio, extended phase shift, state of charge.

DESIGNING A ROBUST CONTROLLER FOR A 6 LINKAGE ROBOT

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Abstract

One of the main points of application of the mechanisms of the series and parallel is the subject of managing them. The control of this mechanism and similar mechanisms is one that has always been the intention of the scholars. On the other hand, modeling the behavior of the system is difficult due to the large number of its parameters, and it leads to complex equations that are difficult to solve and eventually difficult to control. In this paper, a six-linkage robot has been presented that could be used in different areas such as medical robots. Using these robots needs a robust control. In this paper, the system equations are first found, and then the system conversion function is written. A new controller has been designed for this robot which could be used in other parallel robots and could be very useful. Parallel robots are so important in robotics because of their stability, so methods for control of them are important and the robust controller, especially in parallel robots, makes a sense.

Keywords: 3-RRS, 6 linkage, parallel robot, control.
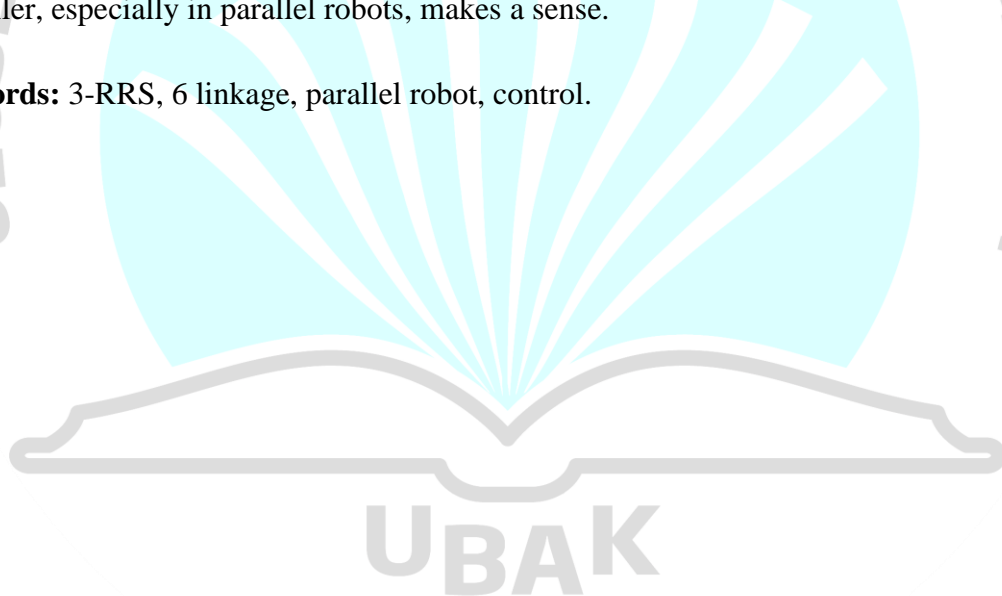
MODULAR HARMONIC CANCELLATION IN A MULTIPLIER HIGH VOLTAGE DIRECT CURRENT GENERATOR

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Abstract:

Generation of high DC voltages is necessary for testing the insulation material of high voltage AC transmission lines with long lengths. The harmonic and ripple contents of the output DC voltage supplied by high voltage DC circuits require the use of costly capacitors to smooth the output voltage after rectification. This paper proposes a new modular multiplier high voltage DC generator with embedded Cockcroft-Walton circuits that achieve a negligible harmonic and ripple contents of the output DC voltage without the need for costly filters to produce a nearly constant output voltage. In this new topology, Cockcroft-Walton modules are connected in series to produce a high DC output voltage. The modules are supplied by low input AC voltage sources that have the same magnitude and frequency and shifted from each other by a certain angle to eliminate the harmonics from the output voltage. The small ripple factor is provided by the smoothing column capacitors and the phase shifted input voltages of the cascaded modules. The constituent harmonics within each module are determined using Fourier analysis. The viability of the proposed DC generator for testing purposes and the effectiveness of the cascaded connection are confirmed by numerical simulations using MATLAB/Simulink.

Keywords: Cockcroft-Walton circuit, Harmonics, Ripple factor, HVDC generator.

INTEGRATION OF VIRTUAL LEARNING OF INDUCTION MACHINES FOR UNDERGRADUATES

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[2]Maharishi Markandeshwar University

Abstract:

In context of understanding problems faced by undergraduate students while carrying out laboratory experiments dealing with high voltages, it was found that most of the students are hesitant to work directly on machine. The reason is that error in the circuitry might lead to deterioration of machine and laboratory instruments. So, it has become inevitable to include modern pedagogic techniques for undergraduate students, which would help them to first carry out experiment in virtual system and then to work on live circuit. Further advantages include that students can try out their intuitive ideas and perform in virtual environment, hence leading to new research and innovations. In this paper, virtual environment used is of MATLAB/Simulink for three-phase induction machines. The performance analysis of three-phase induction machine is carried out using virtual environment which includes Direct Current (DC) Test, No-Load Test, and Block Rotor Test along with speed torque characteristics for different rotor resistances and input voltage, respectively. Further, this paper carries out computer aided teaching of basic Voltage Source Inverter (VSI) drive circuitry. Hence, this paper gave undergraduates a clearer view of experiments performed on virtual machine (No-Load test, Block Rotor test and DC test, respectively). After successful implementation of basic tests, VSI circuitry is implemented, and related harmonic distortion (THD) and Fast Fourier Transform (FFT) of current and voltage waveform are studied.

Keywords: Block rotor test, DC test, no-load test, virtual environment, VSI.
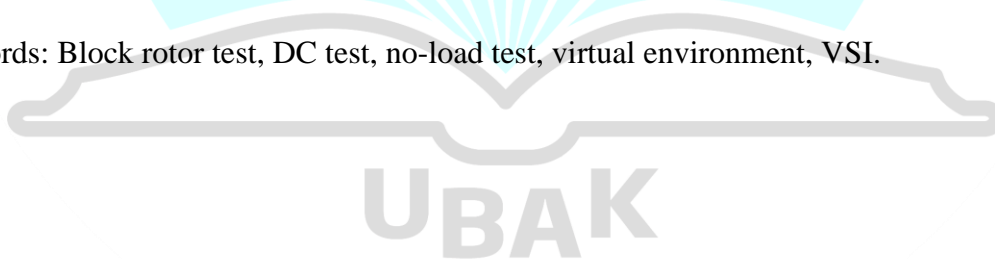
FIVE-PHASE INDUCTION MOTOR DRIVE SYSTEM DRIVEN BY FIVE-PHASE PACKED U CELL INVERTER: ITS MODELING AND PERFORMANCE EVALUATION

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Abstract:

The three phase system drives produce the problem of more torque pulsations and harmonics. This issue prevents the smooth operation of the drives and it also induces the amount of heat generated thus resulting in an increase in power loss. Higher phase system offers smooth operation of the machines with greater power capacity. Five phase variable-speed induction motor drives are commonly used in various industrial and commercial applications like tractions, electrical vehicles, ship propulsions and conveyor belt drive system. In this work, a comparative analysis of the different modulation schemes applied on the five-level five-phase Packed U Cell (PUC) inverter fed induction motor drives is presented. The performance of the inverter is greatly affected with the modulation schemes applied. The system is modeled, designed, and implemented in MATLAB®/Simulink environment. Experimental validation is done for the prototype of single phase, whereas five phase experimental validation is proposed in the future works.

Keywords: Packed U-Cell inverter, pulse width modulation, five-phase system, induction motor.

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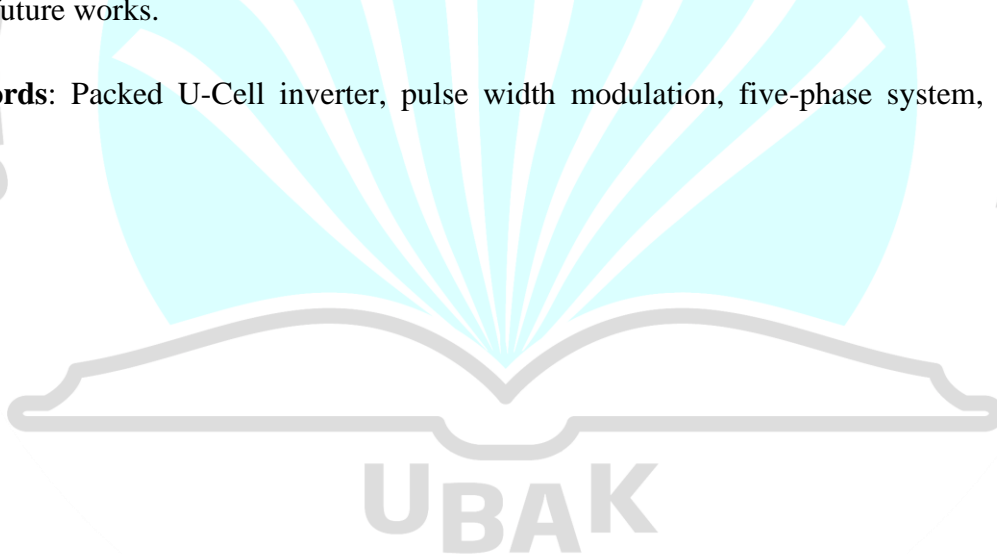
ADAPTIVE KAMAN FILTER FOR FAULT DIAGNOSIS OF LINEAR PARAMETER-VARYING SYSTEMS

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Lahouari Cheded

Eng. Department, King Fahd University of Petroleum & Minerals, Saudi Arabia

Abstract:

Fault diagnosis of Linear Parameter-Varying (LPV) system using an adaptive Kalman filter is proposed. The LPV model is comprised of scheduling parameters, and the emulator parameters. The scheduling parameters are chosen such that they are capable of tracking variations in the system model as a result of changes in the operating regimes. The emulator parameters, on the other hand, simulate variations in the subsystems during the identification phase and have negligible effect during the operational phase. The nominal model and the influence vectors, which are the gradient of the feature vector respect to the emulator parameters, are identified off-line from a number of emulator parameter perturbed experiments. A Kalman filter is designed using the identified nominal model. As the system varies, the Kalman filter model is adapted using the scheduling variables. The residual is employed for fault diagnosis. The proposed scheme is successfully evaluated on simulated system as well as on a physical process control system.

Keywords: Keywords—Identification, linear parameter-varying systems, least-squares estimation, fault diagnosis, Kalman filter, emulators

STEADY STATE ANALYSIS OF DISTRIBUTION SYSTEM WITH WIND GENERATION UNCERTAINITY

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Abstract:

Due to the increased penetration of renewable energy resources in the distribution system, the system is no longer passive in nature. In this paper, a steady state analysis of the distribution system has been done with the inclusion of wind generation. The modeling of wind turbine generator system and wind generator has been made to obtain the average active and the reactive power injection into the system. The study has been conducted on a IEEE-33 bus system with two wind generators. The present research work is useful not only to utilities but also to customers.

Keywords: Distributed generation, distribution network, radial network, wind turbine generating system.

# OPTIMIZATION OF DOUBLY FED INDUCTION GENERATOR EQUIVALENT CIRCUIT PARAMETERS BY DIRECT SEARCH METHOD

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Abstract:

Doubly-fed induction generator (DFIG) is currently the choice for many wind turbines. These generators, when connected to the grid through a converter, is subjected to varied power system conditions like voltage variation, frequency variation, short circuit fault conditions, etc. Further, many countries like Canada, Germany, UK, Scotland, etc. have distinct grid codes relating to wind turbines. Accordingly, following the network faults, wind turbines have to supply a definite reactive current. To satisfy the requirements including reactive current capability, an optimum electrical design becomes a mandate for DFIG to function. This paper intends to optimize the equivalent circuit parameters of an electrical design for satisfactory DFIG performance. Direct search method has been used for optimization of the parameters. The variables selected include electromagnetic core dimensions (diameters and stack length), slot dimensions, radial air gap between stator and rotor and winding copper cross section area. Optimization for 2 MW DFIG has been executed separately for three objective functions - maximum reactive power capability (Case I), maximum efficiency (Case II) and minimum weight (Case III). In the optimization analysis program, voltage variations (10%), power factor-leading and lagging (0.95), speeds for corresponding to slips (-0.3 to +0.3) have been considered. The optimum designs obtained for objective functions were compared. It can be concluded that direct search method of optimization helps in determining an optimum electrical design for each objective function like efficiency or reactive power capability or weight minimization.

Keywords: Direct search, DFIG, equivalent circuit parameters, optimization.
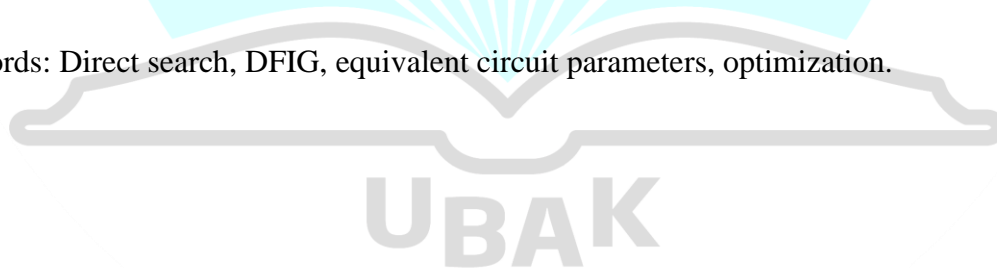
INVERTER BASED GAIN-BOOSTING FULLY DIFFERENTIAL CMOS AMPLIFIER

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Abstract:

This work presents a fully differential CMOS amplifier consisting of two self-biased gain boosted inverter stages, that provides an alternative to the power hungry operational amplifier. The self-biasing avoids the use of external biasing circuitry, thus reduces the die area, design efforts, and power consumption. In the present work, regulated cascode technique has been employed for gain boosting. The Miller compensation is also applied to enhance the phase margin. The circuit has been designed and simulated in 1.8 V 0.18 µm CMOS technology. The simulation results show a high DC gain of 100.7 dB, Unity-Gain Bandwidth of 107.8 MHz, and Phase Margin of 66.7o with a power dissipation of 286 µW and makes it suitable candidate for the high resolution pipelined ADCs.

Keywords: CMOS amplifier, gain boosting, inverter-based amplifier, self-biased inverter.