ALL IN ONE CONFERENCES

BOOK OF ABSTRACTS

PROGRAMME AND ABSTRACTS

- **International Conference on New Trends in Architecture and Interior Designing**
- **International Conference on New Trends in Chemistry**
- **International Conference On New Advances in Civil Engineering**
- **International Conference on New Trends in Econometrics and Finance**
- **International Conference on Advances in Statistics**

24-28 March 2015
Grand Excelsior Hotel, Sharjah/Dubai

http://www.allinoneconferences.org/

PUBLISHER : FATMA NOYAN TEKELİ

MARCH 2015

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Dear Colleagues,

All In One Conferences (AIOC) is an international conference organization, aiming at the repositories of the academics, members, collaborators and all other interested participants in the fields of Interior Architecture, Civil Engineering, Chemistry, Econometrics and Statistics. We would like to make their collections, research and studies discoverable and accessible for discussions and sharing while enjoying the diversity.

The goal of the organization, as stated previously, is to join all in their specialized fields of expertise, in order to communicate and convey ideas, new tools, and experiences. Furthermore, to encourage available future researches and broaden our academic horizons and élite in a relevant conference of choice.

Registration, abstract submissions, and traveler informations are available here. We invite you to join us in this important mission.

Important Note: Article evaluation process will be according to reviewers ' (referees') comments. Papers will be selected on basis of blind peer review by members of the Scientific committee and other independent reviewers (if necessary).

We look forward to see you in our 2015 Dubai Conferences series For any further queries, please do not hesitate to contact us.

Best Regards,

The AIOC Organization Committee

Assoc. Prof. Dr. Fatma NOYAN TEKELI

Yıldız Technical University

Committee Chair

PROGRAMME

24 MARCH 2015
12:00 – 20:00 : REGISTRATION / CONFERENCE LOBBY AREA

25 MARCH 2015
09:00-10:00 : REGISTRATION / CONFERENCE LOBBY AREA

10:00-11:15	**MAIN HALL** **GRAND OPENING CEREMONY & WELCOME SPEECH**
AIOC	**Assoc. Prof. Dr. Fatma NOYAN TEKELI / Yıldız Technical University - Turkey** (AIOC Committee Chair / Disciplinary Co Chair – Statistics)
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Civil Engineering	**Assist. Prof. Dr. Ayse YUKSEL OZAN / Adnan Menderes University – Turkey** (Disciplinary Co Chair – Civil Engineering)

11:15 – 11:30	**C O F F E E / T E A B R E AK**

MAIN HALL - CHEMISTRY	
11:30-12:30	**KEYNOTE SPEAKER / Prof. Dr. Zekiye CINAR – Yıldız Technical University** **Title:** THE ROLE OF CODOPING IN TiO2 PHOTOCATALYSIS

HALL 1 – CIVIL ENGINEERING	
11:30-12:30	**KEYNOTE SPEAKER / Prof. Dr. Osman AKAN – American University of Sharjah** **Title:** BEST MANAGEMENT PRACTICES FOR LOW IMPACT DEVELOPMENT

HALL 2 – STATISTICS & ECONOMETRICS	
11:30-12:30	**KEYNOTE SPEAKER – Prof. Dr. Ismihan BAYRAMOGLU (BAIRAMOV) - Izmir University of Economics** **Title:** RECORDS IN BIVARIATE SEQUENCES OF RANDOM VARIABLES

HALL 3 – ARCHITECTURE	
11:30-12:30	**KEYNOTE SPEAKER – Prof. Dr. Burçin Cem ARABACIOĞLU – Mimar Sinan Fine Arts University** **Title:** MEKÂNDA BİLGİ-İLETİŞİM TEKNOLOJİLERİ DESTEKİ ETKİLEŞİMLİLİK TASARIMI

12:30 – 14:00	**LUNCH**

MAIN HALL – CHEMISTRY

SESSION CHAIR	**PD.Dr.Habil. Daniel Ayuk Mbi EGBE**	
TIME	**TITLE**	**PRESENTER**
14:00 – 14:20	CRYSTALLIZATION OF CALCIUM CARBONATE IN THE PRESENCE OF WATER SOLUBLE BLOCK COPOLYMER OF POLYZWITTERION AND POLYETHYLENE GLYCOL	Ferdane KARAMAN – Özlem YAZICI
14:20 – 14:40	ZN2 + EFFECT ON BIOLOGICAL PROPERTIES OF AMSONIA ORIENTALIS	Yonca AVCI DUMAN – Halil Ibrahim TOYGAR – Aygül KINA - Sinem BALCI - Arda ACEMİ – Yonca YUZUGULLU
14:40 – 15:00	PHTHALOCYANINE FUNCTIONAL PHOTOCURABLE COPOLYMER FOR POLYMER DISPERSED LIQUID CRYSTAL DISPLAY APPLICATIONS	Hümeyra MERT BALABAN – Hatice DİNÇER – Emel ÇALIŞKAN – Betül Nur

		ŞEN - Yeşim HEPUZER GURSEL
15:00 – 15:20	SYNTHESIS SPECTROSCOPIC CHARACTERIZATION AND THEORIC CRYSTALLOGRAPHIC INFORMATION OF NOVEL PHENYLDIAZALINE CALIX[4]ARENE CONTAINING ACRYLOYL MOIETY	Sevil OZKINALI – Zeynel ÖZTÜRK
15:20 – 15:40	ZETASIZER MEASUREMENTS OF POLYMER-DRUG DELIVERY SYSTEMS	Dolunay SAKAR DAŞDAN – Nur Melek ÇETİN, Ceren ASLITÜRK – Gülderen KARAKUS

15:40 – 16:00	**C O F F E E / T E A B R E AK**

SESSION CHAIR	**Prof. Dr. Zekiye CINAR**	
TIME	**TITLE**	**PRESENTER**
16:00 – 16:20	DETERMINATION of OPTIMUM CONDITIONS for BIOGENIC AMINES DERIVATIZED with ACETYLACETONE	Bediha AKMEŞE – Adem ASAN
16:20 – 16:40	INVESTIGATION OF THERMODYNAMIC PROPERTIES OF 4-DECYLOXYBIPHENYL-4'-CARBOXYLIC ACID LIQUID CRYSTAL BY INVERSE GAS CHROMATOGRAPHY	Fatih ÇAKAR - Gürkan KARANLIK - Hale OCAK - Belkıs BİLGİN ERAN - Özlem CANKURTARAN - Ferdane KARAMAN
16:40 – 17:00	STEREOSELECTIVE SYNTHESIS OF DIPHENYL SUBSTITUTED CONDURITOL-TYPE CARBASUGARS	Sedat SEVMEZLER – Arif BARAN

HALL 1 – CIVIL ENGINEERING

SESSION CHAIR	**Prof. Dr. OSMAN AKAN**	
TIME	**TITLE**	**PRESENTER**
14:00 – 14:20	CONCRETE DETERIORATION, MODELING AND HEALTH MONITORING OF STRUCTURES	Abid ABU TAIR
14:20 – 14:40	A PROMISING APPROACH IN THE WORLD: TENSILE STRUCTURES ROOFING	Alaa Tareq AL-SHAREEF - Talha EKMEKYAPAR - Derya BAKBAK
14:40 – 15:00	EFFICIENCY OF USE OF A CARBON GEOMEMBRANE FOR THE CONSTRUCTION OF THE EMBANKMENT in POOR LOAD-	Ales ZIBERT - Stanislav SKRABL

	BEARİNG FOUNDATİON SOIL WITH A VERIFICATION OF THE IMPACT OF THE THEORY OF LARGE DEFORMATIONS in THE NUMERICAL CALCULATIONS	
15:00 – 15:20	PREDICTION OF COMPACTION BEHAVIOUR OF SOILS AT DIFFERENT ENERGY LEVELS	Yesim GURTUG - Asuri SRIDHARAN
15:20 – 15:40	SEDIMENT VOLUME TESTS FOR EXPENSIVE SOIL IDENTIFICATION AND CLASSIFICATION	Esin BOZKURT - Yesim GURTUG - Asuri SRIDHARAN

15:40 – 16:00	**C O F F E E / T E A B R E AK**

SESSION CHAIR	**Assist.Prof.Dr. Ayse YUKSEL OZAN**	
TIME	**TITLE**	**PRESENTER**
16:00 – 16:20	TREATMENT AND IMPROVEMENT of GEOTECHNICAL PROPERTIES OF FINE GRAINED SOIL USING LIME	Louafı BAHIA – Hadef BILLAL
16:20 – 16:40	TEMPERATURE TREND ANALYSIS IN URMIA LAKE BASIN COMPARED WITH WATER LEVEL FLUCTUATIONS OF THE LAKE	Shadi HATAMI MAJOUMERD - Alireza BORHANI DARIANE
16:40 – 17:00	MEASUREMENT OF RESIDUAL STRESSES BY THE NEUTRON DIFFRACTION TECHNIQUE IN WELDED JOINT	Moussa ZAOUI - Noureddine CHAMI

HALL 2 – STATISTICS & ECONOMETRICS

SESSION CHAIR	**Assist.Prof.Dr.Gülder KEMALBAY**	
TIME	**TITLE**	**PRESENTER**
14:00 – 14:20	CONFIDENCE INTERVALS FOR THE BEHRENS -FISHER PROBLEM: A PARAMETRIC BOOTSTRAP APPROACH	Ahmet SEZER - Evren ÖZKİP - Berna YAZICI·
14:20 – 14:40	MEASURING SOCIAL INEQUALITY: COMPARISON OF GINI COEFFICIENT AND THEIL INDEX	Valentina SOKOLOVSKA - Žolt LAZAR - Aleksandar TOMAŠEVIĆ
14:40 – 15:00	BIAS REDUCING APPROACH FOR SOME ROBUST ESTIMATORS İN THE CASE OF KERNEL ESTIMATION.	Celal Aydın - Necla Gündüz - Emel Başar
15:00 – 15:20	JOINT DISTRIBUTION OF NEW SAMPLE RANK OF BIVARIATE ORDER STATISTICS	Gulder KEMALBAY – Ismıhan BAYRAMOGLU
15:20 – 15:40	IMPACT OF INFLATION ON	Sevin UGURAL, Rosemary

	ECONOMIC GROWTH; CASE STUDY OF NIGERIA	IDALU

15:40 – 16:00	**C O F F E E / T E A B R E AK**

WORKSHOP on ORDER STATISTICS	
16:00 – 17:00	**Prof. Dr. Narayanaswamy BALAKRISHNAN- McMaster University**

HALL 3 – ARCHITECTURE

Presentations will be in Turkish. English Translated Abstracts will be delivered.

SESSION CHAIR	**Assoc. Prof. Dr. Saadet AYTIS**	
TIME	**TITLE**	**PRESENTER**
14:00 – 14:20	GIYIM MAĞAZASI TASARIM ILKELERİ VE YENI TRENDLER	Ibrahim Can AYTIS
14:20 – 14:40	VITRIN AYDINLATMALARINDA TERCIH EDILEN AYDINLATMA ELEMANININ FARK EDİLEBIRLIRLIGE KATKISI	Necmi KAHRAMAN - Ebru OKUYUCU – Mehmet SARIKAHYA
14:40 – 15:00	İÇ MEKÂNIN HİSSEDİLEBİLEN ÖRTÜSÜ: NANOMALZEMELER	Merih KASAP
15:00 – 15:20	KÜLTÜRÜN MEKANSAL YANSIMALARI VE MIMARI	Tugba TARIM

15:40 – 16:00	**C O F F E E / T E A B R E AK**

SESSION CHAIR	**Prof. Dr. Burcin Cem ARABACIOĞLU**	
TIME	**TITLE**	**PRESENTER**
16:00 – 16:40	MATERIALITY IN DIGITAL FABRICATION AND DESIGN WORKFLOWS”	Ammar KALO
16:40 – 17:00	CONSERVATION AND HIGH-TECH GO HAND IN HAND	Gamze KAYMAK HEINZ
17:00 – 17:20	THE USE OF EXPERIENTIAL LEARNING IN MUSEUMS	Aysegul PEKPOSTALCI
17:20 – 17:40	THE EVALUATION OF CULTURAL CODES IN INTERIOR DESIGN THROUGH TELEVISION SERIES AND CHANGING PERCEPTION OF HOUSING IN TURKEY.	Meral NALÇAKAN - Seda CANOĞLU - Nilay ÖZSAVAŞ
17:40 – 18:00	FURNITURE DESIGN in TURKEY AFTER 1950 "KARE METAL"	Şebnem ERTAŞ - Funda KURAK AÇICI - Firdevs KULAK - Aslı TAŞ

26 MARCH 2015

09:00-10:00 : REGISTRATION / CONFERENCE LOBBY AREA

09:00 – 12:00	**CHEMISTRY: TECHNICAL TOUR** **DETAILS WILL BE ANNOUNCED LATER**

09:00 – 12:00	**CIVIL ENGINEERING: TECHNICAL TOUR** **10:00 Visit & Meeting at Nakheel Construction (www.nakheel.com)** **Other visits will be available soon**

09:00 – 12:00	**ARCHITECTURE: TECHNICAL TOUR** **10:00 Visit & Meeting at Nakheel Construction (www.nakheel.com)** **Other visits will be available soon**

12:30 – 14:00	**LUNCH**

MAIN HALL – CHEMISTRY (POSTER SESSION)

SESSION CHAIR		
TIME	**TITLE**	**PRESENTER**
14:20 16:20	SIMULTANEOUS DETERMINATION OF POTASSIUM SORBATE, SODIUM BENZOATE, QUINOLINE YELLOW AND SUNSET YELLOW IN LEMONADES AND LEMON SAUCES BY HPLC, USING EXPERIMENTAL DESIGN	Bürge AŞÇI - Şule DİNÇ ZOR - Özlem AKSU DÖNMEZ - Dilek YILDIRIM KÜÇÜKKARACA
	SYNTHESIS OF A NOVEL PHTHALOCYANINE WITH PERIPHERALLY COORDINATED RU(II) COMPLEX	Gülşah GUMRUKCU KOSE - Gulnur KESER KARAOGLAN - Nurufe KEMIKLI - Ahmet GUL
	EFFECT OF THE AMINO ACID ADDITIVES ON THE ELECTROCHEMICAL PERFORMANCE OF THE POSITIVE ELECTROLYTE FOR VANADIUM REDOX BATTERIES	Hurmus GURSU - Metin GENCTEN - Yucel SAHIN
	A NOVEL QUARTZ CRYSTAL MICROBALANCE SENSOR BASED ON THE ALDEHYDE FUNCTIONALIZED POLYETHERIMIDE	Hüsnü CANKURTARAN - Bekir SELÇUKİ
	REACTIONS OF 2,2,6-TRIMETHYL-1,3-DIOXINE-4-ONE WITH THE ALDIMINES PREPARED FROM THIOPHENE-2-CARBALDEHYDE	Nuket OCAL - Ilayda KOSER
	EXPERIMENTAL OPTIMIZATION OF PROCESS PARAMETERS ON	Ömer SAVAŞ - Salim ASLANLAR - Faruk

	RESISTANCE SPOT WELDING SHEAR STRENGTH BASED ON TAGUCHI METHOD	VAROL
	DEVELOPMENT OF A HIGH PERFORMANCE LIQUID CHROMATOGRAPHY METHOD FOR SIMULTANEOUS DETERMINATION OF EPHEDRINE, GUAIPHENESIN AND ADDITIVES IN SYRUP SAMPLES USING AN EXPERIMENTAL DESIGN	Ayşe ASLAN ÇAKIR - Özlem AKSU DONMEZ - Bürge AŞÇI - Şule DİNÇ ZOR
	MORPHOLOGY AND CHARACTERIZATION OF POLYMER DISPERSED LIQUID CRYSTAL BY SOLVENT-INDUCED PHASE SEPARATION	Serap MUTLU YANİÇ - Hale OCAK - Dilek GÜZELLER - Fatih ÇAKAR - Özlem CANKURTARAN - Belkıs BİLGİN-ERAN
	SURFACE CHARACTERIZATION OF POLYSTYRENE-B-POLY (ACRYLIC ACID) BY INVERSE GAS CHROMATOGRAPHY AT INFINITE DILUTION	Özlem YAZICI
	ADSORPTION AND DESORPTION CHARACTERISTICS, ISOTHERM AND KINETICS PARAMETERS OF XAD-16 RESIN FOR REMOVING MALACHITE GREEN OXALATE	Çağdaş BÜYÜKPINAR - Dila KAYA - Gizem ÖZİNANÇ - Nevim SAN1
	ASYMMETRIC ORGANOCATALYTIC SYNTHESIS OF β-HYDROXYCARBONYL COMPOUNDS	Merve KARAOGLU - Feray AYDOGAN - Çigdem YOLACAN
	THE SYNTHESIS OF PROLINE-BASED ASYMMETRIC ORGANOCATALYSTS AND THEIR APPLICATIONS	Tuğba YORULMAZ - Feray AYDOGAN - Çigdem YOLACAN
	CONDUCTIVE POLYMER DOPED WITH MoS2 COATINGS FOR THE CORROSION PROTECTION OF MILD STEEL	Gülden ASAN - Abdurrahman ASAN
	WASTE WATER TREATMENT OF ELECTROCOAGULATİON TECHNIQUE USING DIFFERENT HEAVY METAL SOLUTIONS	Türkan Börklü Budak - İkbal Koyuncu
	SYNTHESIS OF ANTHRAQUINONE SUBSTITUTED COBALT PHTHALOCYANINE	Sibel EKEN KORKUT - M. Kasım ŞENER - Atıf KOCA
	THREE- COMPONENT, ONE-POT SYNTHESIS OF INDENO[1,2-B]QUINOLINE-7-ONE DERIVATIVES CATALYZED BY TRIFLATE	Zühal TURGUT - Özlem ELMAS - Kadir TURHAN
	CONTROLLING THE PROPERTIES OF PH-SENSITIVE POLY(B-AMINOESTER) HYDROGELS BASED ON DIFFERENT AMINES AND DIACRYLATES	Yasemin TAMER - Hüseyin YILDIRIM
	THE ANALYSIS OF REACTION	Bahar EREN - Yelda

	KINETICS OF AMINOTOLUENE MOLECUL THROUGH CALCULATIONAL METHODS	YALCIN GURKAN
	POLYMER-DISPERSED LIQUID CRYSTAL DOPED WITH VARIOUS RATIOS OF CARBON NANOTUBES	Ömer AYKAN, Fatih ÇAKAR, Hale OCAK, Özlem CANKURTARAN and Belkıs BİLGİN-ERAN

MAIN HALL – CHEMISTRY	
16:20 – 17:20	**KEYNOTE SPEAKER – PD.Dr.Habil. Daniel Ayuk Mbi EGBE - Linz Institute for Organic Solar Cells, Linz** **Title:** MATERIAL DESIGN FOR POLYMERIC ORGANIC SOLAR CELLS: CASE STUDY OF PPE-PPV SYSTEMS

HALL 1 – CIVIL ENGINEERING

SESSION CHAIR	**Dr. Fatih GOKTEPE**	
TIME	TITLE	PRESENTER
14:20 – 14:40	YÜKSEK HIZLI TRENLERİN SERBEST ZEMİN YÜZEYİNDE ve ÇEVRE YAPILARDA OLUŞTURDUĞU TİTREŞİMLERİN DENEYSEL OLARAK İNCELENMESİ	Fatih Göktepe - Erkan Çelebi - H. Serdar Küyük - Muharrem Aktaş - Elif Ağcakoca
14:40 – 15:00	PONZA AGREGALI HAFİF HARÇLARA LİF TİPİ VE ORANININ ETKİSİ	İlhami DEMİR - Özer SEVİM - Selahattin GÜZELKÜÇÜK
15:00 – 15:20	Sismik Yüklere Maruz Yapı- Zemin Ortak Sisteminin Çözüm Sürecinde Temel-Zemin Etkileşim Ortamının Sönümü	Mustafa Yavuz Çetinkaya - Erkan Çelebi - Osman Kırtel
15:20 – 15:40	ARAZİ VE ARSA DÜZENLEMELERİNDE ALAN ESASLI VE DEĞER ESASLI UYGULAMALARIN KARŞILAŞTIRILMASI	Şenay ATABAY - İdris ATABAY

HALL 2 – STATISTICS & ECONOMETRICS	
09:40 – 10:40	**KEYNOTE SPEAKER – Narayanaswamy BALAKRISHNAN - McMaster University**

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 2 – STATISTICS & ECONOMETRICS

SESSION CHAIR	**Assoc. Prof. Dr. Gülhayat GÖLBAŞI ŞİMŞEK**	
TIME	**TITLE**	**PRESENTER**
11:00 – 11:20	APPLICATION OF EMPIRICAL LIKELIHOOD REGRESSION TO A REAL DATA SET WITH OUTLIERS	**Selahattin AYDOGDU** - Gülhayat GÖLBAŞI ŞİMŞEK
11:20 – 11:40	ESTIMATING COVARIANCE AS A MEASURE OF PORTFOLIO RISK BETWEEN HIGHLY CORRELATED ASSETS	**Gülder KEMALBAY** – Ozlem BERAK KORKMAZOGLU
11:40 – 12:00	LEARNING BAYESIAN NETWORKS FROM CLASSIFICATION TREES AND EXPERT KNOWLEDGE: A PRELIMINARY STUDY	**Luisa Stracqualursi** - Patrizia Agati
12:00 – 12:20	INFORMATION EXTRACTION FROM VIBRATİON DATA: A TIME SERIES APPROACH	**Ibrahim GENC**

12:30 – 14:00	**LUNCH**

SESSION CHAIR	**Assoc. Prof. Dr. Sevin UGURAL**	
TIME	**TITLE**	**PRESENTER**
14:00 – 14:20	APPLICATION OF TIME DEPENDENT COX PH MODEL IN CREDIT RISK ANALYSIS IN SERBIA	Milena KRESOJA - Sandra RACKOV
14:20 – 14:40	PANEL GWR ANALYSIS OF CONSUMPTION BEHAVIOR in TURKISH REGIONS	Bulent GULOGLU - Fuat ERDAL
14:40 – 15:00	THE FLEXIBLE FOURIER FORM AND PANEL STATIONARY TEST WITH GRADUAL SHIFTS	Şaban NAZLIOGLU – Cağın KARUL
15:00 – 15:20	VOLATILITY SPILLOVERS BETWEEN STOCK MARKETS AND BOND MARKETS IN SOME SELECTED EUROPEAN COUNTRIES	Ersan Öz - Resul Aydemir - Bülent Güloğlu - Ercan Saridoğan

15:20 – 15:40	**C O F F E E / T E A B R E AK**

WORKSHOP	
16:20 – 17:20	**Prof. Dr Prof. Dr. Ismihan BAYRAMOGLU (BAIRAMOV) - Izmir University of Economics**

HALL 3 – ARCHITECTURE

Presentations will be in Turkish. English Translated Abstracts will be delivered.

SESSION CHAIR	**Prof. Dr. Meral NALÇAKAN**	
TIME	**TITLE**	**PRESENTER**
14:20 – 14:40	İÇ MEKÂNDA 3D MODELLEME KULLANARAK FARKLI TASARIM ALTERNATİFLERİNİN OLUŞTURULMASI VE AFYON KOCATEPE ÜNİVERSİTESİ REKTÖRLÜK GİRİŞ MEKANI İÇİN OLUŞTURULAN TASARIM MODELLERİ	Mehmet SARIKAHYA - Ş. Ebru OKUYUCU - Necmi KAHRAMAN
14:40 – 15:00	GEÇMİŞTEN GÜNÜMÜZE UZANAN GELENEKSEL VE MODERN CAMİLERİN MEKÂNSAL KURGULARININ, TASARIM KONSEPTLERİNİN VE ESTETİK ARAYIŞLARININ DEĞERLENDİRİLMESİ VE CAMİ ÖRNEKLERİNİN ANALİZİ	Ş. Ebru OKUYUCU - Mehmet SARIKAHYA - Necmi KAHRAMAN
15:00 – 15:20	CUMALIKIZIK GELENEKSEL YERLEŞİMİ İLE BURSA TOKİ MODERN YERLEŞİMİNİN SÜRDÜRÜLEBİLİRLİK BAĞLAMINDA KARŞILAŞTIRILMASI	Güler KOCA - Gülşen AKIN

15:20 – 15:40	**C O F F E E / T E A B R E AK**

SESSION CHAIR	**Prof. Dr. Didem Baş YANARATEŞ**	
TIME	**TITLE**	**PRESENTER**
15:40 – 16:00	MATERIALS OF SPACES' & 'SPACES FOR MATERIALS'	Didem BAŞ YANARATEŞ
16:00 – 16:20	ALTERATION OF SPACE IN SILLE TRADITIONAL RESIDENCES VIA TECHNOLOGICAL EQUIPMENT	Elif BÜLÜÇ - Fatmanur BARAN - Havva Burcu YILDIRIM - Dicle AYDIN
16:20 – 16:40	TRADITIONAL AND MODERN INTERIORS of TURKISH HOUSE	Ikbal Ece POSTALCI – Güldehan ATAY
16:40 – 17:00	THE TRACES OF THE PAST... THE ROOTS OF THE FUTURE AN ESSAY ON CREATIVITY, PLAY AND ARCHITECTURE	Tuna ŞAHSUVAROGLU
17:00 – 17:20	CONSERVATION AND HIGH-TECH GO HAND IN HAND	Gamze KAYMAK HEINZ
17:20 – 17:40	THE IMPACT OF PASSIVE TRADITIONAL STRATEGIES ON SAVING ENERGY IN HOT CLIMATE	Nadia AL BADRI
17:40 – 18:00	NEW TREND IN DESIGNING	Ayşegül PEKPOSTALCI

	EXPERIENTIAL SHHOPPING SPACES	

26 MARCH 2015

GRAND GALA DINNER: Please check your coupon delivered with conference bag. Extra Ticket: 50 Usd per person

Departure from Hotel Lobby (Down Floor) : 19:30 / Arrival to Hotel : 23:00

27 MARCH 2015

MAIN HALL – CHEMISTRY (POSTER SESSION)

SESSION CHAIR		
TIME	**TITLE**	**PRESENTER**
	DIMERIZATION OF TETRAHYDROISOBENZOFURAN-4-ONE: SYNTHESIS OF NATURAL PRODUCT	Sedat SEVMEZLER – Arif BARAN
	AN EFFICIENT STEREOSELECTIVE SYNTHESIS OF SOME PSUDOCARBASUGAR POLIOLS	Sedat SEVMEZLER – Arif BARAN
10:00	STEREOSELECTIVE SYNTHESIS OF HALOGEN SUBSTITUTED CARBOSUGARS COMPOUNDS	Sedat SEVMEZLER – Arif BARAN
	STEREOSELECTIVE SYNTHESIS OF DIPHENYL SUBSTITUTED CONDURITOL-TYPE CARBASUGARS	Sedat SEVMEZLER – Arif BARAN
12:00	SYNTHESIS AND CHARACATERIZATION OF THE SCHIFF BASES AND THEIR TRANSITION METAL COMPLEXES	Esra KAKI - Hatice CEYLAN
	SYNTHESIS, CHARACTERIZATION, ELECTROCHEMISTRY AND VOC SENSING PROPERTIES OF NOVEL METALLOPHTHALOCYANINES	Esra KAKI - Ali Rıza ÖZKAYA - Ahmet ALTINDAL - Bekir SALİH - Özer BEKAROĞLU
	KINETIC DIFFERENCES BETWEEN THREE COMMERCIAL EPOXIES CURING TO ROOM TEMPERATURE	Juana ABENOJAR - Belén ENCINSO - Mariola PANTOJA - Miguel Angel MARTINEZ
	CHEMICAL CHANGES ON THERMOPLASTIC POLYMERS TREATED WITH ATMOSPHERIC PRESSURE PLASMA TORCH	Belén ENCISO - Noemí ENCINAS - Mariola PANTOJA - Juana ABENOJAR - Miguel Angel MARTINEZ
	ADDITION OF A CROSSLINKING AGENT INTO CONVENTIONAL SILANE SOLUTION: EFFECT ON HYDROLYSIS AND CONDENSATION PROCESS	Mariola PANTOJA - Juana ABENOJAR - Miguel Angel MARTINEZ - Yolanda BALLESTEROS

	NON-THERMAL ATMOSPHERIC PRESSURE PLASMA: SURFACE EFFECT ON BLACK GLASS-CERAMIC	Miguel Angel MARTINEZ - Carlos RODRIGUEZ-VILLANUEVA - Belén ENCINSO - Mariola PANTOJA - Juana ABENOJAR
	PHOTOPHYSICAL PROPERTIES OF NEWLY SYNTHESIZED BORON-DIPYRROMETHENE COMPOUNDS	Mustafa HAYVALI - Halil YILMAZ - Betül KÜÇÜKÖZ - Gökhan SEVINÇ - Sezen TEKIN - H. Gul YAGLIOGLU - Ayhan ELMALI
	SYNTHESIS AND PROPERTIES OF HYBRID POLYURETHANE ACRYLATE COATING MATERIALS BY UV IRRADIATION AND SOL-GEL METHOD	Sevim KARATAŞ - H.Burcu HANAY - Atilla GÜNGÖR
	SYNTHESIS AND CHARACTERIZATION OF UV CURABLE HYPER BRANCHED POLYESTER POLYOLS BASED ACRYLATES	Sevim KARATAŞ - Volkan DİNDAR - Atilla GÜNGÖR
	SYNTHESIS AND CHARACTERIZATION OF NOVEL METALLOPHTHALOCYANINES	Şaziye ABDURRAHMANOĞLU - Büşra MIZRAK
	SYNTHESIS AND CHARACTERIZATION OF RARE-EARTH SANDWICH COMPLEX	Şaziye ABDURRAHMANOĞLU - Büşra MIZRAK
	PHENOLIC AND FLAVONOID CONTENTS OF EXTRACTS FROM CLOVER LEAF	Yeşim YEŞILOĞLU - Sezer GÜLEN
	BENZO-15-CROWN-5 CONTAINING “NO” DONOR LIGANDS AND COMPLEXES: SYNTHESIS AND TAUTOMERISM ORTHO-HYDROXY SUBSTITUTED COMPOUNDS	Zeliha HAYVALI - Cemal ŞENOL - Duygu ŞAHİN - Öznur ŞENEL - Serhat KOÇOĞLU
	INFLUENCE OF TEMPERATURE AND TH CURRENT DENSITY ON THE HARDNESS OF THE COATINGS OBTAİMED IN VARIOUS ELECTROLYTES CONTENT OF IRON CHLORIDE	Boubaker Othmani - Boucetta said
	THE SYNTHESIS OF BIODIESEL FROM VEGATABLE OIL	Radia SELAIMIA, Abdelsalem BEGHIEL, Rabah OUMEDDOUR

HALL 1 – STATISTICS & CIVIL ENGINEERING (POSTER SESSION)

SESSION CHAIR		
TIME	**TITLE**	**PRESENTER**
	REGULARIZED MINIMUM	Ernest Fokoue - Bohan Liu -

	COVARIANCE DETERMINANT FOR CLASSIFICATION OF LARGE P SMALL N DATA.	Necla Gündüz
11:20 12:20	ESTIMATING THE RELIGION OF COUNTRIES ACCORDING TO SHAPES OF THE FLAGS USING SUPPORT VECTOR MACHINES AND KERNEL METHODS	Taha EREN SARNIÇ / STATISTICS
	DETAILED MICROZONATION STUDIES AROUND THE GOKPINAR DAM LAKE (DENIZLI)	Ali AYDIN - Suat TAŞDELEN - Mahmut GÜNGÖR - Erdal AKYOL
	FARKLI SINIF ÇİMENTO HARCI ÜRETİMİNDE METAKAOLİN KATKISI KULLANIMININ ARAŞTIRILMASI	Gökhan GÖRHAN - Gökhan KÜRKLÜ
	BEYAZ ÇİMENTO HARCI ÖZELLİKLERİNE METAKAOLİN KATKISININ ETKİSİ	Gökhan KÜRKLÜ - Gökhan GÖRHAN

HALL 2 – STATISTICS & ECONOMETRICS

SESSION CHAIR	**Prof. Dr. Mehmet EVKURAN**	
TIME	**TITLE**	**PRESENTER**
09:40 – 10:00	HIGHER EDUCATION AND DISTANCE EDUCATION APPLICATIONS IN TURKISH UNIVERSITIES	Mehmet EVKURAN
10:00 – 10:20	THE RESEARCH OF FACTORS THAT MAY AFFECT THE SUCCESS OF DISTANCE EDUCATION STUDENTS ON THEIR VOCATIONAL COURSES WITH THE METHOD OF LOGISTIC REGRESSION ANALYSIS	Hakan KÖR - Hasan ERBAY - Emre DEMİR
10:20 – 10:40	APPROXIMATE ALGORITHM FOR UNCONSTRAINED (UN) WEIGHTED TWO-DIMENSIONAL GUILLOTINE CUTTING PROBLEMS	Rachid OUAFI - Maya AIT ABDESSELEM

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 4 – STATISTICS & ECONOMETRICS

SESSION CHAIR	**Prof. Dr. Abdullah EROGLU**	
TIME	**TITLE**	**PRESENTER**
09:20 – 09:40	OECD ÜLKELERİNDE VE TÜRKİYE'DE VERGİ HARCAMALARI	Funda TUNCEL
09:40 – 10:00	STRATEJİK PLANLAMANIN	Gültekin ÖZDEMİR - İlker

	İŞLETMELERİN KARAR VERME DÜZEYLERİNDE KULLANIMI	TEKİN
10:00 – 10:20	A NEW LOAN PAYMENT MODEL UNDER CONSIDERING ON RHYTHMIC SKIPS AND VARIABLE INSTALLMENTS	Abdullah EROGLU - Gultekin OZDEMIR
10:20 – 10:40	TÜRKİYE'NİN RESMİ KALKINMA YARDIMLARI POLİTİKASI: EĞİLİMLER VE HEDEFLER	Şebnem TOSUNOĞLU

10:40 – 11:00	**C O F F E E / T E A B R E AK**

HALL 4 – STATISTICS & ECONOMETRICS

SESSION CHAIR	**Öğr Görv. Ömer Faruk AKMEŞE**	
TIME	**TITLE**	**PRESENTER**
11:00 – 11:20	STATISTICAL ANALYSIS OF STUDENTS' OPINIONS ABOUT THE EFFICIENCY OF WEB-BASED DISTANCE EDUCATION SYSTEM	Ömer Faruk AKMEŞE - Emre DEMİR - Hasan ERBAY3
11:20 – 11:40	A COMPRASION OF SOME META-HEURISTICS OPTIMIZATION METHODS FOR PARAMETER ESTIMATION IN LOGIT MODEL WITH AN APPLICATION TO VITILIGO DISEASE RISK FACTOR	Emre DEMİR - Emre DÜNDER - Mehmet Ali CENGİZ
11:40 – 12:00	2000 YILI VE SONRASI DÖNEMDE TÜRKİYE'NİN DIŞ TİCARET YAPISINDA COĞRAFİ YAKINLIĞA BAĞLI GELİŞMELER: ELEŞTİREL BİR BAKIŞ	Ayşegül AKKOÇ - Melahat YEŞİLKAYA

HALL 3 – ARCHITECTURE

SESSION CHAIR	**Dr. İbrahim IMAN**	
TIME	**TITLE**	**PRESENTER**
09:20 – 09:40	TOWARDS EFFICIENT SUSTAINABILITY	İbrahim IMAN
09:40 – 10:00	SUSTAINABLE EDUCATIONAL STRUCTURES	Bahar KAYA
10:00 – 10:20	PASSIVE COOLING STRATEGIES IN GREENING EXISTING RESIDENTIAL BUILDING IN HOT DRY CLIMATE: CASE STUDY IN BAHRAIN	May Al SAFFAR
10:20 – 10:40	BUBBLE FACADES	Antonio MACIA MATEU - Ana MORA VITORIA -

		Rebeca CEBRIAN ALBARRACIN - Verónica LEUZZI BETOSINI
10:40 – 11:00	INVESTIGATION OF REFURBISHMENT MADE IN RESIDENCES IN TERMS OF SUSTAINABILITY	Nilay COŞGUN - Tülay ESİN TIKANSAK - E.Özlem AYDIN

11:00 – 11:20	**C O F F E E / T E A B R E AK**

HALL 3 – ARCHITECTURE

SESSION CHAIR	**Prof. Dr. Nilay COSGUN**	
TIME	**TITLE**	**PRESENTER**
11:20 – 11:40	THE WAY PEOPLE DETERMINE THE FUTURE OF THE CITIES: LOCAL ELECTIONS	H.Burçin HENDEN ŞOLT
11:40 – 12:00	GELENEKSEL TARAKLI EVLERİNDE ZAMAN-MEKAN İLİŞKİLERİ	Hilal EREK
12:00 – 12:20	YENİ EĞİTİM ÇEVRESİ TASARIMINDA PERFORMANS ODAKLI YAKLAŞIM	Serefraz AKYAMAN

12:20 – 12:45	**CLOSING CEREMONY**
12:45 – 14:00	**LUNCH**

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ABSTRACTS

Crystallization of Calcium Carbonate in The Presence of Water Soluble Block Copolymer of Polyzwitterion and Polyethylene glycol

Ferdane KARAMAN and Özlem YAZICI

Yildiz Technical University Davutpasa Campus Department of Chemistry 34220 Esenler-Istanbul TURKEY

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Biomimetic crystallization of calcium carbonate particles in water through liquid-liquid and liquid-gas diffusion reaction at room temperature using a zwitterionic block copolymer namely, poly (4-sulfonic acid diphenylamin)-block-poly (ethylene glycol) (PSDA-b-PEG) as a template has been systematically investigated. PSDA-b-PEG was synthesized with tosylated PEG and amine-functionalized PSDA and was characterized using FTIR and NMR techniques. Initial pH of the solution, block copolymer concentration and crystallization time on the morphology of $CaCO_3$ have been used to control the crystallization of calcium carbonate particles. The $CaCO_3$ particles were characterized by FTIR, SEM and XRD. It was revealed that the use of zwitterionic block copolymer as a template for crystallization of $CaCO_3$ is a suitable approach for studying the biomineralization and could be useful for the design of novel materials with desirable shape and properties.

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Key Words: *Zwitterionic block copolymer, calcium carbonate, biomimetic mineralization, poly(sodium diphenylamino-4-sulfonate)-block-poly(ethylene glycol)*

Acknowledgements: This research was supported by TUBITAK (Project No: 107T697)

Zn2+ Effect on Biological Properties of Amsonia orientalis

Yonca AVCI DUMAN[1], Halil İbrahim TOYGAR[2], Aygül KINA[2], Sinem BALCI[2], Arda ACEMİ[2], Yonca YUZUGULLU[2]

[1]Kocaeli University, Science Letter Faculty, Chemistry Department, TURKEY

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Increasing heavy metal pollution caused by heavy metals is major problem for plants [1]. Although Zinc is the second important and abounded metal for micronutrient of plant excess of Zn^{2+} lead to toxicity [2,3]. In this study *in-vitro* effects of increasing concentrations of Zn^{2+} (0.1, 0.5, 1.0, 2.5, 5.0, 10 mM) on antioxidant enzyme activities and Malondialdehyde (MDA) and hydrogenperoxide(H_2O_2) content of *Amsonia orientalis* were investigated. The results showed that superoxide dismutase (SOD) activity of plant was decreased while catalase (CAT) activity was nearly unchanged at increased Zn^{2+} concentrations. In case of peroxidise (POD), activity was decreased nearly 37% at 0.5 mM Zn^{2+} concentration but, increased valid starting from 1 mM Zn^{2+} to 10 mM Zn^{2+}. MDA content was sharply increased at all Zn^{2+} concentrations. H_2O_2 content was also affected by Zn^{2+}. This content was decreased until 2.5 mM Zn^{2+} but, reached to the control level at 5 and 10 mM concentrations. Besides the spectrophotometric antioxidant enzyme activity; electrophoretic activity (activity staining) was also studied. Activity staining of SOD three bands was visualized. According to inhibition with KCN or H_2O_2, these bands were identified as Mn-SOD and Fe-SOD. All Zn^{2+} concentrations were inhibited to Fe-SOD activity of *A. orientalis*. Electrophoretic result of POD showed that intensity of POD activity was not decreased. For activity staining of CAT, bands were also visualized at increased Zn^{2+} concentrations also. These results showed that electrophoretic analysis of antioxidant enzymes was supported with the spectrophotometric enzyme analysis. Protein content of *A. orientalis* at increased Zn^{2+} concentrations was determined as SDS-PAGE. Results indicated that increased Zn^{2+} concentrations were caused decrease of intensity of proteins. However, Zn^{2+} concentrations exhibited new protein bands of 60, 55, 45, 29 kDa. The toxic effect of Zn^{2+} on *A.orientalis* was briefly discussed.

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Key Words: *Antioxidant enzymes, MDA, H2O2, Amsonia orientalis, Zn^{2+}*

Phthalocyanine Functional Photocurable Copolymer For Polymer Dispersed Liquid Crystal Display Applications

Humeyra MERT BALABAN[1], Hatice DİNÇER[2], Emel ÇALIŞKAN[1], Betül Nur ŞEN[2], Yeşim HEPUZER GÜRSEL[1]

[1]Author's contact address: Hitit University, Faculty of Engineering, Chemical Engineering Department, 19030, Çorum, Turkey

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Polymer dispersed liquid crystals (PDLC's) are formed when liquid crystalline material is dispersed within a polymer matrix [1, 2]. The development of new polymeric matrices for polymer dispersed liquid crystals (PDLCs) is an active area of research as the performance of PDLC is directly affected by polymer matrix properties. Recently, we have reported the syntheses of Pc-containing polystyrene (PS) and poly(*tert*-butyl acrylate) (P*t*BA) in which phthalocyanine compound is either end-group or core [3, 4]. In continuation of our recent studies on Pc-containing polymers, we present here the synthesis of asymmetrical zinc phthalocyanine (aZnPc) functional photocurable copolymer by the combination of atom transfer radical polymerization (ATRP) and copper (I) catalyzed azide alkyne cycloaddition (CuAAC) click reaction and the use of the functional copolymer as polymer matrix of PDLC film. We fabricated the PDLC film by polymerization induced phase separation technique (p-PIPS) technique in the presence of 4'-(octyloxy)-4-biphenylcarbonitrile (8OCB) liquid crystal using photocurable aZnPc functional copolymer as co-initiator, ethylene glycol dimethacrylate as difunctional cross-linker, benzophenone as initiator. Thermal and optical properties of PDLC film were investigated by using differential scanning calorimetry (DSC) and polarized optical microscopy (POM).

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Key Words: *click, atom transfer radical polymerization, phthalocyanine, polymer dispersed liquid crystal*

Synthesis, Spectroscopic Characterization and Theoric Crystallographic Information of Novel phenyldiazaline Calix[4]arene Containing Acryloyl Moiety

Sevil ÖZKINALI[1], Zeynel ÖZTÜRK[2]

[1]Hitit University, Science&Literature Faculty, Department of Chemistry, Çorum, TURKEY

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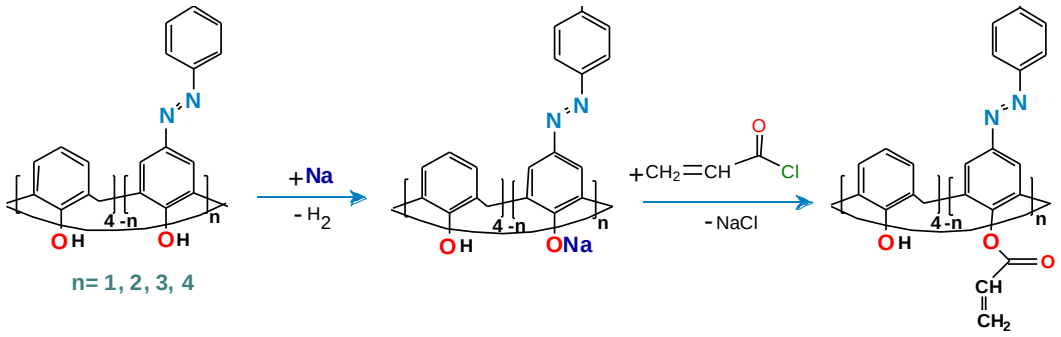
Calixarene are well known macrocyclic molecules of defined size promising for versatile supramolecular and biological applications due to their multiple availability for chemical modification within a concentrated space [1-3]. By changing the chemical groups of the upper and/or lower rim, it is possible to prepare different derivatives with differing selectivities for various guest ions and molecules [4-5]. A series of acryloyl derivatives of calix[4]arene6,7 which is including the first examples of mixed phenyldiazaline esters. In the first step, p-tert-butylcalix[4]arene have been obtained by condenzation of p-tert-butylphenol and formaldehyde. In the second step calix[4]arene have been prepared by removing the tert-butyl group by the reaction of p-tert-butylcalix[4]arene with $AlCl_3$ according to reverse Friedel-Crafts reaction. The calix[4]arene compounds containing azo groups have been prepared by the reaction of diazotized p-chloroaniline with calix[4]arene in dry condition in order to 1:1, and 1:2 molar ratio. Acryloyl derivatives of azo calix[4]arene compounds have been synthesised by the reaction of azo calix[4]arene with metallic sodium and then acryloyl chloride in N2 atmosphere in order to 1:1, 1:2, 1:3 and 1:4 molar ratio. The structures of these compounds have been characterized by elementel analysis, IR, UV-VIS, ^{1}H-NMR and ^{13}C-NMR, XRD.



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Key Words: *Azocalix[4]arene, Azocalix[4]arene-ester, Acryloyl chloride, Spectral properties,*

Zetasizer Measurements Of Polymer-Drug Delivery Systems

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Polymeric carriers, which physically entrap molecules of interest, and polymer conjugates, to which such molecules are chemically bound, play an important role in modern pharmacology. Drug-delivery vehicles can be coated with a hydrophilic polymer to allow both inhibition of opsonization and enhancement of water solubility. Surface properties of drug carrier systems are responsible for their interactions with plasma proteins. Zetasizer measurements which are zeta potential, particle size and mobility provide valuable properties of particles or molecules in liquid medium. Zeta potential measurements will give information about the overall surface charge of the particles and how this is affected by changes in the environment (e.g. pH, presence of counter-ions, adsorption of proteins). Zeta potential can also be used to determine the type of interaction between the active substance and the carrier; i.e. whether the drug is encapsulated within the body of the particle or simply adsorbed on the surface. This is important because adsorbed drug may not be protected from enzymatic degradation, or may be released very rapidly after administration. Particle size (PS) and width of particle size distribution called polydispersity index (PI) of nanosuspensions are responsible for saturation solubility, dissolution velocity, physical stability and biological performance of nanosuspensions. Change in particle size affects saturated solubility and dissolution velocity [1,2].

In this study, bioactive polymeric drug delivery system, poly (maleic anhydrite-*co*-vinyl acetate) copolymer carrying three different drug, have been examined by Zeta Potential Analyzer. Zeta potential, mobility, conductivity and particle size of prepared polymer-drug system were determined by using the Zeta Potential Analyzer in water with different pHs.

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Key Words: *polymer-drug delivery system, zeta potential, particle size, mobility*

Acknowledgements: *This work has been supported by Scientific Research Project Coordination Center of Yildiz Technical University, Turkey (2014-01-02-YL02 and 2014-01-02-YL09)*

Determination Of Optimum Conditions For Biogenic Amines Derivatized With Acetylacetone

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[2]*Ondokuz Mayıs University, Faculty of Science and Arts, Department of Chemistry, Samsun, TURKEY*
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1.Abstract

Amines are basic nitrogenous compounds in that one, two or three atoms of hydrogen in ammonia are replaced by alkyl or aryl groups [1]. Amino acid decarboxylation is the most common mode of synthesis of amines in foods, and the aromatic amines may cause foods to become toxic. When these amines are formed by the action of living organisms (bacteria) through the decarboxylation process of amino acids, they are designated biogenic [2]. Biogenic amines are formed in protein-rich foods and fermented foods. Biogenic amines are expected of its formation in foods allowing microbial and biochemical activity and containing protein or free amino acids [3]. They do not create health problems unless biogenic amines are taken at high levels in food (80-100 ppm) or unless they are limit or defective as genetic natural catabolism mechanism of individual [4].

Biogenic amines are difficult to analyse because they generally exhibit little, if any, ultraviolet or visible light absorption, florescence or electrochemical activity. Therefore, analyses of biogenic amines by UV and HPLC is required to derivatization with suitable agent.

According to previous studies, ıt has not been observed any studies about biogenic amines (phenylethylamine, histamine, cadaverine, putrescine, spermidine, spermine, tyramine and tryptamine) that was derivatized with acethylacetone. In this study, optimum conditions were determined for derivatization reaction.

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Key Words: *Biogenic amines, acethylacetone, derivatization*

Investigation Of Thermodynamic Properties Of 4-Decyloxybiphenyl-4'-Carboxylic Acid Liquid Crystal By Inverse Gas Chromatography

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Liquid crystals are the advanced technological materials with combination of fluidity and anisotropy in optical, electrical and magnetic properties. Liquid crystal research has received considerable attention from many scientists due to their applications in electro-optical materials such as liquid crystal displays (LCDs) which has allowed the development of mobile data processing and communication tools in the last decade [1].
The determination of relationship between the mesogenity and the chemical structure is of great importance to modify some physical properties such as melting and clearing temperatures, inducing new phases with the wide thermal range and forming thermotropic liquid crystals which are self-organised systems in a certain temperature range [2].
In this study, thermotropic calamitic liquid crystalline material 4-Decyloxybiphenyl-4'-carboxylic acid (DSKA) has been synthesized and characterized. Then, the selectivity of the thermotropic liquid crystalline material DSKA was studied using n-butyl acetate , isobutyl acetate and tert-butyl acetate at temperatures between 60°C and 270°C by inverse gas chromatography technique. Retention diagrams were obtained for the studied liquid crystal-solvent systems. The interactions of liquid crystal with n-octane, n-nonane, n-decane, tridecane, dodecane, undecane, n-butyl acetate, isobutyl acetate, n-propyl benzene, isopropyl benzene, ethyl benzene, chloro benzene and toluene between 245°C and 270°C were examined. Liquid crystal-solvent interaction parameters for Flory-Huggins theory, and equation of state theory, effective exchange energy parameters, the partial molar heat of mixing at infinite dilution of the solvent, molar heat of vaporization of solvent, the partial molar heat of sorption of the solvent were obtained.

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Key Words: *Liquid crystal, Inverse gas chromatography*

Stereoselective Synthesis Of Diphenyl Substituted Conduritol-Type Carbasugars

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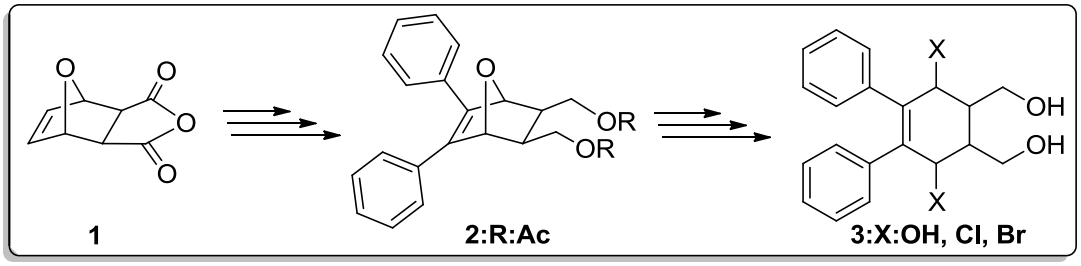
Synthetic and naturally occurring conduritols containing carbasugars have much of biological activities and have significant applications in biological and medicinal chemistry[1]. Cyclohexitols are polyhydroxlated cyclohexanoid compounds and some of them are known as carbasugars. A number of conduritol derivatives have antibiotic, antileukemic activity[2], particularly as glycosidase inhibitors[3]. Therefore, our research programme focuses on synthesis of phenil substituted conduritols **3**.



In our ongoing project, we have prepared diphenyl substituded oxo-norbornene derivatives using Suzuki Coupling method and by using unexpensive chemicals, methods. Cleavage of C-O bound in the oxo-norbornene system by Lewis acides gave di-halogeno and tetra-hydroxy-type carbasugars having conduritol moiety.

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A Promising Approach in the World: Tensile Structures Roofing

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1. Abstract

Civil engineering roof systems for outdoor environments find use in bazaars, car park areas, outdoor mosque area, outdoor sport facilities and places built to protect people or their goods from environmental effects such as sun and heavy rain. Therefore, such roofing systems have great amount of application and each country spends huge volumes of materials to build these roof systems to improve life quality of people in cities. Thus, it is evident that further research on these civil engineering structures has the potential to decrease the cost of these roof systems and build more efficient ones. Generally these roof systems are manufactured employing structural steel material. As is well known, steel has promising mechanical properties such as high strength and high stiffness which can be exploited in structures that expected to receive very high magnitude of loadings, such as earthquake resistant buildings. However, there also exist some disadvantages of completely using steel in these roof systems. For instance, due to unit weight of material the roofs manufactured using steel are very heavy. So, construction process requires significant labour and time. Also steel construction is an expensive process considering measure of covered area for outdoor roof systems. Moreover, these kinds of roofs manufactured using completely steel are not flexible in use, that is to say, when it is unnecessary for some period of time it is not possible to remove the roof covering and re-cover it when it is necessary again. This paper investigates a novel concept in the world called as “tensile structures” used to cover wide outdoor areas. This concept actually combines civil engineering designs and some architectural aspects. Instead of using materials with high stiffness, tensile structures adapt membrane materials to cover wide areas. Cable elements accompany those membranes to transmit the internal forces and stresses to structural columns or ground. Although membrane materials have lower strengths compared to steel, these structures offer flexibility in use, light coverings, lower costs and faster construction time. Since these structures are built utilizing membrane materials and cables which support tension forces only, conventional stress office methods are not capable of handling their analyses and designs. Consequently, specific computational methods must be used to perform such designs. In this paper special commercial software is used to investigate behaviour of tensile structures. Three different configurations are employed to cover a wide area. Structural analysis procedures of those configurations are undertaken and stress distributions in membranes are investigated. Discussions pertaining to motivation behind these structures, load carrying capabilities and working principles are provided. Roof systems designed by used tensile structures to enclosed modern structures such stadiums and shopping centres to span large areas cover. Afford the architect the opportunity for imaginative creation and the same time network of slender cables provide the strength necessary to support the tremendous loads involved. Space activities provide further applications for the tensile structure concept since weight is a principal factor in determining feasibility [1]. Most often, tensile structures are used for a dramatic effect over performance and outdoor exhibition areas, music stages, parking areas, entrance driveways, walkways, theatres, airport, domes, stadia. Designed as demountable canopies or permanent, they act as a

foil for lighting and the projection of images, and can also be used for protecting audiences from the elements [2]. The architecture in second half of twentieth century. After the war, young architects, engineers, and entrepreneurs had been looking for new integrated part of it instead. It was of prime importance, with the minimal material and energy, to rebuild the destroyed cities in a more effective and beautiful way at that time [3]. Through tension structures come in varying size, scale, shape and form, all of them consists of the same basic elements [4]. Outcomes of this study illustrate that these tensile structures have the potential to replace some applications of steel roofs to lead lighter, flexible, low cost and more aesthetic structures for outdoor environments. The analysis used of tensile structures below.

Equilibrium in the vertical direction yields:

$$V = \frac{\omega L}{2} \qquad (1)$$

Because cables cannot resist bending, sum of moments about any point will be equal to zero.

$$\sum M_{midpoint} = 0 \qquad (2)$$

$$H(h) + \omega\left(\frac{L}{2}\right)\left(\frac{L}{4}\right) - V\left(\frac{L}{2}\right) = 0 \qquad (3)$$

$$H = \frac{\omega L^2}{8h} \qquad (4)$$

And the force in the cable is:

$$F = \sqrt{V^2 + H^2} \qquad (5)$$

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Keywords: *Tensile structures, outdoor roofing, structural mechanics*

Efficiency of Use of a Carbon Geomembrane for the Construction of the Embankment in Poor Load-Bearing Foundation Soil with a Verification of the Impact of the Theory of Large Deformations in the Numerical Calculations

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1.Extended Abstract

In this paper we verified the opportunities and efficiency of the amplification of a carbon fibre fabric geomembrane (hereinafter referred to as carbon geomembranes) in very compressible and poor load-bearing foundation soils of larger and complex infrastructure facilities (in our example a road rock-fill dam). These kinds of soils are usually not suitable for the foundation of larger and complex infrastructure facilities without further reinforcement measures. The use of a carbon geomembrane can (according to our estimates) significantly reduce unfavourable horizontal impacts on the foundation soils (taken over by the geomembrane) and the distortionary component of the settlements, which may also have an unfavourable impact on nearby objects. Carbon fibres have excellent mechanical properties, but their usefulness in geotechnics are still quite uninvestigated.

In the numerical analysis, we considered the installation of a carbon geomembrane directly on the prepared substructure in the excavation at a depth of 0.5 m below the surface, where the groundwater level is located. The numerical model takes into account a homogeneous clay layer thickness of 10.0 m under which are located highly resistant and impermeable miocenic marls, and the construction of a rock-fill embankment with a height of 5.0m. We used the mechanical properties of the carbon fibre fabric manufactured by MAPEI. They are basically intended to repair concrete structures and to improve the flexural and shear strength of concrete elements. Due to the useful mechanical properties of carbon fibre fabric it was estimated that it would be suitable to carry the tensile stresses in poor foundation soils.

Due to the low permeability of a clay soil with a thickness of 10.0 m below the embankment, we took into account the gradual construction of the embankment in the numerical calculation, at a constant speed of construction (1.0 m of height per week). For the intended speed of construction we carried out a simultaneous stress–strain analysis and an analysis of the hydrodynamic consolidation. Due to the lack of experience of the use of the numerical elastic-plastic analysis with respect to the deformed structure, we considered an example of the construction of the embankment on the reinforced (with a carbon geomembrane) foundation soils, analyzed (separately) using the method step by step to the deformed and undeformed structure of the soil and embankment. In other words, with and without taking the theory of large deformations into account. Numerical calculations were carried out using the program Plaxis 3D Tunnel, which is based on the finite element method (FEM) and allows the consideration of the theory of large deformations.

The results of the numerical analysis are shown in TABLE 1. A unique surprise for the layperson are the results of the consolidation analysis of the non-reinforced embankment, which may even not be built (it collapsed) in the case of the application of the undeformed

model in selected conditions. The value of its displacement is too high, as is its value is already $U_{y,max}$= - 30.00 m at a height of 4.3 m. The results obtained using the deformed model, show that the embankment can be built, but its computational settlements reach the value $U_{y,max}$ = - 75.00 cm. Of course, both arguments are equivalent, because the height of the constructed embankment (deformed model) would be 4.25 m (at the calculated settlements) and so the embankment height of 5.0 m still wouldn't be built. When using a deformed elastic-plastic model of the foundation soil it is therefore necessary to apply the deformed model impacts, so that it corresponds to the real situation.

Table1. Comparison of the results of the numerical analysis for the reinforced road embankment on the deformed and undeformed model with and without an additional fill on top of the embankment to compensate for the resulting settlements during construction

Model Impacts of embankment	Undeformed No additional fill	Deformed No additional fill	Deformed Additional fill
Excess pore pressure after 35 days [u_{max}]	- 73.95 kPa	- 72.28 kPa	- 77.86 kPa
Excess pore pressure after 180 days [u_{max}]	- 24.81 kPa	- 22.04 kPa	- 23.11 kPa
Excess pore pressure after 360 days [u_{max}]	- 6.94 kPa	- 5.604 kPa	- 5.64 kPa
Settlement of embankment after 35 days [$U_{y,max}$]	- 32.23 cm	- 29.88 cm	- 32.30 cm
Settlement of embankment after 180 days [$U_{y,max}$]	- 43.67 cm	- 40.58 cm	- 43.95 cm
Settlement of embankment after 360 days [$U_{y,max}$]	- 47.33 cm	- 43.69 cm	- 47.27 cm
Tensile force in the geomembrane after 35 days [N_{max}]	220.45 kN/m'	202.81 kN/m'	223.85 kN/m'
Tensile force in the geomembrane after 180 days [N_{max}]	214.03 kN/m'	197.01 kN/m'	217.63 kN/m'
Tensile force in the geomembrane after 360 days [N_{max}]	212.84 kN/m'	196.04 kN/m'	216.44 kN/m'

It is necessary to take large deformations of soils into account during the construction of embankments and other geotechnical structures built on poor load-bearing and deformable soils. However, the application of such models for verifying the Ultimate Limit States (ULS) and Serviceability Limit State (SLS) require significant caution, a wealth of experience and a good knowledge of the numerical procedures and the physical properties of the soils.

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Key Words: *carbon geomembrane, embankment, theory of large deformation, reinforcement of poor load-bearing capacity soils*

Prediction of Compaction Behaviour of Soils at Different Energy Levels

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Compaction tests forms one of the important aspects in geotechnical engineering practice. These tests are time consuming and require large quantity of soil also. In this paper based on the results of the compaction tests carried out for different soils of varying plasticity characteristics at different compaction energies and on published data, it has been brought that there is a good correlation between the optimum moisture content and plastic limit for the . In addition to this one can predict the modified compaction parameters just knowing the plastic limit of the soil.

For the present investigation, three different soils from North Cyprus (Tuzla, Değirmenlik and Akdeniz) and a soil from Turkey (highly plastic montmorillonitic clay) were chosen. These soils are heavily in use for civil engineering activities like construction of pavements, embankments and earth retaining structures. Table 1 present their index and other physical properties. It may be seen from Table 1 that there is wide variation in their properties.

Compaction tests were carried out at three different energy levels for the four soils described.. They are standard Proctor test (SP), reduced modified Proctor (RMP) and modified Proctor (MP). For the standard Proctor, the compaction energy works out to be 593.7 kJ/m^3. In the modified Proctor test, the compaction energy works out to be 2693.3 kJ/m^3. In the reduced modified Proctor test the procedure is same as modified Proctor except the number of layers are three instead of five. The compaction energy works out to be 1616 kJ/m^3. [1]

Based on the experimental results obtained for maximum dry density vs. optimum moisture content for the four different soils with different compaction energy levels it has been found that irrespective of soil type and compaction energy levels both the maximum dry density and optimum moisture content are linearly related with a very high correlation coefficient of R= 0.994.

Results obtained from laboratory tests as well as from literature show that the correlation between maximum dry density and OMC for different soils, compacted for two compaction energy levels is very good.

The equation obtained with very high correlation coefficient is:

$$\gamma_{d\max} = 33.85 - 13.58\log(OMC) \qquad R= 0.99 \qquad (1)$$

Experimental results show that the correlation between optimum moisture content, OMC and (i) liquid limit and (ii) plastic limit is very good for several soils collected from literature apart from author's experimental results. It is clearly seen that plastic limit correlates very

well with OMC than the liquid limit. The equation relating OMC and plastic limit works out to be:

$$OMC = 0.94 w_p \qquad \text{R=0.98} \qquad (2)$$

It is thus seen that one can predict OMC knowing the plastic limit with reasonable accuracy.

Having obtained OMC one can get the maximum dry density from equation (1).

From experimental results it has been found that both OMC and maximum dry density of Proctor's test results and that of modified Proctor's test results of authors' as well as data collected from literature correlate very well.

It is seen that the correlation is highly satisfactory. Having obtained both OMC and maximum dry density for Proctor's energy level using Equation (1) and (2) , one can get the OMC and maximum dry density for modified Proctor condition using Equation (3) and (4) respectively.

$$OMCforMP = 0.77 OMCforSP \qquad (3)$$

$$\gamma_{d\max}\ forMP = 1.09 \gamma_{d\max}\ forSP \qquad (4)$$

Where OMC is optimum water content, MP is modified Proctor, SP is standard proctor and γ_{dmax} is maximum dry density

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Key Words: *(compaction,plastic limit,compaction energy)*

Sediment Volume Tests for expansive soil identification and Classification

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Expansive soils are those soils which undergo significant volume changes when subjected to water intake. The upward and downward movement of soils causes a big damage to railways, highways and building constructions resulting millions of dollars loss. Therefore identification and classification of them are essential for the suitable solutions and precautions to be undertaken.

In geotechnical engineering, clays are defined as those soils, which are composed predominantly of clay minerals. These clay minerals, which are nothing but hydrous alumina silicates, belong to a larger mineral family called phyllosilicates. There are different classes of clay minerals such as 2-layered clay minerals (ex: kaolinite mineral), 3-layer clay minerals (ex: montmorillonite mineral), 4-layer minerals (ex: chlorite mineral) and so on. These clay minerals along with the associated exchangeable cations play a dominant role in controlling the physic-chemical and engineering behavior of fine-grained soils. Among the various types of clay minerals, kaolinite and montmorillonite represent the two extreme types and need major consideration. While kaolinite is almost inert material from the view point of swelling, montmorillonite clay minerals play a very dominant role in contributing to swelling. The unit cell of montmorillonite mineral consists of an alumina octahedral sheet sandwiched between two silicate sheets. The bonding between the adjacent unit cells of montmorillonite mineral is through very weak van der Waals' forces. This is the primary reasons for swelling to take place.

Three main forces that exist in the fine grain soil water system are i) the forces due to self-weight , ii) electrical forces of attraction (i.e. distance forces), iii) electrical forces of repulsion (i.e. distance forces). Even though, the latter two forces are negligibly small compared to the contact forces in coarse grained soils, their influence is all the more important in a system with very high water content wherein the effect of mechanical forces like inter particle friction is appreciably less. The inter particle of attractive and repulsive forces being the predominant forces in a settling clay- electrolyte system, any changes in them are likely to control the process of formation of the sediments, their nature and the resulting equilibrium sediment volume. In addition, soil clay mineralogy plays an important role on the equilibrium sediment volume of fine-grained soils under different physic-chemical environments.

The effects of dielectric constant of the pore medium on the equilibrium sediment volume of the kaolinitic and montmorillonitic soils are quite opposite to each other. The sediment volume in water is dominated by diffuse double layer water, whereas the sediment

volume in kerosine is dominated by attractive forces leading to flocculent clay fabric. Kaolinitic soils show higher sediment volume in kerosene/carbon tetra chloride than in water whereas this is opposite for montmorillonitic soils. This characteristic behavior has been used to develop the free swell ratio method of classifying the soil with respect to their swelling magnitude.

This can be effectively used for classifying the degree of expansivity of natural fine-grained soils and also to obtain the clay mineralogical composition of such soils. Sridharan and Prakash have defined a term Free Swell Ratio (FSR) as the ratio of equilibrium sediment volume of 10 g of oven dry soil passing 425 μm sieve in distilled water (V_d) to that in carbon tetra chloride (V_k) after an equilibration period of 24 h.[1]

$$FSR = V_d / V_k \quad (1)$$

Many laboratory tests were conducted to obtain useful information about the fine-grained soils with sediment volume test. This paper intends to examine the procedural aspects of the sediment volume tests and mechanisms involved to critically evaluate the validity of the results obtained and suggest a rational improvement to the existing test procedures.

A meaningful and scientific rationale has evolved from the settling behavior of fine grained soils to provide a sound scientific basis for the free swell ratio method.

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Key Words: *(swelling,free swell ratio,clay)*

Treatment And Improvement Of Geotechnical Properties Of Fine Grained Soil Using Lime

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Abstract.

This study presents the results of an experimental work carried out to investigate the effects of treatment of fine bentonite clay using various contents of lime. Tests conducted verified substantial changes and significant improvement in physical and mechanical characteristics of the clay. Techniques including ultrasonic tests and unconfined compression were utilized for a series of lime content (0%,2%, 4% and 6%) for variable curing times.

The studied clay soils revealed that lime treated clays get changed and improved with regard to particular geotechnical characteristics due to cation exchanges, particle rearrangements and pozzolanic reactions. The analysis of ultrasonic tests and compressive strength showed a process of gradual increase in strength and compactness of the reaction products over time. For an optimum dose and extended curing time, the stabilized soil acts as a rock.

Key Words: *lime, fine grained soil, treatment, compression, bentonite, stabilization.*

Temperature Trend Analysis in Urmia Lake Basin Compared with Water Level Fluctuations of the Lake

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Abstract

This paper presents trend analysis during a 40-year period for temperature data obtained from 19 stations over Urmia Lake Basin. The results of this research indicate a significant positive trend of annual temperature throughout the basin. Moreover, temperature trends in monthly scale also shows a positive direction, although, in some stations no trend is observed in certain months. Comparing these results with the water level fluctuations of Lake Urmia indicates that the decline of water level can be only partially related to the significant positive trend in temperature throughout the basin. Temperature rise and the corresponding increase in the agricultural water demand cannot be fully attributed for the fluctuations of water level in Urmia Lake. Hence, some other causes such as extensive water related project developments throughout the basin could be considered as other important factors for the lake level deterioration. A comprehensive and integrated study is needed to determine the impact of various factors on the lake level fluctuations which could be used for determining the short-term as well as long-term actions and plans to save the lake from further shrinkage and to establish a sustainable socio-ecosystem in the area.

INTRODUCTION

Our study represents an initial stage in research designed to distinguish temperature trends in Urmia Lake basin using Mann-Kendall nonparametric (MKnp) test and compare the results with observed water level elevation of Urmia Lake during the studied period. The results of this study may help to further clarify some of the reasons for the recent crisis in Lake Urmia. The study area, methods, main results according to the goals of our study and finally main conclusions are discussed in following sections.

Study Area and Data

Urmia Lake basin with area of 5750 Km2 is situating between 35◦ 40′–38◦ 30′ northern latitudes and 44◦ 07′–47◦ 53′ eastern longitudes and average altitude of 1276m.

Methods

In this study trend of annual and monthly temperature has been analyzed using the Mann–Kendall non-parametric method.

Discussion

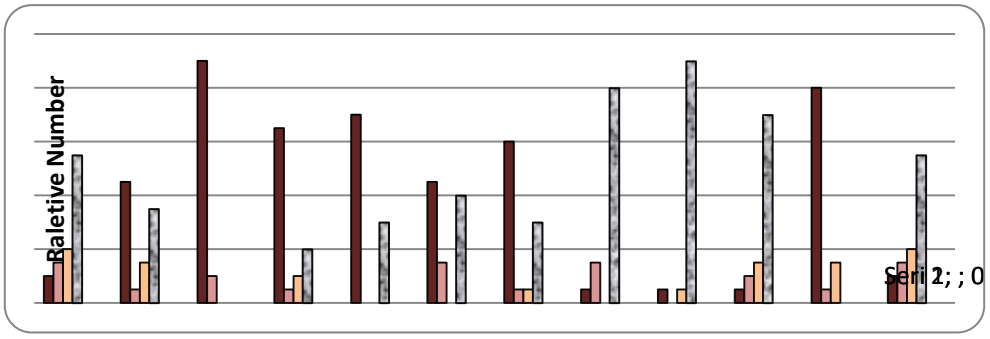

Figure2. Relative number of each trends' class in temprature for different months.

The dark red bars indicate significant positive trends and pink and orange ones are indicatives of stable and poor positive trends respectively. At last the gray bars are signs for number of stations with No trends conditions.

Conclusion

This study presented a statistical analysis of trends in monthly temperature records from 19 thermometry stations in Urmia Lake Basin for the period expanding from 1966 to 2007. Trend analysis by Mann-Kendall non-parametric method indicated increases both in annual and monthly temperatures. Annual temperature trends analysis revealed that about 80% of stations have significant increasing trend and the remaining 20% evenly have stable and poor positive trends. By comparing the trend analysis results with lake's water levels and time series of total inflow to the lake together with average temperature of selected stations over the basin, the increase in the temperature data can be considered only as one of the factors, among others, for the sharp decline in the lake's water level. The rate of temperature increase does not justify the amazingly sharp drop in lake's water level in recent years.

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Key Words: *Climate Change, Trend Analysis, non-parametric Mann-Kendall, Uremia Lake*

Measurement Of Residual Stresses By The Neutron Diffraction Technique In Welded Joint

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Abstract

The welds are the site of high residual stresses, localized in the vicinity of the weld cracks. Their presence caused many type of damage mode as stress corrosion, fatigue, sudden failure and increasing the temperature of ductile / brittle transition. Residual stresses in restrained welds and weld repairs are very complex. The heat treatment affects the value and distribution of residual stress in the specimen. This peak stress in all three samples occurred not at the toe, but in the middle of the weld bead, where the yield stress is higher. The transverse residual stresses of around half the maximum value of longitudinal stress have been observed. The use of the neutron diffraction (ND) technique for residual stress measurements is described. In addition, studies of macrostructure and hardness were conducted. The results of different tests conclude the influence of heat treatment on Residual stresses in welds.

***Key words*:** *Welding, Heat treatment, Residual stresses, neutron diffraction measurement,*

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Confidence Intervals for the Behrens-Fisher problem: A Parametric Bootstrap Approach

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The Behrens-Fisher problem concerns the inferences for the difference between means of two independent normal populations without the assumption of equality of variances. The difficulty with the Behrens-Fisher problem is that exact solutions are not available satisfactorily since nuisance parameters are present. Recent advances in statistical computation have made a tremendous positive impact on fundamental sciences. The parametric bootstrap approach is a type of Monte Carlo method applied on observed data. This approach can be applied in situations where samples or sample statistics are not easy to derive. In this study, we develop a new confidence interval based on parametric bootstrap for Behrens-Fisher problem. We compare proposed method with classical *t*, Welch-Satterthwaite, Cochran-Cox and generalized confidence intervals. We conduct an extensive simulation study to evaluate expected lengths and coverage probabilities of the proposed confidence intervals. Finally, methods are applied to an analysis of real data set for the illustration purposes.

Measuring social inequality: Comparison of Gini coefficient and Theil index

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Measuring social inequality: Comparison of Gini coefficient and Theil index

Distribution of the national income and wealth has long attracted the attention of both scientists and the general public (Clarke et al., 2003). However, Addison et al. (2001) rightly pointed out that social inequality has increased in all societies since the last decades of 20th century. Economic growth depends on the level of inequality in wealth distribution, so high inequality in wealth distribution stunts the economic growth, while moderate distribution accelerates it. The consequences of unequal distribution of social wealth are visible in all populations, being particularly pronounced in marginalised social groups.

Analysis of social inequality is usually conducted through measures of concentration, but Coll (2011) warns that an indicator of inequality is reliable if it satisfies the transfer principle, scale independence, anonymity and population independence. Gini coefficient and Theil index satisfy these four properties, allowing for the comparison of wealth distribution between different regions and countries. Many researchers frequently use Gini coefficient in their research, due to easier calculation and the possibility of graphical representation (Lorenz curve). Is Gini coefficient appropriate for measuring economic inequality or should it be supplemented by some more accurate indicators? We propose the introduction of standardised Theil index, which – compared to Gini coefficient – offers the possibility of decomposition to the components that show variability within and between groups. The values obtained using Theil index are therefore more precise and they better explain unequal participation of social groups in distribution of economic wealth.

The paper considers distribution of certain parts of economic structure of the Roma according to the regions in two Southeast European countries: Serbia and Croatia. In addition, these two countries have different statuses in the European Union: Croatia is a full member, while Serbia is a candidate for accession to the European Union. The Roma are traditionally the most marginalised group on the territory of Europe, thus least participating in the distribution of economic wealth. The research is based on the analysis of the employed active Roma who participate in the distribution of economic wealth, and a share of high school and university students older than 15, as a part of economically inactive population who could potentially count on a share of the economic wealth. In order to obtain a better insight into the social status of the Roma, the studied parts of population are compared with the share of the employed and the share students in the entire population. Identical types of data were collected for the entire population of both Serbia and Croatia with the purpose of making a comparison of the results for the Roma population. The data from 2011 Census conducted on the territories of the Republic of Serbia and the Republic of Croatia were used as a basis of the research. The census results were grouped according to the districts formed by NUTS 3

categories (Nomenclature of Territorial Units for Statistics). The results for Serbia are thus grouped into 25 groups (districts), while in Croatia there are 21 groups.

Using Gini coefficient and Theil index, we showed that in both countries the Roma are less involved in employment and education than other population. Accordingly, it can be concluded that they participate less than other population in the distribution of social wealth. However, in Serbia this difference is much smaller than in Croatia. Gini coefficient for the employed Roma in Serbia is 0.465, and Theil index is 0.397; Gini coefficient for the employed Roma in Croatia has the value of 0.660, while Theil index has the value of 0.699. Since the increase of inequality causes the increase of the value of the index, it can be concluded that the participation of the Roma in distribution of economic wealth is much less in Croatia than in Serbia. Theil index for students in both countries has a lower value than for the employed, but in Croatia it still has twice the value compared to the other parts of the population.

Although in Croatia there is greater territorial concentration of the Roma in certain districts than in Serbia, it cannot be claimed that the Roma live in poorer districts. On the contrary, the coefficient of GDP per capita in districts and the participation of the employed Roma show strong positive relationship. For Croatia, Pearson's coefficient of correlation is +0.76, while it is much smaller when we relate it to GDP and the number of students (+0.45). In our previous research (Sokolovska, Jarić 2014) we showed that the Roma are the people with traditionally low level of education, which is the fact we use to explain the reason for their marginalisation.

Comparing the results, we can see that Theil index in all cases, except for the employed Roma is Croatia, had lower values than Gini coefficient. This difference in values was due to large variability in our data. Since Gini coefficient is sensitive to changes of inequality around mode/median, and Theil index takes into account the variability between and within the studied groups, we regard it as more precise and recommend it in research of social inequality, especially for data that show large variability.

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Key Words: Inequality-based measures; Roma people; Serbia; Croatia; Cross-regional research.

Highlights

- The use of Gini coefficient and Theil index of social inequality is compared.
- They are tested on the population of Roma people in Serbia and Croatia.
- Both measures shows regional differences in their employement and education.
- The application of Gini coefficient and Theil index depends on variability of data.
- We find Theil index more precise and suitable for cross-regional research.

Regularized Minimum Covariance Determinant for Classification of large p small n data

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Regularized Minimum Covariance Determinant for Classification of large p small n data

Extended Abstract

DNA Microarray Gene Expression data, audio signal data, image data, term frequency matrices derived from documents/unstructured data, all have in common the fact that they are high dimension low sample size (HDLSS), also known as large p small n data. In fact, it is not uncommon for instance to come across gene expression data with sample size n <50 and input space dimensionality p > 5000. A direct consequence of this n <<< p characteristic/condition of the data is the fact that when one needs to estimate the discriminant functions for use in the accurate classification of the gene profiles, the corresponding sample covariance matrices are (near) singular. Even if one tries to circumvent the nonexistence of the inverses of the sample covariance matrices by using iterative approaches to estimate the discriminant functions, the resulting classifiers will be plagued with high variances leading to poor generalization. Regularized discriminant analysis (RDA) has been one of the methods of choice for addressing the singularity of the need covariance matrices. Essentially, RDA regularized the ill-defined sample covariance matrix by adding to it an isotropic or sometimes anisotropic diagonal matrix whose components are specifically (usually by cross validation) to make the resulting matrix invertible. Many implementations of RDA now exist, with packages in the R software environment that have been successfully applied to a wide variety of HDLSS data, sets including especially many applications to DNA gene expression microarray cancer data.
It turns out that, as the dimensionality of the input space gets ever larger, the data tends to be contaminated with outliers. Now, in the presence of outliers in high dimensional spaces, one of the most commonly used techniques for robustifying discriminant analysis is Minimum Covariance Determinant (MCD) that essentially consists in a computationally intensive for selecting the subset of the data that yields the lowest determinant on the sample covariance matrix. Unfortunately, the MCD approach requires n > 2p, which means that MCD inherently cannot handle HDLSS data for which p > n. Very few authors have done extensive work on the adaptation of MCD to HDLSS settings. In this paper, we present a variety of regularization schemes that make it possible handle both the presence of outliers and the ill-posedness inherent in HDLSS data. Our proposed approach does regularization to deal with high dimensional ill-posedness, and combines it with MCD robustification to circumvent the ill-effect of outliers. Our approach is tested on simulated data with various rates of contamination combines with various scenarios of sample size n and input space dimensionality p. It turns out that the MCD portion of the whole scheme computationally slows down substantially as p gets larger and quickly and unsurprisingly becomes virtually impractical for large values of p, most probably because of the $O(n^3)$ complexity of the determinant calculation.

Keywords: Minimum Covariance Determinant, Regularization, Robust, Discriminant Analysis

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Highlights

- As p gets larger, MCD gets increasingly bogged down computationally because of the $O(n^3)$ complexity of the determinant calculation
- Less computational expensive algorithms for determinant calculations crucial to making MCD practical for large p small n data with outliers
- Alternative methods needed for values of p greater than a few hundred

Joint Distribution of New Sample Rank of Bivariate Order Statistics

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In this study, we consider a bivariate random sample $(X_1,Y_1),(X_2,Y_2),...,(X_n,Y_n)$ with absolutely continuous distribution function (cdf) $F(x,y)$, which can be referred to as a training sample. Let $X_{1:n} \le X_{2:n} \le ... \le X_{n:n}$ and $Y_{1:n} \le Y_{2:n} \le ... \le Y_{n:n}$ be the corresponding marginal order statistics and let $X_{r:n}$ and $Y_{s:n}$ be the r^{th} and s^{th} order statistics of X-sample and Y-sample, respectively. Furthermore, we consider another sample (X_{n+1},Y_{n+1}), $(X_{n+2},Y_{n+2}),...,(X_{n+m},Y_{n+m})$ from absolutely continuous cdf $G(x,y)$, which is independent from (X_k,Y_k), $k=1,2,...,n$ and can be interpreted as a control sample. We are interested in the joint distribution of the rank of $X_{r:n}$ and $Y_{s:n}$ among the new sample $(X_{n+1},Y_{n+1}),(X_{n+2},Y_{n+2}),...,(X_{n+m},Y_{n+m})$; for $1 \le r,s \le n$; $m \ge 1$. However, the moments of the marginal distributions and correlation coefficient between new sample ranks are provided. Some numerical results are illustrated. The joint distribution of the new sample rank of bivariate order statistics can be applied in analyzing and comparing two test results taken by an individual as well as predicting of environmental events such as floods and storms.

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Key words: *Bivariate Order Statistis, Random Threshold, Rank.*

Impact Of Inflation On Economic Growth; Case Study Of Nigeria (1970-2013)

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This study investigates the impact of inflation on economic growth of Nigeria. Typically, this linkage has been approached using simple correlations and deterministic models. In this analysis, a tri-variate vector autoregressive (VAR) model is developed. Incorporating unemployment rate into our framework for analysis, we capture the policy trade-off between managing inflation to a low rate and targeting low unemployment rate as described by the Phillips curve hypothesis. After checking the series for unit root, we identified that all the variables are differenced stationary, and have one cointegrating vector that describes the long run interaction of these variables. Further, we estimate the vector error correction and find out that there is convergence among the variables in the long run and that takes about 5 consecutive years. The dynamics of the relationship within the system shows that a one period temporary shock to consumer general price level has a slow positive short run contemporaneous impact on the real GDP of Nigeria, but this dissipates into a negative and permanent shock after 5-6 years.

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Key Words: *Inflation, growth, unemployment.*

Giyim Mağazası Tasarım İlkeleri ve Yeni Trendler

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Mekân tasarımında uygulanacak temel ilkeler, alışveriş mekânları özelinde giyim mağazası tasarımlarında birçok ilave kriterle var olmaktadır. Genel geçer tasarım ölçütleri üzerine mağaza tasarımı için eklenen ilkeler, mekânın ticari özellikleri nedeniyle pazarlama kriterleriyle birlikte düşünülerek ideal şekle getirilirken, daha başka birçok disiplinle de işbirliği yapılarak sonuca ulaşılmaktadır.

Giyim mağazası tasarımında öncelikle belirlenmiş ve/veya belirlenecek hedef kitlenin özellikleri ve ihtiyaçları önem kazanmaktadır. Müşteri profili kriteri bu ilk adımda doğru uygulanmalı; bu profile hitap edecek unsurlar tasarıma dâhil edilmelidir.

Mekânsal ihtiyaç programı oluşturulurken, tasarlanacak mekânın satılacak ürün özelliklerine göre tespit edilmesi, bu ürünlerin müşteriye hitap edecek ve dikkat çekecek şekilde yerleştirmesine zemin hazırlayacak şekilde tasarlanması önem taşımaktadır. Tüm bunlar tasarıma dâhil edilirken, markanın logosu ve kurumsal kimlik özelliklerinin de dikkate alınması ve bu kimliğe ters düşmeyecek, hatta kimlik özelliklerini pekiştirecek bir anlayış içinde olmak gerekmektedir. Kurumsal kimlik ve logonun vitrin tasarımında da kendini hissettirmesi ve markanın bütünlüğüne katkı sağlaması, doğru bir tasarımın gereklerindendir.

Mekân tasarımının özgünlüğü, markaya uygunluğu ve prestiji üzerinde durulurken, mağaza mekânının, satışı yapılan ürünleri gölgeleyecek şekilde olmamasına özen gösterilmeli; tasarımın, ürünün önüne geçmesi önlenmelidir. Benzer şekilde aydınlatma sisteminin mekâna dikkat çekici değil, ürünlerin kolay algılanmasına yönelik şekilde oluşturulmasına dikkat edilmelidir.

Mekânda kullanılacak renklerin, satışı yapılan ürünlere ve onların özelliklerine göre tespit edilmesi, sergileme sistemlerinde esnek çözümlere gidilmesi, teşhir elemanlarının hem esnek tasarıma imkân sağlamak hem de istenmeyen devre dışı kalma durumlarında çözüm üretmek amacıyla yedekli üretilmesi, depolama sistemi için ürün özellikleri gözetilerek uygun ortamlar yaratılması diğer dikkat çekici hususlardır.

Müşteri ilgisinin canlı tutulmasına yönelik olarak farklı sergileme tekniklerinin kullanılması, kabin bölgesinin doğru tasarlanması, tavan ve zemin renkleri ve malzemelerinin seçiminde markaya ve mekâna uygunluk ilkelerine dikkat edilmesi, kasa bankosunun konumunun mağaza sirkülasyonu ve müşteri izlenimlerine yönelik olarak düzenlenmesi de tasarıma katılması önem arz eden faktörlerdir.

Geleneksel pazarlama yöntemlerinin geçerliliğini yitirmeye başladığı günümüzde müşteri ruhuna ve duyularına hitap eden dolaylı pazarlama tekniklerinin kullanımı da yeni eğilimler olarak önem kazanmaya başlamıştır. Bu tekniklerin kullanımı için mekânsal ögelerin dikkate alınarak tasarım çerçevesinde değerlendirilmesi büyük önem taşımaktadır.

Tasarıma etki eden tüm faktörlerin ustaca değerlendirilerek, bütçeye uygun bir planlama ile hayata geçirilmesi, fonksiyona uygun mekân yaratılırken, üzerine pazarlama tekniklerinin koyulması ve estetik değerlere yer verilmesi, hem tasarımcı, hem de işveren için doğru hedefe ulaşılması anlamı taşımaktadır.

Vitrin Aydınlatmalarında Tercih Edilen Aydınlatma Elemanının Fark Edilebilirliğe Katkısı

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Mağaza vitrinlerinin tasarımında amaç ilgi çekici bir görünüm ortaya koyarak, fark edilebilirliği, çekiciliği artırmaktır. Birbirine benzer mağazaların bir arada olduğu alışveriş merkezlerinde ve caddelerde diğer mağazalar arasından sıyrılarak, farklılık yaratmak ve insanların istemli veya istemsiz vitrine bakmasını sağlamak vitrin tasarımının en önemli amacıdır. Akşam ve gecelerde ise vitrinin amacına ulaşmasında en önemli görev aydınlatma elemanına düşmektedir. Burada en önemli husus doğru aydınlatma elemanının seçimidir. Aydınlatma elemanı görsel çekicilik sağlarken, aynı zamanda ultraviyole ve kızılötesi ışın gibi bozucu etkilere sahip olmaması gerekmektedir. Ve ayrıca birçok aydınlatma elemanı çevresini ve ürünleri görsel olarak farklılaştırma etkisine sahiptir, bununda farkında olarak bilinçli tercihler yapılmalıdır. Bu çalışmada Afyonkarahisar şehir merkezinde yer alan iki farklı çarşı merkezindeki mağaza yoğunluğunun bulunduğu sokak/caddelerde akşam saatlerinde alışverişe veya gezmeye çıkmış insanlara uygulama yapılmıştır. Anket için iki soru yöneltilmiş ve ilk soru olarak 'sokağa/caddeye bakıldığında uzaktan hangi vitrin veya vitrinlerin dikkat çektiği' ve ikinci soru olarak 'dikkatinizi çekmiş vitrinin önünden geçerken (durmasanız bile) o vitrine bakmanıza/incelemenize katkı oranı nedir' sorusu yöneltilmiştir. Cevap olarak büyük çoğunluk parlak renkli lamba ile aydınlatılmış vitrinleri daha dikkat çekici bulurken, yine önemli bir çoğunluk farklı görsel etkiye sahip elemanlar ile aydınlatılmış vitrinlerin çekici olduğunu, ikinci soruya cevaben de büyük çoğunluk aydınlatmasından etkilendikleri vitrinin önünden geçerken en azından göz ucuyla vitrine baktıklarını ifade etmişlerdir. Sonuç olarak parlak renkli ışıklı aydınlatma elemanları ile ve farklı görsel etkiye sahip yeni piyasaya sunulmuş aydınlatma elemanları ile aydınlatılmış vitrinlerin insanlara daha dikkat çekici gelmekte olduğu tespit edilmiştir.

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Anahtar Kelimeler: *Mağaza vitrinleri, Vitrin Aydınlatma, Vitrin Aydınlatma Elemanları*

Iç Mekânin Hissedilebilen Örtüsü: Nanomalzemeler

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İçinde bulunduğumuz çağ insanoğlunun tüm yaşamını etkileyecek kadar büyük yeni bir teknolojik devrimin eşiğindedir. Malzeme biliminin de bu devrimsel yeniliklerin eşiğinde teknolojiden etkilenmemesi düşünülemez. Malzeme biliminin teknolojiyle bir arada harmanlandığı konuların başında nanomalzemeler gelmektedir[1]. Bu çalışma nanoteknoloji ve nanoteknolojinin yapı malzemesi alanına etkilerinin incelenmesiyle beraber teknolojik değişimin mekân tasarımındaki uygulama biçimlerini, günümüz ve gelecekteki etkilerinin incelenmesini amaçlamaktadır. Teknolojik devrimin geldiği son noktada nano malzemelerin tasarıma katkısı ve bu teknolojinin mimari mekânı nasıl etkilediği incelenmektedir.

Çalışmada nanoteknolojik malzemelerin özellikleri ve iç mekândaki uygulama alanları incelenmektedir. Bu özellikler; kendini temizleyebilen(lotus etkisi) nano malzemeler, kendini temizleyebilen (fotokataliz etkisi) nano malzemeler, kolay temizlenebilen (etc) nanomalzemeler, havayı temizleyen ve hava kalitesini artıran nano malzemeler, buğulanmaya karşı etkili nano malzemeler, güzel koku kapsülleri nano malzemeler, termal yalıtım vıp etkili (vakumlu yalıtım panelleri) nano malzemeler, termal yalıtım aerogel etkili nano malzemeler, sıcaklık düzenleyici pgm nano malzemeler, ultraviyole ışınlara ve güneşe karşı korunum sağlayan nano malzemeler, yangın korunumu sağlayan nano malzemeler, graffiti önleyici nano malzemeler, yansıtıcı önleyici nano malzemeler, bakteri önleyici nano malzemeler, el ve parmak izi önleyici nano malzemeler, çizilme ve aşınmaya karşı önleyici nano malzemelerdir[1,2]. Bu bağlamda bu çalışma nanoteknoloji ve nanoteknolojinin yapı malzemesi alanına etkilerinin incelenmesiyle beraber iç mekân tasarımındaki uygulama biçimlerini incelenmesini amaçlamaktadır. Çalışmanın sonucunda elde edilen bilgiler doğrultusunda teknolojinin mekân tasarımına yansımasında oluşan etkilerin önemi vurgulanmaktadır. Bununla birlikte, nanomalzemelerin kullanımı tasarımcıya teknolojik farkındalık sağlamaktadır. Nanoteknolojinin mekân tasarımına kattığı değer ve yenilik, gelecek nesillere o mekânı uygulandığı günkü gibi bırakmak mekân tasarımcısı açısından en önemli miras sayılabilir.

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Anahtar Kelimeler: *1.Nanoteknoloji, 2.Teknoloji, 3.İç Mekân, 4.Tasarım, 5.Kullanışlılık, 6.Yenilik, 7.Malzeme.*

Kültürün Mekansal Yansimalari Ve Mimari

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Mekan, insanın gereksinimlerine ve beklentilerine yanıt verdiği gibi kurgusu ile de insanı etkileyerek davranışlarının belirlenmesinde etken rol oynamakta. İnsanların bir mimari mekan içinde kendilerini nasıl hissettikleri ve yaşamlarında bunun ne ifade ettiği söz konusu olduğunda ise, o yapıtın algılanma kriterleri önem taşır. İnsan yapıyı bir bütün olarak algılar. Bu bütün, o yapıyı oluşturan öğelerin meydana getirdiği 'Mimari Bütün' dür. Çalışmada, mimarlığın 'mekanla' olan ilişkisi, farklı mekanizmaların ve kültürün etkileşimi sonucunda gelişen algoritma incelenecektir.

Mekan tasarımından beklenilen, mekanların yalnızca fonksiyonel olarak, uygun ölçülerde ve doğru ilişkilerde düzenlenmesi değil; algısal tepkilerin ve algıda seçiciliğin etken olduğu, biçim ve içeriğin etkileşimi sonucu ortaya çıkan anlamla da ilgilidir. Tarih boyunca sosyal çevre ve politik yapıdaki değişimler, bireyin eğilimlerini de değiştirmiştir. Bu değişimin "Modern Dönem"de ise, hızlı ve köklü bir şekilde değiştiği yadsınamaz. Bu dönemde sanatın, sosyal yapıyı "yansıtmanın" yanı sıra, bu yapıya tepki ve eleştiri getirme potansiyeli de keşfedilmiştir. Çalışma, bir toplumda zamana bağlı değişimlerin, bu değişimlerin çıkış şekillerini, sebeplerini ve mimariye yansımasını da incelemektir. Kültürlerarası temas yoluyla ortaya çıkan kültür değişmeleri; ve bunun mimariye yansımaları da konuya dahildir. Ayrıca bu çalışmada, kültür ve küreselleşmeye kavramsal yaklaşılacaktır. Kültür ve küreselleşme kavramları etimolojik açıdan incelenecek; en geniş tanımlardan alıp, en dar anlamına ve mimarideki karşılıklarına bakarak inceleme yapılacaktır.

Anahtar Sözcükler: *Küreselleşme, Kültür, Mekan Tasarımı, Mimari Bütün, Algoritma*

Conservation and High-Tech Go Hand in Hand!
-Now Modernism itself is in need of protection-

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For decades Modernism has been invoked in aid of preserving historical buildings, and many buildings have been successfully conserved. Now it is time that the icons of Modernism themselves are in need of conservation. Modern architecture, with its socio-cultural background, is a relic of its era. It represented an utopia, or the dawn of a new age, in which one was dreaming of a better world. The historical city centre of Vienna is already to be found on UNESCO's World Heritage list. The Federal Heritage Office in Vienna also supports culturally and ecologically sustainable management of modern architecture, and sounds out the limits of technological possibilities to secure the artistic heritage of Modernism. Latest research methods and the use of recent findings from the field of Restoration Science help both in the preservation and restoration of the masterpieces of Modern art and also in the revitalization of Modern architecture in Vienna, which characterizes the cityscape.

1. The parallelism of the ideologies of conservation and Modernism

At first glance the combination of the preservation of historical buildings and modern architecture seems to be contradictory. This combination is actually based on the principles of harmony of opposites in architecture. The devotees of Modernism demand a strong reference to the present alongside the rejection of historical forms. For them, it is not worth the effort to realize reconstructions instead of creating new buildings. The "readability" of a historic monument depends in no way on the additions and reproductions that are loyal to the original, but there are certainly ways to plausibly enhance historical substance or even accentuate it by contrast using contemporary means– for example, with modern architecture.[1] It is important to "preserve what is available to the greatest extent possible, to recall what has past, but to manage the present with the means and powers of our time," said journalist W. Strodthoff.[2]

The idealized target for conservation is to preserve the authentic condition of the monument and to counteract the decay. On the one hand this allows the artistic manifestation to persist in the future and on the other hand it allows for the preservation of cultural heritage for future generations. In accordance with international standards developed by Ruskin, Morriss, Gurlitt, Clemen, Dehio and Riegl and others over 200 years, the task of historic preservation lies in the preservation of historic substance.[3, 4] By no later than 1900, the importance of the authenticity of the original as a document was appreciated, and the transformations which a historical monument undergoes in the course of time were recognised as worth preserving. At that time, this was directed against the widespread tendencies towards the purification of style and the attempt to re-establish the original condition. Such an act, according to Dehio in 1901, is the attempt "[to] turn back the course of history, and almost always on an uncertain

basis" In the event of rivalling monument-related values – particularly concerning artistic quality - historic value was accorded the greatest status, for as Dehio stated in 1905, it represented an "immutable standard of value", while artistic appreciation was subject to fluctuation.[5]

In terms of historical value, the monument is viewed as a document, a testimony to history, and requires its unaltered preservation.[6] On the other hand, in the course of the 20th century the avant-garde of western Modernism established a concept in art, the core of which was the originality of the respective idea. Every reconstruction of a lost monument which is not justified as a conservational necessity, substantive or aesthetic repair, contradicts the essence and empirical value of material heritage. Gebeßler states that for those who first consider the idea, the architectural draft and consequently the building plan as the essence of the historical monument, and not its materialisation as the bearer of the historical, historical monuments can continue to be reconstructed arbitrarily often.[7] The question of with what awareness and means the task of repair is to be approached must be discussed. Creating something new in dialogue with what has been destroyed can occur with respect for what exists as well as for the fate which has befallen it; many architects demonstrated this after the war, he adds.

2- High-Tech at the service of protecting Modernism

The Federal Heritage Office of Vienna supports the culturally and ecologically sustainable management of modern architecture and explores the limits of technology to secure the artistic heritage of modernism. The latest research methods and the use of recent findings from the field of Restoration Science help in both the preservation and restoration of the masterpieces of Modern art as well as in the revitalization of the Modern architecture which determines the cityscape of Vienna. The main goal for the conservation efforts is to preserve the buildings known as symbols of cultural development of the post-war period in their specific and characteristic manifestations.

During preservation work specific properties of the building being conserved have to be considered. Building physics, safety technology and barrier freedom, whose standards have increased significantly since the period in which the buildings were constructed, often have to be considered in order to fulfil the requirements. The scientific analyses of the monument's condition are to be executed with the latest scientific methods. Thus in the investigation of the coating of the metal parts, for example, light and scanning electron microscopy, and infrared spectroscopy, as well as micro-chemical tests are used.

The three recently restored examples in Vienna, the revitalization of the former Hoffmann-La Roche-building as Hotel Daniel, the technological modernization and re-opening of the '21er Haus', the subsequent use of the restaurant at the Iris lake in the Danube Park as the Korean Cultural Centre are successful examples of the interaction of contemporary technology and Modernism in the preservation of Modern architecture.

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Keywords: *Preservation of Modernism in Vienna; High-Tech; Restoration; Hotel Daniel (former Hoffmann-La Roche-Building); Korean Culture House (former Lakeside Restaurant); 21er Haus (former 20er Haus)*

The Use Of Experiential Learning In Museums

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Museums are places where historical, scientific or artistic valuable objects are gathered in order to conversation, acquisition, educational interpretation and study. Rare and valuable objects are presented to public view in these spaces. Museums have a strong atmospheric impact on visitors with the presence of unique objects. This strong atmospheric impact can be used for informal and nonformal educational purposes.

Impressive atmospheric impact of museums is maintained by the presence of the valuable objects representing tangible and intangible heritage of humanity and its environment. Exhibition of such important objects have informative value. Museums combine unique objects that have informative value, which can be used through educational process. In order to use museums as learning places it is needed to express the theme of the museum in a strong manner. It is has been proven that experience is the most effective way of learning. Therefore experiential approach to museum design would serve to visitors a place where learning can be done effectively.

In terms of designing an experiential space, experiential marketing method can be a source of inspiration. According to experiential marketing method, experiences are designed to give holistic idea to visitors. Since the experiences are the strongest way of learning and also having joy from life the use of experiential spaces in museums seems to create a joyful and beneficial model to be used. As stated in experiential marketing method, experience design is an important issue. The experience that will be presented to visitors must be compatible with the items that are presented in that particular space. Experiences must have sensual dimensions. Appealing the senses during learning process is to ensure ease of learning. Basically in museums only two sensations are appealed in terms of design.

In experiential marketing method there are five different types of experiences, or strategic experiential modules to attract visitors in the particular space. *These sensory experiences (SENSE); affective experiences (FEEL); creative cognitive experiences (THINK): physical experiences, behaviors and lifestyles (ACT): and social-identity experiences that result from relating to a reference group or culture (RELATE)* [1]. Designing experiential spaces within museums appeals visitors. This experiential approach standing as a strong way of learning, which occurs in joy.

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Key Words: *Museum design, Experiential learning**,** Museum Marketing, Experiential marketing*

The Evaluation Of Cultural Codes In Interior Design Through Television Series And Changing Perception Of Housing In Turkey

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The purpose of this study is to research the effects of the spaces in the television series on the housing we live in. For this purpose, spatial relationships and furnitures in interior design of selected TV series have been analyzed and later, interior designs which are used in these TV series examined in the framework of general consumption habits.

Culture is a concept which society generates during the development process. It is a combination of traditions, norms and ethics we use to create personal and social living conditions, understanding, organizing, configuring and passing it to the next generations. Culture and social structure includes all different meaning that compose belief, language, idea and art. These different meanings are called culture codes. The culture code is the unconscious meaning we apply to any given thing — a car, a type of food, a relationship, even a country — via the culture in which we are raised [1]. Culture codes are such sources that define societies and redirects them. Physical structure of the space and user habits are the most important element for the interior designer. The assets that compose the space are formed by principles such as size, ratio and balance. Space codes are formed by the elements that is shaped by limiting, structuring, directing and focusing cultural coeds. Thus it is very important for a designer to understand how the culture codes work in the society.

The culture shapes living spaces, lifestyles, ideas, relationships and perception of space. All these processes affect each other, takes place one of the strengths of cultural exchange through communication and are experienced through popular culture created in this way. Communication and use of technology, plays an important role in cultural exchange and interaction. One of the most effective media is television that reach visualizing cultural elements to large masses. Television's influence on the audience has increased with its becoming an integral part of everyday life. Television is a technological possibility that improve people's everyday life experiences and also it change the quantitative and qualitative patterns of this experiences [2].

In the historical process, spatial design elements have been reshaped with the use of television in the house. Depending on the television; changing usage patterns of house, has changed the use of space and design. Besides these physical effects, psychological effects of television also play role in the configuration of space. Diversification of television programs, especially television series with high audience in the general population, allows to meet audiences that

have different socio-cultural and socio-economic structures. As a result of this, the spaces in the television series which is easy accessible and continuous, has become a role model for the daily life of audience who identify him/herself with the characters in the TV series. The suitability of spaces which are taken as a model by the audience with the audience's lifestyle and usage patterns in reality is open to discussion.

In this study, effects of the spaces used in the television series on the living spaces are examined with the examples from everyday life and are evaluated the effects on housing design.

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Key Words: *Interior Design, furniture design, Spatial Perception and Culture Codes, Culture, Communication*

Simultaneous Determination of Potassium Sorbate, Sodium Benzoate, Quinoline Yellow and Sunset Yellow in Lemonades and Lemon Sauces by HPLC, Using Experimental Design

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In this study, development and validation of a HPLC method, in which chromatographic conditions were optimized using experimental design was described for simultaneous determination of potassium sorbate, sodium benzoate, quinoline yellow and sunset yellow in lemonades and lemon sauces. A Box-Behnken design was used three experimental variables at three levels: pH of mobile phase, 6.0-7.0; flow rate, 0.8-1.2 mL min^{-1} and the ratio of mobile phase composed of a 0.025 M sodium acetate/acetic acid buffer, 80-90%. Resolution was choosed as a response. The optimized method was validated for linearity, the limits of detection and quantification, accuracy, precision, and stability. All the validation parameters were within the acceptance range. The applicability of the developed method to the determination of these food additives in commercial lemonade and lemon sauce samples was demonstrated.

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Keywords: Potassium sorbate, sodium benzoate, quinoline yellow, sunset yellow, HPLC, experimental design, validation, lemonade, lemon sauce.

Synthesis Of A Novel Phthalocyanine With Peripherally Coordinated Ru(Ii) Complex

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Phthalocyanines (Pcs) are considered as synthetic porphyrin analogues and emerge as attractive molecular building blocks due to a variety of characteristic properties. Pcs exhibit architectural flexibility which is well exemplified by a large number of metallic complexes and importantly, a large variety of substituents can be attached to the macrocyclic core [1].
Phthalocyanines and ruthenium(II) complexes are well known for their photophysical properties. The combination of both subunits in one compound leads to new materials which are very interesting candidates for the study of energy and/or electron transfer processes [2]. The main aim of the present work is the synthesis of asymmetric Pcs with peripheral metal-binding site and the introduction of ruthenium complex to their periphery in order to obtain novel materials which are expected to have interesting photophysical properties.
Firstly, a novel unsymmetrically substituted zinc (II) phthalocyanine with three hexylthio and a 4-nitrophenoxy group was synthesized by statistical condensation of 4-(4-nitrophenoxy)phthalonitrile and 4-(hexylthio)phthalonitrile in the presence of zinc chloride. After reducing the nitro functionality to amino group on the periphery, a novel phthalocyanine, having an 4-(methylidene-imino)phenoxy bridge, was obtained by the reaction of the phthalocyanine with 1,10-phenanthroline-4-carbaldehyde. Finally, a new multicomponent ZnPc-Ru(bpy)$_2$(phen) system consisting of a zinc-phthalocyanine linked through nonconjugated connections to a ruthenium(II)bis(bipyridine) complex was synthesized using the reaction of the phthalocyanine bearing a 4-substituted-1,10-phenanthroline subunit and [Ru(bpy)$_2$Cl$_2$].2H$_2$O. The new compounds have been characterized by elemental analysis, IR, ^{1}H-NMR, UV-Vis and MALDI-TOF MS spectral data.

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Key Words: *(Phthalocyanine, Zinc, Ruthenium Coordinated, Asymmetric)*

Effect Of The Amino Acid Additives On The Electrochemical Performance Of The Positive Electrolyte For Vanadium Redox Batteries

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Energy explained the capacity of work ability of objects and system, is an important need for the human life. The dependence of energy has been increased during the human history and it has come to the highest level in the today's knowledge society. The improving technology and developing new devices allow to increasing the need of energy day to day. The most of needed energy by people obtained by fossil fuels, nowadays. But, these energy sources have some problems about the sustainability and they have negative effects on the environment. The best alternative energy sources to fossil fuels are renewable energy sources such as solar energy, thermal energy, wind energy etc.. Consuming of the energy obtained from different sources is the kind of the energy as electric. For this reason, storage of the electric energy with efficiency and using it again in case of need allow an important study area under the title as the batteries. Lithium based batteries, lead acid batteries and vanadium redox batteries have been using to storage of electric energy as chemical energy. Lead acid batteries have some disadvantages like toxicity for environment, self-discharge, extremely heavy etc.. Although, lithium ion batteries are more useful than lead acid batteries, it has also some disadvantage such as; expensiveness and limited Li sources. Vanadium redox batteries (VRB) is a good alternative for other energy storage system because of the advantages of it like cost, high capacity and system design.

The main aim of this study, improving the new positive (anodic) electrolyte solutions for VRB system which can be used an alternative energy storage system to conventional systems with cheaper price, longer cycle life and higher capacity. In this context, we reported in detail amino acid additives in positive electrolytes for VRB and investigated their effect on the electrochemical performance. The electrochemical characterizations of prepared new electrolyte systems were examined with cyclic voltammetry and electrochemical impedance spectroscopy methods with the parameters such as peak currents, redox capacity, solution resistance and charge transfer resistance.

Keywords: *Vanadium redox battery, positive electrolyte, amino acid additives, cyclic voltammetry, electrochemical impedance spectroscopy, energy storage system*

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A Novel Quartz Crystal Microbalance Sensor Based On The Aldehyde Functionalized Polyetherimide

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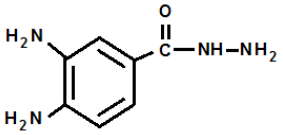
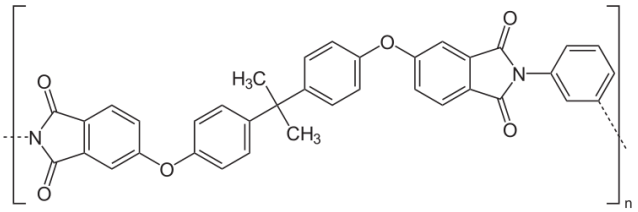
Chemical sensors are very important in industrial processing and environmental monitoring such as automotive, textile, food, medical, pharmaceutical and domestic applications. Various organic, inorganic and hybrid materials of organic/inorganic polymers and metal compounds have been extensively used to measure humidity, toxic and explosive gases, molecules, ions, etc. Polyimide thin films were reported as excellent materials for humidity sensing since they provide high sensitivity, good linearity, low power consumption, good thermal and chemical stability, and highly reversible response [1-3]. On the other hand, polyimides have been modified with amines to enhance some of their properties such as adhesion on substrates, gas permeability and solubility [4].

In this study, we aimed to prepare a mass sensitive sensor for volatile amines which may be used to measure the freshness of some food products. It was proposed that a polyimide polymer could be modified with a suitable amine compound supplying the free terminate amine groups after modification. Then, it could be further modified with glutaraldehyde to get free aldehyde groups on the polymer backbone. Thus, it could be provided that the amine vapors may be detected via aldehyde-amine interaction on the surface of modified ULTEM polymer. For this purpose, ULTEM1000, a polyetherimide, was firstly modified with 3,4-diaminobenzhydrazine. Then, it was reacted with glutaraldehyde. The modified and unmodified polymers were characterized by FTIR, ^{1}H and ^{13}C NMR methods. Quartz crystal electrodes were coated with the polymers and the changes in their resonant frequency were measured under exposure of humid, various amine and solvent vapors. The sensor responses of ULTEM and modified ULTEM were compared and it was found that the modified ULTEM was more sensitive to more polar solvent vapors despite their lower vapor concentrations. Good linear calibration plots (R^2>0.99) were obtained for the relative humidity, amines and ammonia vapors.



3,4-diaminobenzhydrazine



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Reactions Of 2,2,6-Trimethyl-1,3-Dioxine-4-One With The Aldimines Prepared From Thiophene-2-Carbaldehyde

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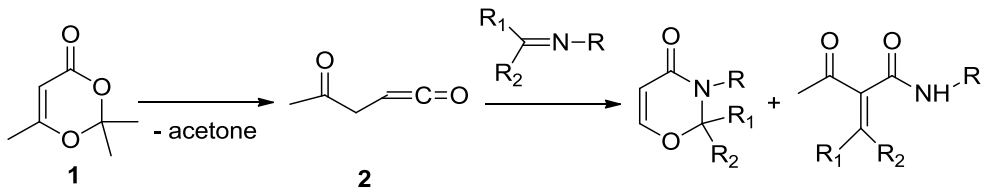
Alkylidenacetoacetamides are an interesting class of organic compounds that have found wide application in organic synthesis. Their importance as intermediates in a great number of synthetic transformations, mostly cyclization reactions [1].

On the other hand, 1,3-oxazin-4-ones are useful precursors and building blocks for the synthesis of poly-functionalized nitrogen containing heterocyclic compounds [2]. Due to biological activities of these kind of compounds and in continuation our interest in acetylketene reactions with heteroaryl substituted imines [3], we describe herein the synthesis a new class compounds derived from 2,2,6-trimethyl-1,3-dioxine-4-one (**1**) with Schiff bases which were prepared from thiophene-2-carbaldehyde with aromatic amines in the presence of a base in Schlenk system.



We gratefully acknowledge financial support of this work by the Scientific and Technological Research Council of Turkey (TUBITAK, project no. 112T880).

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Key Words: *(Acetylketene, Schiff bases, Biological active compounds)*

Experimental Optimization Of Process Parameters On Resistance Spot Welding Shear Strength Based On Taguchi Method

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Abstract

Text Resistance spot welding is commonly used in the automotive industry. Because it has low cost, high speed and suitability for automation. Thus, it is an attractive choice for auto-body assemblies such as automobiles, truck cabins and rail vehicles. Galvanized steel sheets are widely used in automobile bodies to have good weld ability and corrosion resistance. In this study, the effects of weld parameters on tensile-shear strength of welding joint in electrical resistance spot welding of galvanized DP 600 steel sheets were investigated. Taguchi design method has been employed to examine the effects of four parameters of welding current, electrode pressure, welding time and clamping time by using the L9(43) orthogonal array. Results showed that the most effective parameters on tensile shear strength were found as welding current and welding time, whereas electrode pressure and clamping time were less effective factors. Max. 460 MPa strength was obtained through proposed optimum conditions by Taguchi technique.

Keywords: resistance spot welding, tensile shears strength, Taguchi method

Development of A High Performance Liquid Chromatography Method for Simultaneous Determination of Ephedrine, Guaiphenesin and Additives in syprus Samples Using an Experimental Design

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In the present work, a rapid and sensitive HPLC method was developed for the analysis of ephedrine HCl, guaiphenesin and synthetic additives, including sweeteners, preservatives and dye in syrup samples. The optimization process was carried out using experimental design. Three variables pH, flow rate and solvent ratio of mobile phase were regarded as factors in the optimisation. The resolution was used as analytical response. Using the optimized experimental conditions, the separation is accomplished in a short analysis time with a good resolution for all active and additive components peaks of interest. The optimized method was successfully applied to the simultaneous determination of ephedrine HCl, guaiphenesin and additives in syrup samples.

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Keywords: Ephedrine HCl, guaiphenesin, HPLC, food additives, experimental design.

Morphology and Characterization of Polymer Dispersed Liquid Crystal by Solvent-Induced Phase Separation

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Polymer dispersed liquid crystal (PDLCs) composite films acquired great importance because these films are used in electro-optical devices such as light shutters, high resolution displays, projection light [1]. They show very challenging optical properties with low transmission values in off state and high transmission values in on state [2]. PDLC composite films are generally prepared by phase separation method, polymerization-induced phase separation (PIPS), solvent evaporation-induced phase separation (SISP), and thermally-induced phase separation method (TIPS).

In this study, firstly a new chiral calamitic liquid crystalline compound 5-((S)-3,7-dimethyloctyloxy)-2-[[[4-(octyloxy)phenyl]imino]methyl]phenol (DOPIMP) has been synthesized and characterized by the using spectroscopic methods (1H-NMR and 13C-NMR). The polymer dispersed liquid crystal composite films were prepared from poly(methyl methacrylate) and liquid crystal DOPIMP which exhibits enantiotropic SmC* phase in the weight ratio 20:80 (polymer:LC) by SIPS method. The mesomorphic behaviour of DOPIMP has been investigated by differential scanning calorimetry (DSC) and optical polarizing microscopy (PM).

Acknowledgement:

This research has been supported by Scientific Research Project Coordination Center of Yildiz Technical University, Turkey (2015-01-02-DOP01)

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Key Words: Polymer dispersed liquid crystals, poly(methyl methacrylate),liquid crystal

Surface Characterization of Polystyrene-*b*-poly (acrylic acid) by Inverse Gas Chromatography at Infinite Dilution

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Inverse gas chromatography (IGC) is a high potential technique in determination of surface properties of different solids such as polymer, glass, ceramic, hybrid, etc., reliably [1-3].
In this study, the surface characterization of polystyrene-*b*-poly (acrylic acid) was determined by using IGC. The net retention volumes, V_N of the *n*-hexane, *n*-heptane, *n*-octane, *n*-nonane, *n*-decane and acetone, dichloromethane, trichloromethane, ethyl acetate and tetrahydrofuran on the polystyrene-*b*-poly (acrylic acid) were obtained at temperatures in ^{0}C between 30 and 70 at infinite dilution of the solvents. The dispersive surface energy of the polymer, γ_S^D can be obtained from the plot of logarithm of the retention volume of a series of alkane probe molecules as $RT\ell nV_N$ versus the product of liquid tension and molecular area as $\alpha\left(\gamma_L^D\right)^{1/2}$ [3]. The specific free energy of adsorption (ΔG_{sp}) and the specific enthalpy of adsorption (ΔH_{sp}) of the polar probes on the polymer surface were determined. The values of the ΔH_{sp} were correlated with both the donor, DN and the modified acceptor numbers, AN^* of the probes to quantify the acidity of the polymer surface. The constants of Lewis acidity, K_A and Lewis basicity, K_D of the polystyrene-*b*-poly (acrylic acid) surface were determined as 0.083 and 0.781, respectively.

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Key Words: *Polystyrene-b-poly (acrylic acid), inverse gas chromatography, surface properties.*

Adsorption and Desorption Characteristics, Isotherm and Kinetics Parameters of XAD-16 Resin for Removing Malachite Green Oxalate

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Dyes are commonly used in different industries such as textile, leather, cosmetics etc. The colours not only introduce an aesthetic problem but also decrease light penetration into the water [1]. In addition, some dyes may be very toxic even at very low concentrations. Adsorption is a widely used process for the removal of dyes due to economical and environmentally friendly reasons. The choice of adsorbent is a very important parameter for adsorption processes. Recently, polymeric materials, especially for their ease of use and re-use in the adsorption process are preferred as adsorbents [2].

In this study, Amberlite XAD-16 resin was used to remove the cationic dye malachite green oxalate (MGO) from aqueous medium. The static adsorption and desorption experiments were performed in a batch system. XAD-16 resin's performance was calculated in terms of adsorption capacity, adsorption and desorption ratio and recovery. Dynamic adsorption and desorption tests were carried out in a special glass column. In addition, we studied how the key operational parameters such as contact time, dye concentration, XAD-16 dosage, pH and temperature could effect the adsorption performance for the removal of MGO.

The experimental data were analyzed by Langmuir and Freundlich isotherms. The process was well described by the Freundlich model. Also the experimental data were fitted to classic kinetic models: the pseudo first order model and the pseudo second order model. The kinetics of the adsorption reaction was best described by the pseudo-first order kinetic equation. Using the dynamic adsorption experiment, the XAD-16 resin was reused several times and it has been observed that even at 10 cycles 95% of MGO could be adsorbed. Which indicates that XAD-16 has a great potential for industrial applications.

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Key Words: *Adsorption, Adsorption isotherms, Adsorption kinetics, XAD-16, Malachite green oxalate*

Asymmetric Organocatalytic Synthesis of β- Hydroxycarbonyl Compounds

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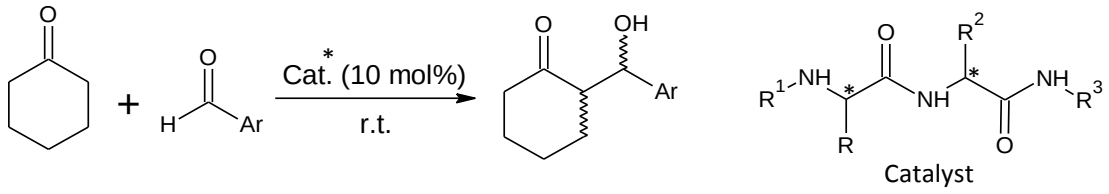
Asymmetric synthesis of chiral compounds have great importance in organic synthesis. The synthesis of optically pure compounds is one of the important areas of the synthetic chemistry for the production of pharmaceuticals, agricultural chemicals and functionalized materials, because of the necessity for these compounds in biological systems. Asymmetric catalytic reactions which include enzymes, metal catalysts and organocatalysts are considered as effective tools for the synthesis of enantiomerically pure compounds.

Optically pure β-hydroxycarbonyl compounds are versatile precursors for the synthesis of pharmaceutically active compounds and related materials, and natural products. Asymmetric direct aldol reaction has been investigated intensively as one of the powerful methods for the formation of new carbon-carbon bonds. This reaction is one of the important reactions for the production of β-hydroxycarbonyl compounds with two new stereogenic center at alpha and beta positions of carbonyl groups. So, the researches have been directed to develop new catalysts and methods to synthesize optically pure β-hydroxycarbonyl compounds, and important developments have been observed recently [1-3].

In this study, the aim was to design new enamine organocatalysts for the asymmetric synthesis of β-hydroxycarbonyl compounds. By this aim, several new organocatalysts with dipeptide structure derived from different amino acids have been synthesized and characterized. The catalytic activities of these catalysts on the asymmetric reactions of cyclohexanone with various aldehydes have been investigated. The reactions have been accomplished under mild conditions with high yields and good diastereo- and enantioselectivities.



This research is financially supported by Yildiz Technical University Research Foundation (Project Number: 2013-01-02-KAP02)

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Key Words: β-Hydroxycarbonyl compounds, asymmetric synthesis, organocatalyst

The Synthesis of Proline-Based Asymmetric Organocatalysts and Their Applications

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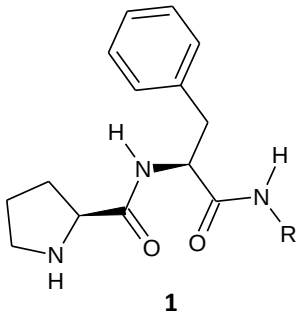
Metal-free organocatalysis have been recently developed for various enantioselective reactions. Organocatalysts have several advantages over conventional metal catalysts, such as nontoxicity, stability, and easy manipulation [1]. Among the various enantiomerically pure small organic molecules, amino acids and peptides are extremely interesting asymmetric organocatalysts demonstrating useful levels of enantioselectivity for a wide range of transformations. The natural amino acid *L*-proline has shown excellent catalytic activity in catalysing a wide variety of reactions [2]. Proline has some disadvantages, although, high enantioselectivity is observed in the reactions in which it is used. The low solubility of proline in most of the organic solvents affects the reactivity, moreover, some unwanted side product formations are observed, and the selectivity is low with planar aromatic aldehydes. Proline derivatives are synthesized to overcome these disadvantages. The researches on the asymmetric aldol reactions have been focused on the design of new catalysts with high activity and selectivity and evaluation of their catalytic activity.

In this research, new *L*-proline amide organocatalysts (**1**) derived from *L*-phenylalanine were synthesized and characterized by their spectral data, and their catalytic performance was evaluated in direct aldol reaction of cyclohexanone with several aromatic aldehydes. The catalysts have good catalytic effect in aldol reaction with high yield and good enantioselectivity.



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This research is financially supported by Yildiz Technical University Research Foundation (Project Number: 2013-01-02-KAP02)

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Key Words: *Proline, aldol condensation, asymmetric synthesis, organocatalyst*

Conductive Polymer Doped with MoS_2 Coatings for the Corrosion Protection of Mild Steel

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In recent years, due to environmental and ecological concerns, chromatizing and phosphatizing coatings are undesirables. The discovery of the conducting polymers electrochemically synthesized as polypyrrole (PPy) [1] polythiophene [2] and polyaniline (PANI) [3] bring an alternative process for the protection of oxidizable metals against the corrosion. Most of investigations of these conducting materials are mainly based on the electropolymerization of their monomers on noble metals or inert materials. However, the anodic dissolution of working electrode before attaining the oxidation potential of the monomer constitutes the main problem for the electrodeposition of polymers on oxidizable metals. Therefore, it is necessary to find new electrochemical conditions for slowing down electrode dissolution without preventing electropolymerization. Electropolymerization of pyrrole, aniline and thiophene on iron and steel surfaces has been performed in aqueous medium in the presence of oxalate as supporting electrolyte. The oxalate counter ion slows down the iron dissolution by leading to the formation of a passivation layer on the working electrode surface, and the electropolymerization starts on.

Passivation of mild steel by coating conductive polymers was studied. The corrosion performance of PPy, PANI, PANI doped with MoS_2 and PPy doped with MoS_2 film coated mild steel was evaluated in sulfuric acid medium by Tafel Polarization method. Adherent and homogenous polyaniline and polypyrrole films doped with MoS_2 were electropolymerized onto mild steel in 0, 1 M oxalic acid. The polypyrrole exhibited good corrosion protection properties. The polypyrrole doped with MoS_2 showed more superior corrosion protection properties than the corresponding PPy, PANI and PANI doped with MoS_2. This was attributed to the greater stability of the polypyrrole+MoS_2 layer deposited at mild steel electrode.

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Key Words: *Corrosion Protection; Mild Steel; Conducting Polymers. MoS_2*

Waste Water Treatment of Electrocoagulation Technique Using Different Heavy Metal Solutions

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Waste water is defined as source of household, industrial, agricultural, mines and similar areas. This water should be brought under the limits specified by the law of some parameter values before being discharged into the natural environment (1). At this point, waste water treatment methods are taken an important role. The preferred method must be economical, fast and friendly of against the environment. These aims are caused by electrocoagulation methods in wastewater treatment process is very useful.

In present study, we examined to recovery of different heavy metals from synthetic waste water using electrocoagulation technique with using aluminum electrodes. The effect of different metal types were examined during the experiments. With this aim; different metal solutions of Cd, Zn and Co metals' solutions were used in electrocoagulation cell.

Key words: Electrocoagulation, heavy metal pollution, aluminum electrode

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Synthesis of Anthraquinone Substituted Cobalt Pthalocyanine

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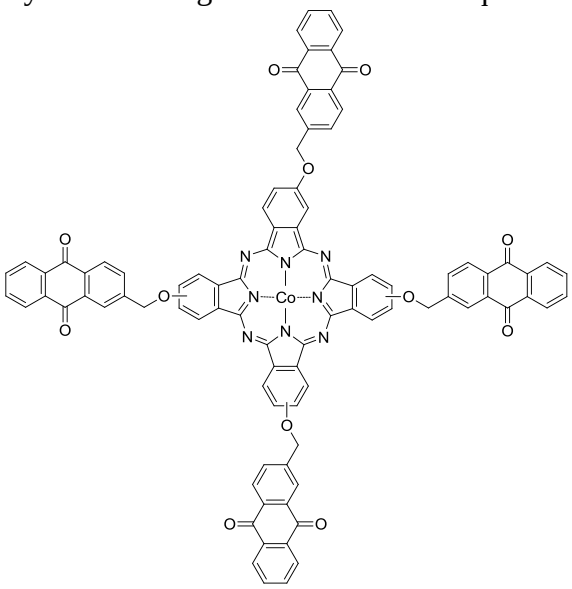
Phthalocyanines (Pcs) have been employed as subunits for the construction of functional materials. The functions of Pcs are almost all based on their electron transfer reactions because of the π electron conjugated ring system. It is necessary to examine the electron transfer behavior of newly synthesized phthalocyanine derivatives in the solution in order to study further applications. The electron transfer properties of phthalocyanines depend on the kind and number of the substituents and are due to the interaction between the phthalocyanine ring and the metal center which is influenced by the conjugated 18 π electrons of the phthalocyanine ring. As a path to functional phthalocyanines, electroactive substituents such as tetrathiafulvalene (TTF), ferrocene (Fc) and anthraquinone (AQ) can be introduced to the peripheral or non-peripheral sites [1]. In this study; we have synthesized peripherally substituted cobalt phthalocyanine bearing electroactive anthraquinone moieties.



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Acknowledgments: This work was supported by TÜBİTAK (Project Number: 113M991).

Key Words: *Anthraquinone, Phthalocyanine*

Three- Component, One-pot Synthesis of Indeno[1,2-*b*]Quinoline-7-one Derivatives Catalyzed by Triflate

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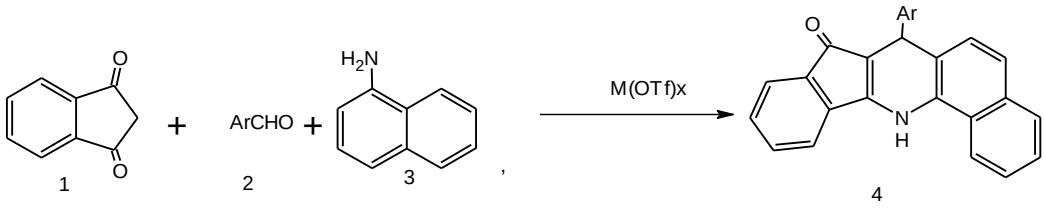
Quinoline and its derivatives are an important class of N-containing heterocycles; they are present in a wide variety of naturally occurring alkaloids with pharmacological properties [1], and they are useful for dyes and intermediates in organic synthesis[2].
Because of the utility of these compounds, numerous synthetic strategies have been developed for the preparation of substituted quinolines [3].

Multicomponent reactions are powerful synthetic tools which have changed the landscape of organic and medicinal chemistry because of environmental concerns by reducing the number of synthetic steps, energy consumption and waste production [4]. Rare earth metal triflates, a new type of Lewis acid were widely applied in organic synthesis due to their low toxicity, high stability, ease of handling, water tolerance and recoverability from water [4].

In this study, indeno[1,2-b]quinoline-7-one compounds have been obtained through a one-pot condensation of various substituted aromatic aldehydes, 1-naphthylamine, and 1,3-indandione in the presence of $M(OTf)_x$ as a green and reusable catalyst.



The structures of the obtained new compounds have been clarified by spectroscopic methods (FTIR, ^{1}H NMR, ^{13}C NMR, EA and MS) after the purification processes. The method is operationally simple and environmentally friendly.

This study was financially supported by YILDIZ TECHNICAL UNIVERSITY with the project number of BAPK 2014-01-02-YL07.

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Controlling the properties of pH-sensitive poly(β-aminoester) hydrogels based on different amines and diacrylates

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Polymeric hydrogels are three-dimensional networks those swell quickly by imbibing a large amount of water or deswell in response to the changes of the external environment. Biodegradable hydrogels have become a rapidly expanding area of research for biomedical applications due to their properties which can mimic those of natural soft tissue. Moreover, they might have great potential in targeted drug delivery system, protein-ligand recognition, on-off switches for modulated drug delivery or artificial organs and immobilization of enzyme [1]. Recently, research has increased in the area of biodegradable hydrogels, which are materials with properties similar to traditional hydrogels but with the added benefit of in vivo degradability, thus avoiding the necessity of surgery to remove previously implanted hydrogels and the concerns over their long term stability. Among these hydrogels poly(β-aminoester)s (PBAE) are one specific class that has gained attention in recent years due to their readily available and inexpensive components, ease of synthesis and no requirement of purification [2].

In this work, PBAE hydrogels were synthesized with two different diacrylate and three different amine compounds. Many methods have been presented that allow control over the resulting hydrogel behavior such as choice of different monomers, the molar ratio of diacrylate to amine, the addition of crosslinking agents and the time allowed for the macromer synthesis reaction. The synthesized macromers were characterized using FTIR, ^{1}H-NMR and GPC. The degradation studies of the different hydrogel systems were carried out through gravimetric analysis. pH titration was carried out to determine the pH-sensitive properties of the synthesized hydrogel. It will be shown with this study that synthesized hydrogels could be viable materials for biomedical applications.

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Key Words: *poly(β-amino ester), biodegradable hydrogels, pH-sensitive*

The Analysis of Reaction Kinetics of Aminotoluene Molecul Through Calculational Methods

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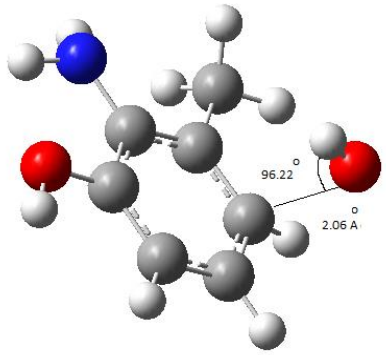
The most probable reaction paths of aminotoluene (o-toluidine) molecule with OH radical have been analyzed. The optimized geometry was calculated via Gauss View 5. Subsequently, the lowest energy status was found out through geometric optimization via Gaussian 09 programme. The geometrical structure analysis and bond lengths were also calculated. This study aims to determine the most probable path for the product distribution of aminotoluene and OH radical interaction in gas phase and aqueous media. Quantum mechanical methods were used to indicate the impact of reaction rate over primary intermediate, hydroxylated intermediate, and finally the impact of water solvent.



With the aim to determine the intermediates occurring at the reaction of aminotoluene degradation, geometric optimization of the reactant and transition status complexes were realized through Density Functional Theory (DFT) method. Based on the Quantum mechanical calculation, all probable rate constants of reaction paths were calculated by using Transition Status Theory (TS). For the determination of the transition status of the reaction, C-O bonds were taken as reference. Activation energy for probable reaction paths of all transition status complexes was calculated, and their most stable state from the thermodynamic perspective for the gas phase and aqueous media. The impact of water solvent was investigated by using COSMO as the solvation model. The COSMO method describes the solvent reaction field by means of apparent polarization charges distributed on the cavity surface, which are determined by imposing that the total electrostatic potential cancels out at the surface. This condition can describe the solvation in polar liquids. Hence, it is the method of choice in this study.

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Key Words: *DFT, OH radical, Aminotoluene*

Yüksek Hızlı Trenlerin Serbest Zemin Yüzeyinde Oluşturduğutitreşimlerin Deneysel ve Analitik Olarak İncelenmesi

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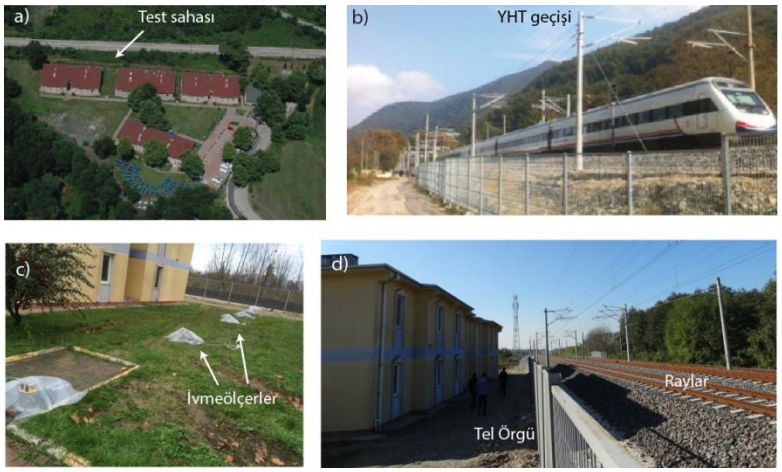
1.Özet

Son zamanlarda küresel dünyada, hareket hızlarını, yolcu ve yük kapasitelerini sürekli arttırarak değiştiren yüksek hızlı tren teknolojisi araştırmalarının önemli bir bölümü yalnızca yolcuların konforunu sağlamak için değil aynı zamanda demiryolu ağının içinden geçtiği yoğun yerleşim bölgelerinde yaşayanların maruz kalabileceği gürültü kirliliğinden ve büyük genlikli titreşimlerden korunması çalışmalarını da kapsamaktadır. Bu kuvvetli yer hareketlerinin yumuşak zemin ortamında tekrarlı bir biçimde yayılarak güzergâha yakın yapılarla etkileşimi hassas aletlerde işlevsel bozukluklara, insanlarda rahatsızlık verici durumlara ve yoğun yerleşim alanlarındaki binalarda hasarlara neden olmaktadır.

Durağan veya hareketli titreşim kaynaklarının ürettiği kuvvetli yüzey dalgalarının sebep olduğu büyük genlikli titreşimlerin davranışını ve yakın çevresindeki etkilerini daha iyi anlayabilmek için son dönemlerde az sayıda da olsa deneysel saha araştırmaları gerçekleştirilmiştir [1, 2]. Bununla birlikte, literatürde dalga kaynaklarının oluşturduğu zararlı titreşimlerin yalıtımında kullanılan dalga bariyerleri ile ilgili birçok analitik, deneysel ve uygulanmış çalışma ortaya koyulmuştur [3, 4].

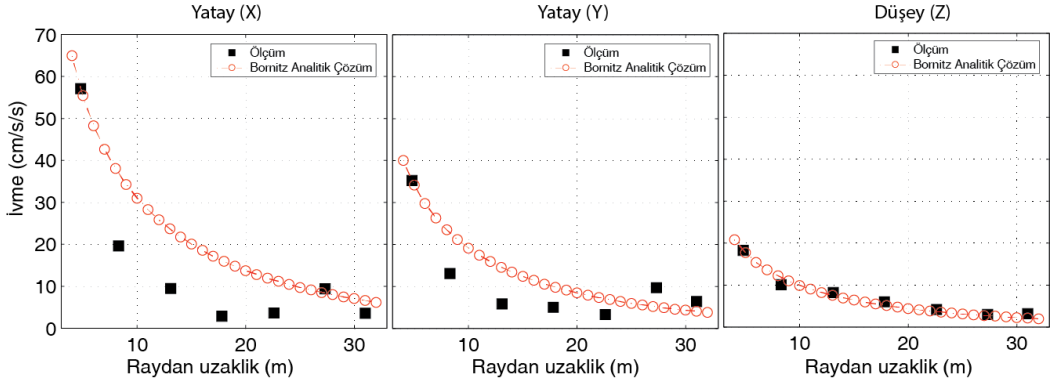
Türkiyede'ki taşıma gücü zayıf, alüvyon zemin ortamlarından (Eskişehir-Adapazarı-İzmit) ve yoğun yerleşim bölgelerinden geçen, inşaatı devam eden ve geçirilmesi planlanan yüksek hızlı modern demiryolu hatları (Kars-Ankara-İstanbul-Edirne hızlı tren projesi) için kapsamlı saha araştırmalarının gerekliliği güncelliğini korumaktadır. Ülkemizde yüksek hızlı tren yolcu taşımacılığının yakın zamanda faaliyete geçmiş olması ve ulaşım sisteminin yeni olması, söz konusu muhtemel çevresel sorunların öngörülememesi, mevcut araştırmaların da sadece demiryolu üstyapı titreşimleri ve gürültü kirliliğinin azaltılmasına odaklanmış olması, bu çalışmayı çevresel titreşimlerin yerinde incelenmesi konusuna yönlendirmiştir.

Bu çalışmanın öncelikli hedefi demiryolu hattına yakın seçilmiş gözlem noktalarında serbest zemin titreşimlerinin kayıt altına alınarak, yüksek hızlı tren trafiğinin ürettiği zemin titreşimlerini değerlendirebilmektir. Bu amaçla, Türkiye'deki İstanbul-Ankara yüksek hızlı demiryolu hattında kullanılan HT 65000 serisi lokomotif seti tekerlek yüklerinin meydana getirdiği titreşim etkileri, İzmit-Arifiye arasında bulunan Kırkpınar bölgesindeki demiryolu hattına yakın olarak seçilmiş gözlem noktalarında ölçülerek değerlendirilmiştir (Şekil 1). Bu deneysel araştırmada, içinde barındırdığı çok düşük gürültü seviyelerine sahip 3 eksenli Capacitive Force Micromachined Sensörler ile kuvvetli yer hareketlerini ölçebilen DAC-3HDG tipi yüksek çözünürlüklü ivmeölçerler kullanılmıştır.



Şekil 1. Ölçüm alınan serbest zemin bölgesine ilişkin detaylar

Demiryolu hattına dik bir biçimde yerleştirilen ivmeölçerler yardımıyla elde edilen serbest zemin yüzeyi titreşimleri değerlendirilmiştir. Demiryolu hattından uzaklaşıldıkça serbest zemin yüzeyinde meydana gelen titreşimler azalır. Bu çalışma sonucunda demiryolu hattına paralel doğrultuda ölçülen ivme genlikleri, güzergaha dik doğrultudaki bileşen genliklerine göre daha fazla olduğu gözlemlenmiştir (Şekil 2). Düşey bileşen genliklerinin, yatay bileşen genliklerine göre mesafeyle daha yavaş bir şekilde azaldığı görülmüştür. Bununla birlikte, Bornitz'in iki nokta arasındaki enerji azalımı ile ilgili olarak sunmuş olduğu analitik formülasyon kullanılarak yapılan karşılaştırmada, analitik yöntemin serbest zemin yüzeyinde oluşan ivme genliklerin azalımında düşey bileşen ile büyük mertebede örtüştüğü, buna karşın yatay bileşenlerde genellikle daha yüksek genlik değerleri verdiği tespit edilmiştir.



Şekil 2. Elde edilen arazi ölçüm sonuçlarının analitik çözümle karşılaştırılması

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Anahtar Kelimeler: *Yüksek hızlı tren, serbest zemin titreşimleri, yerinde zemin titreşim ölçümleri*

Ponza Agregali hafif Harçlara Lif Tipi ve Oranının Etkisi

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Son yıllarda hafif betonun uygulama alanları hızla artmaktadır. Büyük açıklıklı çatı örtüleri ve yüzer dalgakıran bu uygulamalardan bazılarıdır. Ancak normal betona göre oldukça zayıf olan hafif betonun, uygulama alanlarında ki ihtiyaca karşılık verebilmesi için mekanik özelliklerinin iyileştirilmesi gereği ortaya çıkmıştır. Böylece lifli hafif beton konusunda çalışmalar hızlanmıştır. Normal beton çekme dayanımı düşük olmasının yanı sıra oldukça da kırılgan bir elemandır. Buna karşılık lifli beton (iyileştirilmiş beton) içinde kullanılan liflerin sayesinde, beton çekme dayanımı artmakta dolayısı ile daha sünek bir malzeme haline gelmektedir. Gerek hafifliği gerekse yalıtım özelliği dolayısı ile hafif betonlar yapı dış cephe ve iç duvarlarında yaygın olarak kullanılmaktadır. Hafif betonun taşıyıcı eleman olmasını da hedefleyen tasarımlar oluşmuştur. Bu çalışmada; farklı liflerle donatılandırılmış, 0-4 mm aralığında ponza agrega ile lifli çimento harçlarında TS EN 196-1'e uygun olarak eğilme ve basınç dayanım deneyleri yapılmıştır. Plastik ve çelik lif olmak üzere iki tip lif kullanılmıştır Yapılan çalışma sonucu uygun lif tipi ve oranı belirlenerek eğilme dayanımında artış sağlanmıştır.

Key Words: *Poza agrega, hafif beton, plastik lif, çelik lif*

Sismik Yüklere Maruz Yapı- Zemin Ortak Sisteminin Çözüm Sürecinde Temel-Zemin Etkileşim Ortamının Sönümü

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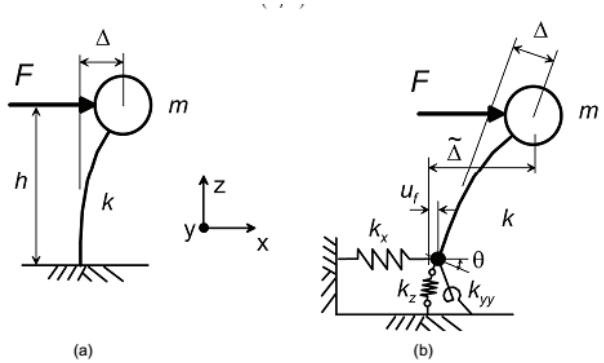
ÖZET

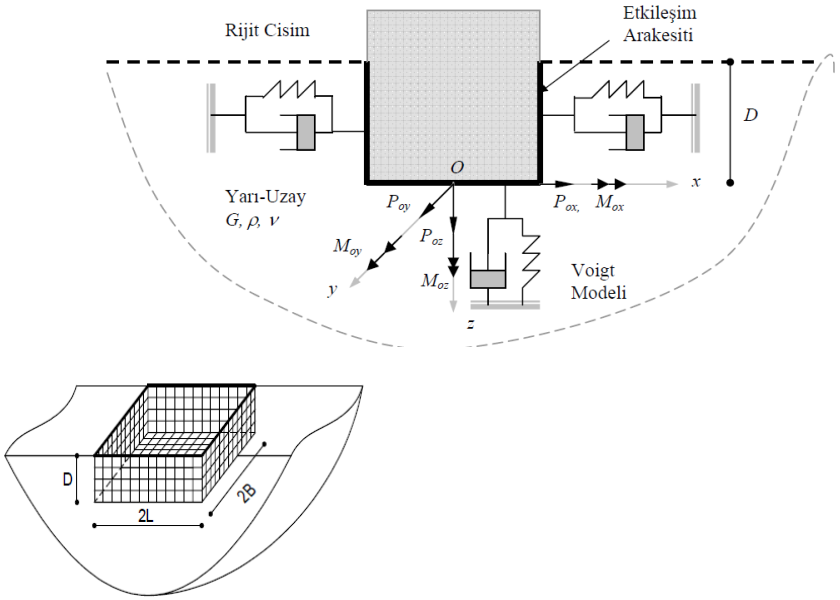
Sismik yüklere karşı dinamik davranışlarının gerçeğe daha yakın olarak izlenmek istenmesi durumundaki nükleer güç santralleri, viyadükler, masif köprü ayakları, barajlar ve çok katlı binalar gibi rijit temelli önemli yapı sistemleri, günümüzde zorunlu olarak depremselliği yüksek bölgelerde özellikle yumuşak zemin koşullarında inşa edilmek zorunda kalabilirler.

Zemin ortamının şekil değiştirebilme özelliğinin çözüm sürecine dahil edilmesi, yapıların titreşim davranışının birbirine bağlı üç ortak sistemin dinamik etkileşimi altında değerlendirilmesini gerektirir. Bunlar üstyapı, yapı temeli ve temelin çevresini saran jeolojik zemin ortamıdır. Yapı-zemin birlikteliğinin sayısal araçlarla idealleştirilmesinde, doğrudan çözüm yöntemi [Çelebi vd., 2012] ve altsistem yaklaşımı [Pais, A. ve Kausel, E., 1988, Mylonakis, G., ve Gazetas, G., 2000] kullanılarak, sismik yüke bağlı olarak zemin şartlarının yapının dinamik tepkisi üzerindeki etkileri yönetici anahtar parametrelere bağlı incelenmektedir. Yapıların sismik performansının analizinde yerel zemin koşullarının etkisinin hesap ilkelerinde doğrudan yeralması hususunda yakın zamanda önemli birçok araştırma raporu tavsiye kararları yayınlamıştır [NIST GC 12-917-21 Report, 2012, Fema 440].

Bu çalışmanın amacı, yapı-zemin ortak sisteminin karşılıklı etkileşimini ve zeminin mekanik özelliklerinin üstyapıların dinamik davranışı üzerindeki etkilerini, altsistem yaklaşımıyla temeli-zemin arakesitinde tanımlanan dinamik rijirlik fonksiyonlarına bağlı değerlendirmek, temel ortamında oluşan ilave sönümün sayısal sonuçlar üzerindeki etkisini tartışmaktır.

Yapı-zemin dinamik etkileşim problemlerinde hangi koşulların daha etkili ve kritik olduğunu göstermek için analizlerde Adapazarı merkezinde farklı noktalarda gerçekleştirilen geoteknik saha deneyleri sonucu elde edilen zemin mekanik özellikleri genelleştirilerek kullanılmıştır. Sayısal araştırmalar için, sonuçların sağlıklı ve doğru yorumlanabilmesi açısından üstyapı olarak farklı ölçeklerde seçilen köprü ayağı örnekleri dikkate alınmıştır. Örnek modelin temel-zemin arakesitinde zemin ortamının şekil değiştirme özelliğini ve sönümünü temsil eden yaylar ve söndürücüler kullanılmıştır (Şekil 1).



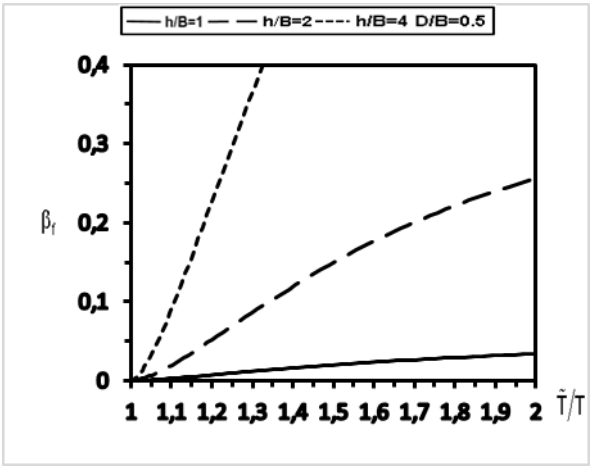


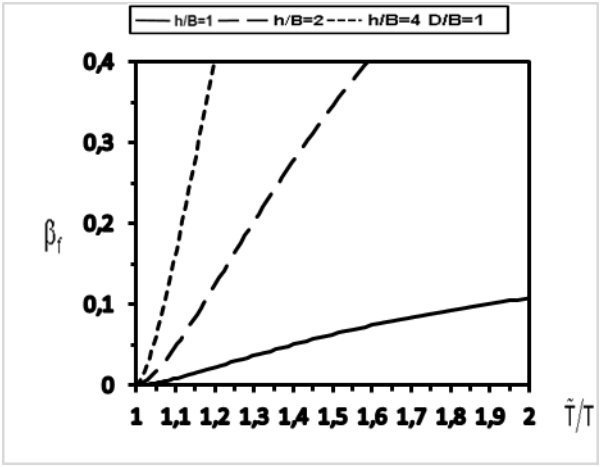
Şekil 1

Yüzeysel ve gömülü temellerin ötelenme ve dönme titreşim modlarında zeminin deformasyonunu ve radyasyon (geometrik) sönümünü temsil eden temel-zemin arakesitinde geliştirilen yaylar ve söndürücülerin etkisinin nasıl doğru tanımlanabileceği konusu ayrıntılı ve parametrik araştırmalara dayalı olarak tartışılmıştır. Sismik etkileşimin dikkate alınması durumunda temel ortamında oluşan sönümüm yapısal sönüme katkısı ve üstyapı-zemin sistem periyodunun değişimi aşağıdaki kontrol parametreleri bağlı incelenmiştir:

- yapı-zemin rijitliği oranı, h/V_sT,
- yapı yüksekliği-temel genişliği oranı , h/B,
- temel genişliği-uzunluğu oranı, B/L,
- yapı kütlesinin zemin kütlesine oranı, m/ρ_sABh,
- zeminin Poisson oranı
- dış yükün frekans içeriği

Şekil 2' de periyot uzamasının temel ortamının sönümüne katkısı, yüzeysel ve gömülü temel için yapı narinlik oranına bağlı gösterilmiştir. Yerel zemin koşullarının narin yapıların bulunduğu temel ortamının sönümünü etkili bir şekilde değiştirdiği gözlemlenmektedir.





Şekil 2

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Anahtar Kelimeler: *Yapı-zemin etkileşimi, empedans fonksiyonları, geometrik sönüm*

Arazi ve Arsa Düzenlemlerinde Alan Esaslı ve Dğer Esaslı Uygulamların Karşılaştırılması

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Türkiye'de arazi mülkiyetinin önemli bir kısmı müşterek (paylı) mülkiyet halinde bulunmaktadır. Müşterek mülkiyette birden çok kimse, maddî olarak bölünmüş olmayan bir arazinin tamamına belli paylarla maliktir. Paydaşlardan her biri kendi payı bakımından malik hak ve yükümlülüklerine sahip olur. Pay devredilebilir, rehin edilebilir ve alacaklılar tarafından haczettirilebilir. Bunun için diğer paydaşların onayına ihtiyaç duyulmaz. Ancak arazinin, paydaşların tamamının rızası ile aralarında bölünmemesi veya paydaşların tamamının birlikte hareket etmemesi halinde, paydaşlardan birinin veya bir kaçının kendi payları karşılığı kadar kısmını fiilen kullanmaları, arazinin imar parseli olması halinde ise, üzerinde bina yapılabilecek büyüklükte olsa dahi kendi payları karşılığı kadarına bina yapmaları mümkün değildir. Müşterek mülkiyete konu bir arazinin birlikte hareket edemeyen paydaşlarının, arazide bağımsız bina yapabilme yollarından biri; 3194 sayılı İmar Kanunu'nun 18. maddesi çerçevesinde arazi ve arsa düzenlemesi yapılarak, parselin bina yapılmaya uygun büyüklüklerde parçalara ayrılmasıdır. Ancak bu mevzuat kapsamındaki arazi ve arsa düzenlemeleri, maliklerin veya diğer hak sahiplerinin muvafakati aranmaksızın, re'sen yapılmakta, arazi ve arsa düzenlemesi sonucu oluşan parsellerin konumları, parsellere verilen fonksiyonların farklılığı ve bunların arsa değerlerine etkileri gibi çeşitli nedenlerle, uygulama alanındaki hak sahipleri tarafından itirazlar sözkonusu olabilmekte, davalar açılabilmekte ve mahkemelerce iptal edilen arazi ve arsa düzenlemeleri amacına ulaşamamaktadır. Alan esaslı olan, 3194 sayılı İmar Kanunu'nun 18. maddesi çerçevesindeki arazi ve arsa düzenlemelerinin iptaline gerekçe oluşturan, yukarıda ifade edilen olumsuz sonuçların önüne geçmenin en ideal yolu, arazi ve arsa düzenlemelerini, alan esaslı yapmak yerine değer esaslı yapmaktır. Değer esaslı arazi ve arsa düzenlemeleri ise 5393 sayılı Belediye Kanunu'nun Kentsel Dönüşüm ve Gelişim Alanı başlıklı 73. maddesi ve 6306 sayılı Afet Riski Altındaki Alanların Dönüştürülmesi Hakkında Kanun'un 6. maddesi kapsamında yapılabilmektedir. Bu çalışmada, alan esaslı ve değer esaslı arazi ve arsa düzenlemeleri örnek bir alan üzerinde karşılaştırılacaktır.

Anahtar Kelimeler: *Arazi ve Arsa Düzenlemesi, Değer Esaslı Düzenleme, Alan Esaslı Düzenleme, Müşterek Mülkiyet.*

Application of Empirical Likelihood Regression to a Real Data Set with Outliers

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Empirical likelihood (EL), introduced by Owen (1988), is a nonparametric technique for constructing confidence intervals and hypothesis tests. Empirical likelihood inference does not require us to specify a family of distributions for the data. It has sampling properties similar to the bootstrap and jackknife (Owen, 1991).

Empirical likelihood can be used to obtain estimators of slope and intercept parameters for a linear regression model. A number of studies have shown that EL is useful as EL confidence regions have better coverages than standard confidence regions when the sampling distribution is not normal.

The aim of this study is to provide a real data application of empirical likelihood (EL) confidence intervals for the regression parameters. We will investigate the EL confidence intervals on the real data which are non-normally distributed and have outliers.

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Key Words: *Empirical likelihood, Regression, Outliers*

Estimating Covariance As a Measure of Portfolio Risk Between Highly Correlated Assets

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In the modern portfolio theory which was first introduced by Markowitz (1952), one of the most important assumption is asset returns follow multivariate normal distribution, however many empirical evidences suggest that high frequency financial series exhibit negative skewness and excess kurtosis which means that asset returns are not well described with normal distribution. On the other hand, in financial theory the notion of correlation is important because of in several estimation problem of financial series, the explanatory variables may be many and highly correlated. When there are more asset than historical returns, it cause "big *p*, small *n*" problem. In such cases assuming that asset returns are multivariate normally distributed and performing ordinary least square regression (OLS), portfolio risk will be measured inaccurately. To overcome this problem, several methods have been developed such as principal component regression (PCR) and partial least square regression (PLS). In this study, we will perfom these two methods to estimate the covariance of asset portfolio as a measure of risk between highly correlated asset returns and improvements in accuracy for risk estimation will be demonstrated using historical data from Turkish stock market and the methods mentioned above will be compared and interpreted.

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Key words: *Ordinary least square, Multicollinearity, Principal component regression, Partial least squares regression, Asset allocation.*

Learning Bayesian Networks from Classification trees and Expert knowledge: a preliminary study

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1. Introduction

The development of reliable decision-support systems that assist decision-makers in classifying tasks is a common goal of many studies. In literature, there exists a number of popular algorithms for classification (Mazid et al., 2010) whose performances are very attractive whenever large datasets and, consequently, large amounts of information are available. However, when the condition of interest does only occur rarely in the statistical population and datasets include data of just a few hundred individuals, the most common rule-based algorithms and machine-learning models for classification give unstable results, and developing effective decision-support systems becomes scientifically challenging (Lucas, 2001).

2. Methodology

To address the classification problem when the sample size is too small, in this paper a "hybrid" approach is proposed. It consists in learning a Bayesian network (BN) from two sources: a classification tree and a number of expert opinions. The probabilistic reasoning of a BN allows to capture the complexity of the relations between variables, while their graphical nature clearly displays the links between different elements of the system; a BN can accommodate a variety of knowledge sources and can be readily updated when new knowledge become available (Neapolitan, 2003). On the other hand, its serious drawback of requiring huge amounts of data to properly learn about the structure and parameters of the system, is overcome by the use of classification trees, whose recursive partitioning provides classification rules generally having a simple and direct interpretation, and expert knowledge, that is not an automated machine algorithm and, maybe just for this reason, can offset lack of data against experience and intuition.

3. Case studies and results

The hybrid strategy was applied to two clinical case-studies: "rare cancer" and "Hodgkin Lymphoma", both of them designed to develop an effective decision-support system aimed to an early classification of the patients affected by the pathology of interest into risk categories: such a classification plays a crucial role in detecting the most suited treatment for each individual and, consequently, achieving a satisfying prognosis of the patient's chances of survival. The datasets consisted of 180 and 208 patients, respectively; a number of clinical and biological variables (29 for rare cancer data and 37 for Hodgkin Lymphoma data) were investigated as potential risk factors for progression or recurrence of the disease and results were validated via 10-fold cross-validation (Tab. 1, (a) and (b)).

The response variable was coded in both studies as Y = 1 for the recurrence or progression of the disease, and Y = 0 for any other possible outcome. The predictive performance of the hybrid strategy was compared with performances of each single involved approach. The results show that the proposed technique allows to gain several advantages and outperforms all of the single approaches: it showed a better specificity (to which special attention was paid, due to the seriousness of a misclassification of high-risk patients) and was competitive with regards to sensitivity.

Therefore, even though additional studies are needed to validate the hybrid approach, it seems a promising technique to develop reliable classification systems for small datasets.

Table1. CART and BN misclassification count and rates. Rare cancer (a) and Hodgkin Linphoma (b)

Case studies	Class	No. of cases	CART		BN	
			Counts (*n*)	Rates (%)	Counts (*n*)	Rates (%)
(a)	0	139	22	15.8	18	12.9
	1	41	10	24.4	1	2.4
	Tot.	**180**	**32**	**17.8**	**19**	**10.6**
b)	0	159	26	16.3	22	13.8
	1	49	11	22.4	10	20.4
	Tot.	**208**	**37**	**17.8**	**32**	**15.4**

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Key Words: *Small datasets; Classifiers; Bayesian Networks.*

Information extraction from vibration data: a time series approach

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Extended Abstract

In this work, a few statistical modeling methods are applied and their performance on information retrieval from a set of vibration data which acquired by accelerometers from a 5-story building. In addition to the time series approach some frequency domain analyses are also applied to the data to obtain an information base to evaluate the results coming from statistical methods.

Vibration analyses are used to obtain information about the behavior of buildings under external forces such as earthquake, wind, human and vehicle activities in or around the mass and vibrations by some machinery. Another method for vibration analysis is to stimulate the structure by a known force but it is obvious that it was nearly impossible for already erected huge buildings and it is left out of scope of this work. The data acquisition is completed by using 5 very sensitive accelerometers in two different measurement setup. For the first case the sensors are installed on the same position on each floor, and for the second one, a sensor is located on the ground as a reference point and all the 4 others are installed in the 5^{th} floor at four different direction. For each setup, data are acquired synchronously among all these 5 accelerometers.

As data processing methods; Fourier transforms and power spectrum analysis are used to define resonance frequencies and mode shapes of the structure. Also fading characteristics of the building is investigated as a response of external forces.

From the time series point of view; linear predictive modelling methods are primarily used to define structural dynamic characteristics of the building. Auto-regressive (AR), moving-average (MA), and combined AR-MA methods are applied. To quantifying that the modelling is in good fit, statistical procedures are applied to residual errors of the obtained models. In case of that linear models do not fit enough to the data, ARX non-linear model is another alternative for the structure dynamics definition.

Keywords: Vibration data; statistical modeling; time series

Highlights

- Vibration data of a building are investigated
- Frequency domain analyses are applied to the data
- Resonance frequencies and
- power spectrum of the building are calculated
- Time series analyses are applied to the data
- AR modelling
- MA modelling
- AR-MA modelling
- ARX modeling
- Statistical residual analysis

Application of Time Dependent Cox PH Model in risk Analysis in Serbia

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The Bank's main goal is to maximize available funds for further investments which will lead to increasing the profit. To achieve this objective, good credit risk management will determine the quality of investments, i.e. borrower's creditworthiness and the quality of given collateral. Identifying, measuring and assessing the credit risk will lead to minimization of the expected loss that Bank is exposed to. According to the Third Basel Accord, there are three main drivers of expected loss: probability of default (PD), exposure at default (EAD) and loss given default (LGD). Playing the central role in credit risk management theory, modelling the PD has attracted the attention of many researchers. Consequently, there is a wide offer of different models that can be used for predicting the PD. The cornerstone model is bivariate logistic regression (LR) [1]. LR is able to estimate the PD within the fixed time period. Nevertheless, the biggest drawback of fitting LR lies in specifying that time period for tracking client's status. In practice, the period of 12 months is most commonly taken. Therefore, the LR does not give an answer on what will happen in the actual loan repayment period. Apart from LR, various other statistical and operational research based methods were exploited in order to develop a more sophisticated models. Some of them are support vector machines, neural networks, and decision trees ([2]). Unfortunately, application of these models does not outperform LR approach in terms of forecasting PD ([3]). A simple and popular alternative is to focus on survival analysis models, i.e. Cox PH model. Cox PH model offers possibility of estimating PD during the entire repayment period which was not feasible using above refered methods ([4],[5]). One more disadvantage of all above mentioned models is taking into account only fixed values of covariates. However, some values of covariates can change over time, for example macroeconomic factors such as exchange rate change, inflation rate, changes in interest rate, changes in consumers basket, etc. [6]. Aim of this paper is to estimate the PD using the time-dependent covariates in the Cox PH model. To the best of our knowledge, this is the first application of time-depended covariates in Western Balkan countries. Numerical analysis was conducted using the real data from one financial institution in Serbia. Realized sample of total 7358 clients who have been granted credit product from June 2010 to June 2011 has been considered. Sample follows the repayment until June 2013 implying that the longest observation period was 36 months. It was considered that the client has defaulted if he missed the repayment 3 successive monthly annuities. The rate of customer's defaults was 8.96%. Besides macroeconomic factors, 20 social-demographic available clients' characteristics were taken into consideration as independent variables. In this manner developed model is harmonized with market conditions and obtained results indicate excellent model performance comparing to the performance of standard models.

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Key Words: *credit scoring models, probability of default, Cox PH model, time dependent covariates*

Panal GWR Analysis Of Consumption Behavior in Turkish Regions

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The consumption culture, that is the way that the goods and the services are consumed, identifies the identity of a community and plays an important role in its relationship with other communities. Today communities have become consumption-driven rather that production-driven, thus consumption behaviors influence economical and social changes. The main purpose of the research is to investigate whether there are considerable regional differences in consumption behaviors in Turkey's provinces.

This study aims to investigate regional consumption differences in Turkish provinces. Unlike the earlier studies which focus on only regional income differences, this study is the first study which analyses the differences in the consumption of three main goods and services for 26 NUTS 2 regions and for the period 2005-2013 in Turkey. The first group includes expenses for food products, such as beverages, meat, bread, cereals etc. The second group includes expenses for living such as housing, energy, transport and communication, clothing and medical care. Finally, in the third group there are luxury expenses such as recreation, jewelry, personal care, etc. and expenditures on cultural, educational and entertainment activities.

The Linear Approximation of the Almost Ideal Demand System (LA/AID) by Deaton and Muellbauer(1980) will be used in analyzing the regional differences in consumer behaviors. New control variables derived from the literature such as population, employment and education will be added to the original model.

The panel data regressions which take into account inter-regional interactions will be employed to estimate LA/AID model. Namely, recently developed Geographically Weighted Panel Regression technique which takes into account spatial spillovers will be used.

The findings of the study may be used to guide the decision makers in designing the regional development policies.

Keywords: Spatial Panel Models, regional disparities, regional development

Jel Codes :C33, R1, O18

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The Flexible Fourier Form and Panel Stationary Test with Gradual Shifts

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Abstract
Given the importance of structural breaks in the behavior of macroeconomic series, a special attention has been paid to develop unit root tests which allows the existence of breaks. The important question in the literature on unit root test with shifts is how to account for breaks. The traditional approach is to use dummy variables in which structural shifts are assumed to occur instantaneously (for example, Perron, 1989; Zivot and Adrews, 1992; Lee and Strazicich, 2003). In addition to the dummy variable approach, the unit root tests based on smooth transition approach are proposed since structural changes in macroeconomic time series are likely to be gradual (inter alia, Leybourne at al., 1998; Kapetanios et al., 2003). In these methods break dates, number of breaks, and functional form of breaks are need to be known. Besides, the existing literature in particular assumes *a priori* one or two structural breaks. Even though the recent literature has focused on multiple structural breaks (for example, Carrion-i-Silvestre et al., 2009), unit root tests with many endogenous breaks is subject to the determination of maximum number of breaks, the estimation of location of breaks, the over parametrization, and the loss of power (Enders and Lee, 2012a; Rodrigues and Taylor, 2012). To deal with aforementioned problems, Becker et al. (2006), Enders and Lee (2012a, 2012b) and Rogrigues and Taylor (2012) develop the unit root tests with a Fourier function based on variant of Flexible Fourier Form by Gallant (1981). The Fourier approximation captures the dynamics of series with structural break(s) by using a small number of low-frequency components.

This approach also does not require to know *a priori* the number and/or dates of breaks. The specification problem of selecting the dates, number and form of breaks is thus transformed into incorporating the appropriate Fourier terms in the regression equation (Enders and Lee, 2012b). The panel unit root tests have triggered interest because incorporating time dimension in single time series with cross-sectional dimension leads to increase in power of the tests. This paper proposes the panel stationary test with Fourier approximation which is based on the time series test developed by Becker et al. (2006) for the null hypothesis of stationary. The testing procedure permits the cross-section dependency in the form common factor by Pesaran (2007) and the heterogeneity across individuals as in the panel stationary tests by Hadri (2000), Carrion-i-Silvestre et al. (2005), Hadri and Rao (2008), and Hadri and Kurozumi (2012). The Monte Carlo simulations show that the test has good small sample properties. We examine the nature of shocks to the international commodity prices by the Fourier panel stationary test and find out the international commodity prices have non-stationary process.

***Keywords*:** smooth breaks, Fourier approximation, stationary, panel data, international commodity prices.
JEL Codes: C12, C23, Q02.

Volatility Spillovers Between Stock Markets and Bond Markets in Some Selected European Countries

Resul Aydemir Ersan Öz Bülent Güloğlu Ercan Saridoğan

The bursting of the U.S. housing bubble caused the values of subprime mortgage based securities to plummet, which in turn triggered the 2008 global financial crisis due to liquidity problems in the financial system. The crisis reached its peak when Lehman Brothers declared its bankruptcy on 15th of September, 2008. To avoid the risk of a financial collapse, the U.S. Federal Reserve (Fed) has taken steps to launch its quantitative easing programme (i.e., creating money and buying bonds and other financial assets from banks), On 22 of May 2013 Chairman Bernanke signaled the first tapering (The FED would reduce its purchases beginning in January 2014)and than the FED announced its second tapering on 18th of December, 2013.

This paper analyzes the followings using VAR-BEKK model and volatility impulse response recently developed by Hafner ve Herwartz (2006)

-The effects the above historical shocks on the volatility of stocks market and interest rates.

-The size and persistence of the shocks.

-Volatility spillovers across stock markets and interest rates of European Countries (Portugal, Italy, Ireland, Greece, Spain)

- Dynamic correlations between stock markets and interest rates

İç ve Mekanda 3D Modelleme Kullanarak farklı Tasarım Alternatiflerinin Oluşturulması ve Afyon Kocatepe Üniversitesi Rektörlük Giriş Mekanı İçin Oluşturulan Tasarım Modelleri

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Değişen ve gelişen teknolojiye paralel olarak mimarlik ve iç mimarlik alanlari da gerek malzeme, gerek tasarim gerekse uygulama bağlaminda hizla yükselen bir grafiğe sahiptir. Bu bağlamda tasarim alternatiflerinin daha kisa zamanda üretilmesi ve kullaniciya daha fazla seçenek sunulmasi adina yeni ifade yöntemleri yani dijital ortamlar kullanilmaya başlanmiştir. Özellikle tasarimcilar için hayal ettikleri ve tasarladiklari mekani insanlara anlatabilmeleri için bilgisayar destekli çizimlerle özgürleşmiştir. Mekanlari tasarlamadan önce mekanin kullanicisi ile mekan arasindaki etkileşimi ve iletişimi çözmek gereklidir insan içinde bulunduğu mekanla sürekli iletişim halindedir. Mekanlarin ve tasarim öğelerinin kendilerini ifade edebilmeleri için kullanilan araç olan renk, mekan öğelerinin yüzey renkleri ile, mekan algisini etkilemektedir. Mimaride yapinin kendini ifade biçimine katkida bulunan yüzey dokusu, mekan algisini etkilemektedir. Mimaride kullanim söz konusu olduğunda, dokunun tasarimci tarafindan bilinçli kullanimiyla, tasarlanan eserin kullaniciya tasarimcinin hedeflediği şekilde iletilmesi sağlanabilmektedir. Yapiyi oluşturan malzemelerin nitelikleri, işleniş biçimleri, birbirleri ile olan ilişkileri, tasarimcinin yaraticiliği ile birleşerek mimari dokuyu belirler. Mekanda yaratilmak istenen görünüm, seçilen işik kaynaklarinin özelliklerine de bağlidir. Mimar mekanlari oluştururken çeşitli yapi eleman ve malzemelerinden yararlanir. Bu mekani oluştururken, mekani tanimlayan görsel ve üç boyutlu objeleri kullanabileceği gibi, bazen sadece bir kaplama malzemesi, bazen de tek bir kolon bir mekan yaratir. Mekani oluşturan bir sinir vardir ama bu onun her zaman üç boyutlu bir eleman olmasini gerektirmez. Burada mekanin işlevine uygun malzemelerle donatilmiş olmasi, kullanici gereksinmelerini karşilamakta yeterli ise bir mekan yaratilmiş demektir.Tüm bu kriterler göz önüne alinarak; afyon kocatepe üniversitesi rektörlük giriş mekaninin algilanmasinda ve değerlendirilmesinde işik, renk, malzeme, aksesuarlar vb. Unsurlarinda etkili olduğunu ve mekanin değerlendirilmesinde farkliliklar yarattiği düşünülerek anket sorulari hazirlanmiştir. Anket sorulari; rektörlük giriş mekaninda kullanilacak malzeme, renk, kaplama, süsleme ve peyzaj gibi fiziksel öğelerin mekana kattiği estetik algisini ölçmeyi ve mekanda yaratacağı vizyon gibi psikolojik etkileri ölçmeyi amaçlamiştir. Bu çalişmada; afyon kocatepe üniversitesi rektörlük giriş mekaninin seçilen 80 öğrenci üzerindeki psikolojik algisi anketlerle ölçülerek, elde edilen veriler doğrultusunda rektörlük giriş mekaninin vizyonunu yansitacak ve misyonunu gerçekleştirecek iç mekan tasariminin kati modelleme alternatifleri yapilmiştir.

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Anahtar Kelimeler: *İç Mekan Tasarımı, 3d Modelleme, Rektörlük Mekanı Algısı*

Geçmişten Günümüze Uzanan Geleneksel Ve Modern Camilerin Mekansal Kurgularının, Tasarım Konseptlerinin ve Estetik arayışlarının değerlendirilmesi ve Cami Örneklerinin Analizi

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Cami, İslam toplumunda merkezi bir rol oynamıştır. Hz. Peygamber, hicretten sonra vardığı Medine (Yesrib) de ilk iş olarak bir cami inşa ettirmiştir, böylece o, İslami kurumları oluşturmaya camiden başlamıştır. Bunun içindir ki tarih boyunca cami, İslam müesseseleri için her zaman önemli bir kaynak olarak yerini muhafaza etmiştir. Camiler; müslümanların birincil amaç olarak ibadet etmek için toplandıkları, bireysel ve toplu halde ibadet etmeye uygun, dini eğitim aldıkları, bir sosyo-kültürel öğe olarak da toplum hayatının sürdürüldüğü mekanlardır. Her zaman insanların kullanım alanı olarak karşımıza çıkan camiler, bu fonksiyonların sağlıklı bir şekilde gerçekleştirebilmesi için yapının gerekli unsurlarının kullanıcı özelliklerine uyması ve rahat kullanılabilir olması gerekmektedir. Camilerin fonksiyonel olmasının yanı sıra kullanıcıların estetik arayışlarına cevap verebilen nitelikte olması ve tasarım konseptine sahip olması camilerde aranan mimari özellikler arasındadır. Mimarlıkta degerlendirme ölçütleri, "saglamlık", "kullanıslılık" ve "estetik" kavramlarına dayanmaktadır. Aydınlı'ya göre saglamlık ve kullanıslılık kavramları ögretilebilen mantık ve bilimsel bilgi çerçevesinde denetlenebilen durumlar ortaya koymaktadır. Degerlendirmede sayısal veriler elde etmek mümkündür. Kullanıslılık ve saglamlılık insanın maddi ihtiyaçlarını karsılar yapı ya da bina ortaya çıkar. Fakat bir binanın mimari yapıt olabilmesi için aynı zamanda "estetik" degerlere sahip olması; izleyenin ve kullanıcının psikolojik ve sosyo-kültürel ihtiyaçlarını da karsılaması gerekmektedir Bu bağlamda çalışmada; camilerin tarihten günümüze uzanan mimari kurguları değerlendirilerek; camilerin dış mekan nitel özelliklerinin ve iç mekan plan şemalarının analizleri tablolaştırılmıştır. Toplam 10 cami , "Geleneksel ve Modern" olarak iki grup altında değerlendirilmiştir. Tarihi nitelikteki camiler, "Geleneksel Yaklaşım" ve gelenekselin dışında kendi tarzı ve estetiğinde modern malzeme ve teknikten yararlanılarak yapılmış farklı olma çabası ile ortaya çıkan yapılar ise "Modern Yaklaşım" olarak tanımlanmıştır. Mekan kurgularına ve nitel özelliklerine göre tablolaştırılan camilerden yola çıkarak; modern ve geleneksel başlıkları altında seçilen örnek camilerin analizleri yapılmıştır. Camide bulunan mimari öğeler gruplandırılmış ve bu öğeler malzeme, biçim ve estetik yönüyle ele alınmıştır. Camilerin tasarım konseptleri analizi; iç mekan ve dış mekandaki donatıların malzemeleri, biçimleri bağlamında, mekan kurgusu analizi; örtü sistemi, plan düzenlemesi bağlamında, iç mekan tasarımının estetik anlayış analizi ise; temel tasarım ilkeleri bağlamında yapılmıştır. Elde edilen veriler doğrultusunda; geleneksel camilerle modern camiler arasındaki fiziksel uygunluk, tasarım konseptleri, mekansal kurguları, ergonomi, estetik anlayışı ve psikolojik algı açısından farklılıklar ve benzerlikler ortaya koyulmuş ve öneriler sunulmuştur.

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Anahtar Kelimeler: *Cami, Cami İç Mekan Tasarımı, Geleneksel Cami, Modern Cami*

Cumalıkızık Geleneksel Yerleşimi ile Bursa Toki Modern Yerleşiminin Sürdürülebilirlik Bağlamında Karşılaştırılması

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19.yy sanayi devrimi ile artan teknolojik gelişmeler ve sanayileşme, nüfus artışındaki hızlanma köyden kente göçü ve hızlı kentleşmeyi beraberinde getirmiştir. 20. yy a gelindiğinde insanlık, kaynakların tüketilmesi, çevrenin kirlenmesi, doğal dengenin bozulması, türlerin tehlikeye girmesi gibi sorunlarla karşı karşıya kalmıştır. Bu sorunlara farkındalığı arttırmak ve çözüm üretmek amacıyla yapılan uluslar arası toplantılar ve çalışmalar neticesinde dünya sürdürülebilir gelişmeyi temel ilke olarak benimsemiştir.

Türkiye'de ise hızlı kentleşme ve nüfus artışı, 1950'lerden sonra başlamış ve planlı döneme geçilmiştir. Sürdürülebilir gelişmeyi hedefleyen planlama yaklaşımı 1980'li yıllarda gündeme gelmiş ve ilgili yasalar yürürlüğe girmiştir. Sürdürülebilirlik, kavram olarak 2000'li yıllarda yasalarda yer almıştır. Bundan sonra Türkiye'de sürdürülebilir gelişme ile ilgili yaptırımların sayısının dikkate değer bir şekilde arttığı görülmektedir.

Doğayla ve diğer canlılarla uyumlu, çevreye ve insan sağlığına zarar vermeyen, olabildiğince az kaynak tüketen sürdürülebilir kentler ve yapılar tasarlamak, kent plancıları ve mimarların öncelikli hedefleri halini almıştır. İncelendiğinde görülmektedir ki, yerel mimarlık ürünleri; tasarımcılara sürdürülebilir tasarıma dair eşsiz örnekler sunmaktadır.

Bu çalışmada Türkiye'de Marmara denizinin güneyinde yer alan Bursa ili sınırları içerisinde bulunan 700 yıllık Cumalıkızık geleneksel köy yerleşimi ve yine aynı ilin kent merkezinde bulunan alt gelir grubuna konut edindirmek amacıyla kurulan, Başbakanlık Toplu Konut İdaresi(TOKİ) eliyle üretilen, 2010 yılı yapımı toplu konut projesi Doğanbey Toki yerleşmesi tanıtılacaktır. Sürdürülebilirlik kavramı dahi yokken üretilen geleneksel yerleşme ile sürdürülebilir tasarım için yasal ve yönetsel yaptırımların var olduğu bir dönemde inşa edilen modern yerleşme sürdürülebilirlikleri açısından karşılaştırılarak olumlu ve olumsuz yönleri irdelenecektir.

Anahtar kelimeler: Sürdürülebilirlik, Sürdürülebilir Tasarım, Yerel Mimarlık, Cumalıkızık Köyü, Toplu Konut

‘Materials of Spaces’ & ‘Spacesfor Materials’

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The expectation for higher comfort levels and the technology used for it have evolved dramatically through to the performance of a design work. It is a big challenge for interior architecture to satisfy both the new technology predicted and expected in new spatial design which also gives pleasure to live in it. The paper stands on the intellectual design concerns evolved from traditional thinking to modern. The work was framed in three stages as ‘construction materials of know-how techniques which incorporate spatial generations’, ‘building materials of construction catalogue having specific used in spatial constitution’, ‘novel materials which are subjected to design’. This evolution plays in opposite manner of nowadays has been defined as materials of spaces and spaces for materials. Merely smart materials cannot make a design smarter for living. It is just like a music work, any technological treatment can make its performance to be shorted in notes. Because it will change the rhythm of melody and make it entirely different. For not changing the flow of living rhythm in space, interior architecture needs to find a way to balance and meets at the mid-point. It is the departure of paper and the models of both were debated on.

Key Words: *material thoughts, interior architecture, construction culture*

Alteration of Space in Sille Tradational Residences Via Technological Equipment

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4. ABSTRACT

Basic behaviours that sustain human beings can be listed as finding food, water and shelter. The presence of water and means of existence (farming or stock breeding which means providing food) are the main factors while choosing shelter (Tuncdilek, 1967). Houses that are formed as a result of these needs are shaped in relation to the geographical values and the culture of the area (Rapoport, 2002; Rapoport, 1994).

Anatolia has accomodated many cultures and civilizations throughout the history. In Anatolia, settlements which are still authentic were shaped according to the natural habitat and social environment with regard to the original way of life of the settlers. Buildings, especially the houses, that form the settlements and are made by the man power, have been the indication of the cultural identities of the habitants and for scientific studies, they have been examples that demonstrate how the opportunities of the environment are used in harmony as needs arise. In this diversification, geographical values are a data; construction materials and the number of floors differ according to the topography. Also, the change in climate according to the geography resulted in the use of the same construction material in different places in different regions. In Anatolia, the settlement of Sille, which has harboured various cultures since the middle ages, is examined in this study due to its authentic texture and various architectural layers. Sille, which is situated 8 km NW of Konya city center, is an important settlement due to being a host to both Muslims and Christians. First settlers were Christians. The skirts of the mountain which is easily shaped were used as sanctuary and temple. Immigration of Muslim Turks to Sille began after Konya and its vicinity was captured by Seljuk Turks. Christians and Muslims lived together during both Seljuk and Ottoman periods. As a result, life in Sille differed from the life in Konya, and it brought variation to cultural subjects such as speech, clothing and traditions. While Sille had been a very developed settlement as far as socio-econom is concerned before the Republic, after the Lozan Agreement, the Greek population in Sille were sent to Greece and Turks living in West Trakia were settled here. After the commutation, economic and social life significantly changed and the population decreased.

Sille was declared an urban protected site in 2001 via rule no 4328. It was aimed by Selcuklu Municipality that Sille can be an added value to sustainable culture tourism with regard to Culture Valley project in 2001. Today, increasing the popularity of Sille -especially visited by domestic tourists widely- and turning it into a touristic place, sharing and exhibiting its values are aimed.

It is possible to mention two different textures which are tangible indicatiors of authentic and historical textures in Sille. The first is the hurches that were carved into the

skirts of mountains, which belongs to the early Christian era. The ceilings, floors and walls of these churches are decorated with various paintings some of which are still intact today. Most of them are damaged due to lack of care and external reasons. The second is the traditional architecture such as houses, baths, eduactional buildings churches and mosques which are created via the population of Sille with regard to their own culture, needs and likes. Sille, which is situated on a slope area, is shaped organically and has narrow streets. In the organic texture that is shaped according to the slope of the area, one house's roof is a terrace for the next house. Stone, earth and wooden materials are used in houses in general. Generally, the first floor of the two-storied houses is used as service areas such as barn, kitchen or cellar. Houses have an L-shaped or an interior yard. In Sille, culture of kitchen is also authentic; especially the cellar is very important.

In traditional Sille houses, which are still in use, changes are seen with regard to needs, changing life conditions and preferences. One of the main reasons of the change is the technology creating space for itself inside houses. Although the use of technological/technical equipments is inevitable or necessary, it alters the authentic parts. In this study, changes in the life style and in the living spaces with regard to technology in Sille houses are examined. Analysis with regard to the subject is made in living spaces and kitchens-cellars which are the main spaces for Sille traditional houses. As the habitants of our 3 samples are from Sille, the continuation of tradition can be seen in the study. In the kitchen and cellar refrigerator, oven, deep freeze, and in the living spaces television and computer are widely used. Together with the technological household appliances, the need to store in a cellar and production of food differs. The changes are examined under two titles: i. Cultural change, ii. spatial -equipment-wise change. Under these titles, it was aimed to determine both the authentic situation and the current situation. In the study, on-site examinations, technical drawings and photography were used as documentation methods; archive research and oral information transfer are used to determine the culture of daily life.

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Key Words: *traditional architecture, Sille, technologic equipment, traditional indoor arrangement.*

Traditional and Modern Interiors of Turkish House

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Traditional Turkish house is characterized with its original shape of the room; plan layout, construction and roof forms. Although these houses are multi-storeyed, the use of space is influenced from the ancient houses from Byzantine era in Anatolia and from the tents of Turks from Central Asia. The houses from the Ottoman period have also similar spatial organization. Two main spaces "sofa"(common space) and the "room" as a living unit differentiate the Turkish house from other houses in other geographies. Some similarities can be found in neighbourhoods due to the cultural interactions between societies and migrations. The interior of the room in traditional Turkish house is characterized with its fixed-in-furniture, which supplies all necessities of a person in a house. There is no difference between the rooms in traditional Turkish house, such as kitchen, bedroom, living room or bathroom; since every room is designed for all activities as one living unit.

This paper will discuss the similarities and differences in use of space between traditional Turkish houses and todays' flats in apartments. The comprehensions will be made through the field works on traditional houses and with the projects of architecture students in Mimar Sinan Fine Arts University, Istanbul. The concept of the students' projects is redesigning their own houses. Since the students are from different regions of Turkey; their houses have both similar and different spatial characteristics. The cultural identity of the user also plays a role in use of living space that will be discussed in this study.

This paper is focused on interior space and use of furniture in both traditional and contemporary spaces of Turkish houses. The aim of this study is to put the relation between the past and todays' use of interior spaces of Turkish houses.

Key Words: *Traditional Turkish house, interior, furniture*

Consevation and High-Tech Go Hand in Hand!
-Now Modernism itself is in need of protection-

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For decades Modernism has been invoked in aid of preserving historical buildings, and many buildings have been successfully conserved. Now it is time that the icons of Modernism themselves are in need of conservation. Modern architecture, with its socio-cultural background, is a relic of its era. It represented an utopia, or the dawn of a new age, in which one was dreaming of a better world. The historical city centre of Vienna is already to be found on UNESCO's World Heritage list. The Federal Heritage Office in Vienna also supports culturally and ecologically sustainable management of modern architecture, and sounds out the limits of technological possibilities to secure the artistic heritage of Modernism. Latest research methods and the use of recent findings from the field of Restoration Science help both in the preservation and restoration of the masterpieces of Modern art and also in the revitalization of Modern architecture in Vienna, which characterizes the cityscape.

1. The parallelism of the ideologies of conservation and Modernism

At first glance the combination of the preservation of historical buildings and modern architecture seems to be contradictory. This combination is actually based on the principles of harmony of opposites in architecture. The devotees of Modernism demand a strong reference to the present alongside the rejection of historical forms. For them, it is not worth the effort to realize reconstructions instead of creating new buildings. The "readability" of a historic monument depends in no way on the additions and reproductions that are loyal to the original, but there are certainly ways to plausibly enhance historical substance or even accentuate it by contrast using contemporary means– for example, with modern architecture.[1] It is important to "preserve what is available to the greatest extent possible, to recall what has past, but to manage the present with the means and powers of our time," said journalist W. Strodthoff.[2]

The idealized target for conservation is to preserve the authentic condition of the monument and to counteract the decay. On the one hand this allows the artistic manifestation to persist in the future and on the other hand it allows for the preservation of cultural heritage for future generations. In accordance with international standards developed by Ruskin, Morriss, Gurlitt, Clemen, Dehio and Riegl and others over 200 years, the task of historic preservation lies in the preservation of historic substance.[3, 4] By no later than 1900, the importance of the authenticity of the original as a document was appreciated, and the transformations which a historical monument undergoes in the course of time were recognised as worth preserving. At that time, this was directed against the widespread tendencies towards the purification of style and the attempt to re-establish the original condition. Such an act, according to Dehio in 1901, is the attempt "[to] turn back the course of history, and almost always on an uncertain

basis" In the event of rivalling monument-related values – particularly concerning artistic quality - historic value was accorded the greatest status, for as Dehio stated in 1905, it represented an "immutable standard of value", while artistic appreciation was subject to fluctuation.[5]

In terms of historical value, the monument is viewed as a document, a testimony to history, and requires its unaltered preservation.[6] On the other hand, in the course of the 20th century the avant-garde of western Modernism established a concept in art, the core of which was the originality of the respective idea. Every reconstruction of a lost monument which is not justified as a conservational necessity, substantive or aesthetic repair, contradicts the essence and empirical value of material heritage. Gebeßler states that for those who first consider the idea, the architectural draft and consequently the building plan as the essence of the historical monument, and not its materialisation as the bearer of the historical, historical monuments can continue to be reconstructed arbitrarily often.[7] The question of with what awareness and means the task of repair is to be approached must be discussed. Creating something new in dialogue with what has been destroyed can occur with respect for what exists as well as for the fate which has befallen it; many architects demonstrated this after the war, he adds.

2- High-Tech at the service of protecting Modernism

The Federal Heritage Office of Vienna supports the culturally and ecologically sustainable management of modern architecture and explores the limits of technology to secure the artistic heritage of modernism. The latest research methods and the use of recent findings from the field of Restoration Science help in both the preservation and restoration of the masterpieces of Modern art as well as in the revitalization of the Modern architecture which determines the cityscape of Vienna. The main goal for the conservation efforts is to preserve the buildings known as symbols of cultural development of the post-war period in their specific and characteristic manifestations.

During preservation work specific properties of the building being conserved have to be considered. Building physics, safety technology and barrier freedom, whose standards have increased significantly since the period in which the buildings were constructed, often have to be considered in order to fulfil the requirements. The scientific analyses of the monument's condition are to be executed with the latest scientific methods. Thus in the investigation of the coating of the metal parts, for example, light and scanning electron microscopy, and infrared spectroscopy, as well as micro-chemical tests are used.

The three recently restored examples in Vienna, the revitalization of the former Hoffmann-La Roche-building as Hotel Daniel, the technological modernization and re-opening of the '21er Haus', the subsequent use of the restaurant at the Iris lake in the Danube Park as the Korean Cultural Centre are successful examples of the interaction of contemporary technology and Modernism in the preservation of Modern architecture.

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Keywords: *Preservation of Modernism in Vienna; High-Tech; Restoration; Hotel Daniel (former Hoffmann-La Roche-Building); Korean Culture House (former Lakeside Restaurant); 21er Haus (former 20er Haus)*

The Impact of Passive Traditional Strategies on Saving Energy in Hot climate

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Over last decade, rapid growth in economic and population accompanied with depletion of the energy resources lead to serious impacts on environment and humanity. This development coupled with active constructions. Therefore, principle of passive design has required, The term of passive design, define as a series of architectural design strategies used by the architecturs and designers to develop the building in order to respond adequately to climatic conditions among other contextual necessities. [1]. There are several parameters, which can affect passive design criteria like, , orientation, building shape, building opening, courtyard, the type of sunshade, the selection of building materials, insulation materails and vegetation, etc. All these parameters can integrate or used separately to achieve the goal of passive concept.Nowadays, the majority of buildings design neglected the passive methods to provide the required thermal conditions, which forced people to depend on mechanical system that associated with high-energy consumption especially in the warm –humid climatic zone. A comparison of thermal comfort between modern and traditional buildings during various seasons clarify that the traditional building maintains a balanced condition of humidity and airflow combined with temperature to provide thermal comfort during all seasons. [2]&[3]

Over many centuries and nowadays the courtyard present, the most characteristic forms of residential architecture in hot climates in order to utilized it as a source of shade and ventilation in daytime and as a collector for the cool air at night. It had been conclude that the courtyard building could be relevant in all climates but it was more energy efficient in hot dry and hot-humid climates than temperate and cold climates . [4] The vernacular house in Iraq designed to contain the courtyard (housh) which located at the center of the building. The courtyard planted with trees and usually had a fountain in order to raise the level of the cooling air within the wall, in addition the courtyard designed to be the focus for all communication in the building [5]

Simulation method is the most widely used to investigate the passive and active strategies and their impact on energy performance and savings IES-VE is a performance analysis software that allows architects interiors desginers and engineers to offer quantitative feedback with an integrated collection application that can easily be linked by a single integrated data model and a common user interface. The IES program coupled with a green building concept can use 30% less energy than conventional buildings [6]. it has been found that the passive cooling design strategies affect the building performance; meanwhile these strategies represent the simplest ways and the lower cost options that could improve the cooling level inside the building.

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Key Words: *(Passive Strategies, Saving Energy, IES Software simulation)*

Dimerization of tetrahydroisobenzofuran-4-one: Synthesis of Natural Product

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Dimerizated naturally molecules have been known as a group of fascinating purposes for scientists, owing to their enchanting structural buildings and considerable biological roles. Not interestingly, important endeavours have dedicated to their synthesis. For instance, a dimer compound of natural product, Incarviditone, separated and purified from *incarvillea delavayi*, a plant used as a folk medicine in Chinese for therapy of giddiness and anemia. Moreover, this dimeric structure has been lately occured via dimerization by Lawrence research group [1,2].

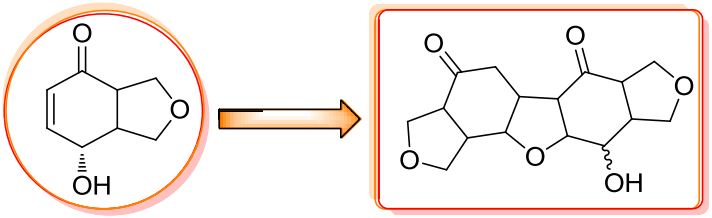

Figure 1. Dimer compounds from benzofuran-4-one

We have been detailed a concise and facile dimerization of 4-hydroxy enone that was obtained starting with the previously known compounds. A this form of dimerization can be elucidated its instability in the situations containing base at different temperatures for synthesis of some natural products having dimeric aglycone moiety [3].

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An Efficient Stereoselective Synthesis of Some Psudocarbasugar Poliols

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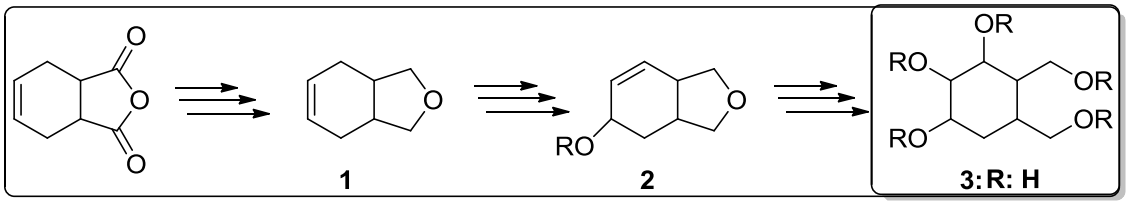
Considering the unique properties among products of organic synthesis, carbasugar take a special place which find more and more wide application in the diabets, cancer research [1] and that prosess antifeedant, antibiotic, antileucemic growt regulating activity [2].



Suitable projected molecule, isobenzofurane **1** are useful synthetic intermediates in several organic transformations such as the synthesis of polyhydroxylated natural and unnatural carbasugars. In our ongoing purpose in connection with cyclic carbasugar generation we investigated chemical reduction of *cis*-hydrophtalic anhydrate to give dihydroxymethyl cyclohexene. Cyclization of dihydroxymethyl cyclohexene afforded hydroisobenzofuran **1**. Oxygenation of hydroisobenzofuran **1** by the singlet oxygene yielded **2** with ene reaction. Oxidation and hydrolyzation of **2** gave our target cyclohexanoid carbasugar derivatives **3**.

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Stereoselective Synthesis of Diphenyl Substituted Conduritol-type Carbasugars

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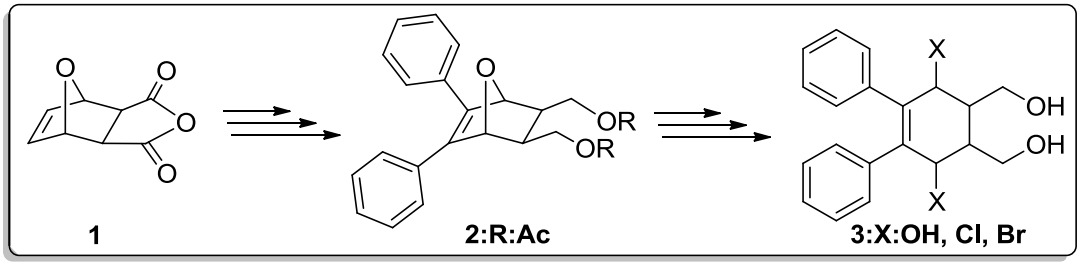
Synthetic and naturally occurring conduritols containing carbasugars have much of biological activities and have significant applications in biological and medicinal chemistry[1]. Cyclohexitols are polyhydroxlated cyclohexanoid compounds and some of them are known as carbasugars. A number of conduritol derivatives have antibiotic, antileukemic activity[2], particularly as glycosidase inhibitors[3]. Therefore, our research programme focuses on synthesis of phenil substituted conduritols **3**.



In our ongoing project, we have prepared diphenyl substituded oxo-norbornene derivatives using Suzuki Coupling method and by using unexpensive chemicals, methods. Cleavage of C-O bound in the oxo-norbornene system by Lewis acides gave di-halogeno and tetra-hydroxy-type carbasugars having conduritol moiety.

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Stereoselective Synthesis of Halogen Substituted Carbosugars Compounds

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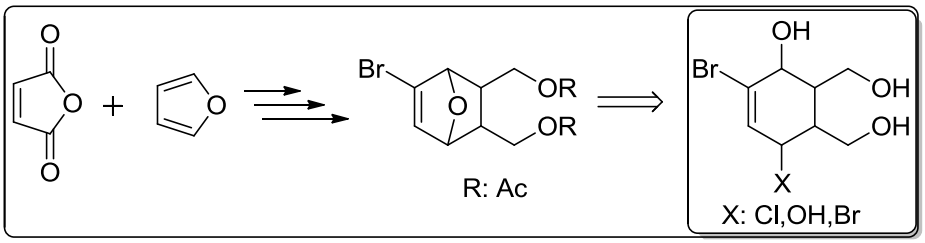
Synthetic and naturally occurring conduritols containing carbasugars have much of biological activities and have significant applications in biological and medicinal chemistry[1]. Cyclohexitols are polihydroxylated cyclohexanoid compounds and some of them are known as carbasugars. Conduritols or carbasugars derivatives have antibiotic, antileukemic activity[2], particularly as glycosidase inhibitors[3]. Therefore, our research programme focuses on synthesis of halogen substituted carbasugars.



In view of the importance of substituted oxa-norbornene in the synthesis of carbasugars and natural products, a strong impetus has been given to develop a mild, less toxic, economically convenient, and user-friendly reaction protocol for their preparation. In the study, starting materials are furan and maleic anhydride cycloadittion reactions that gave oxa-norbornen derivatives. After reduction, bromination of double bonds, and elimination of dibromines formed HBr were a series of reactions that give bromo-oxonorbornen derivative. Cleavage of oxa bridge in the ring obtained substituded halogeno carbasugar as target molecules.

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Synthesis and Characterization of The Schiff Bases and Their Transition Metal Complexes

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Schiff bases are the condensation products of aldehydes or ketones with primary amines. They contain the azomethine (– HC=N–) group and were first synthesized by Hugo Schiff [1]. The great interest was shown to synthesis Schiff base and their transition metal complexes due to its numerous applications such as metal chelating agents, heterogeneous and homogenous catalysts, antimicrobial agents, in trace metal analysis, pesticides, antitumor agents, spectrophotometric and fluorimetric agents and in solar cells [2].

Schiff bases derived from aromatic amines and aromatic aldehydes have a wide variety of applications in biological and inorganic chemistry because they possess structural similarities with natural biological substances and synthetic flexibility that enables design of suitable structural properties [3]. They are used in optical and electrochemical sensors, as well as in various chromatographic methods, to enable detection and enhance selectivity and sensitivity [3].

We focused on the preparation of Schiff base consisting of reaction of 5-amino-1,10-phenanthroline with 3-methoxysalicylaldehyde, 4-methoxysalicylaldehyde and 5-methoxysalicylaldehyde. Their metal complexes [Ni(II), Co(II)] have been prepared. Chemical structure of ligands and their complexes were characterized by FTIR, ^{1}H-NMR, elemental analysis.

As a result, these types of complexes have great importance for use as semiconductor, photochromic or thermochromics material.

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Key Words: *Schiff base, complexes*

Syhthesis, Characterization, Electrochemistry And Voc Sensing Properties of Novel Metallophthalocyanines

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Phthalocyanines have been studied for many years and they are still the subject of intense investigation. Phthalocyanine and its transition metal complexes have been used in various technological applications, such as gas sensors, catalysts , solar cells, liquid crystals, nonlinear optics, electrochromic displays and photodynamic therapy (PDT) [1,2].

In this study, the precursor [4,4'-cyclohexylidenebis(2-cyclohexylphenoxyphthalonitrile)] was prepared by the reaction of 4-nitrophthalonitrile and 1,1-bis[3-cyclohexyl-4-hydroxyphenyl]cyclohexane in dry DMF in presence of dry K_2CO_3. The mononuclear phthalocyanines [Co(II), Zn(II) and Cu(II)] were obtained from starting material by addition of the corresponding metal salts [$Co(OAc)_2 \cdot 4H_2O$, $Zn(OAc)_2 \cdot 2H_2O$, $Cu(OAc)_2$]. The new compounds were characterized by elemental analysis, IR, UV–vis, ^{1}H-NMR and MALDI-TOF mass spectrometry techniques. In addition, the redox behaviors and sensing properties toward VOCs vapors such as toluene, ethanol and carbon tetrachloride of these compounds were also investigated [3].

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Key Words: *Phthalocyanine, synthesis, gas sensing, electrochemistry*

Kinetic Differences Between Three Commercial Epoxies Curing to Room Temperature

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Epoxy resins are products obtained from petroleum, which are found in solid or liquid state with variable viscosity. These resins react with hardeners and curing agents to create lattice frame work structures, with excellent resistance to acids, bases and solvents [1] and good mechanical properties. For these reasons, they are used in thousands of real applications. The curing process of thermosetting polymers generates a three dimensional network due to chemical reaction between epoxy resin and hardener. As a consequence of the improved cross-linking density an increase on the material the glass transition temperature (T_g) occurs. The most widely used epoxy resins are formulated from the reaction between A-bisphenol and epichlorohydrin. The opening of the epoxy or oxirane rings yields the generation of hydroxyls (OH) which allows further crosslinking through appropriate chemical agents. The OH groups generated in the polymerization reaction act as catalysts and increase the initial reaction rate [2,3].

This study employs Differential Scanning Calorimetry (DSC) technique and focuses on the curing kinetics and the activation energy of the commercial epoxy resins (all cured at room temperature). These resins were Loctite Hysol 9483 (Henkel AG & Company), Epofer EX 401 (Feroca Composites, S.A.) and Araldite 2020 (Huntsman International LLC), with 12, 24 and 25 h curing times respectively. Non-isothermal and isothermal test were carried out. The kinetics parameters were calculated by Kamal's equation and "model free kinetics" (MFK). Kamal's equation allowed to calculate the kinetic parameters of the two reaction mechanisms (autocatalytic and n-order). Kinetic constants permit to calculate the activation energy (E_a) from Arrhenius' equation. E_a also was calculated with MFK as a function thr conversion degree.

The parameters obtained by Kamal's equation provided information on the importance of autocatalytic mechanism when curing is carried out at room temperature where diffusion processes are slower than those at high temperature.

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Key Words: *(Glass-ceramic, Surface treatment, Atmospheric plasma, XPS, Surface energy)*

Chemical Changes on Thermoplastic Polymers Treated With Atmospheric Pressure Plasma Torch

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Thermoplastic polymers have been increasingly used in many applications due to their attractive properties, such as recyclability and lightweigh. Among them, the most widely used are polypropylene and polyethylene due to their low cost. However, most of polymers present a chemically inert surface with absence of active functional groups and low surface energy. This low surface energy hinders wettability of polymers, thus most of available paints and adhesives are unable to attach to the surface. Typical surface modification techniques for polymers include severe chemical oxidation [1] or mechanical processes [2]. However, the possible surface degradation and problems associated with pollutants have promoted the development of new physicochemical techniques based on plasma energy [3,4].

Plasma consists on an ionized gas after exposure to a high energy. Electrons and radicals are formed and interact with solid surfaces. The energy contained in plasma species can be transferred to a polymeric surface yielding a wide range of modifications. These reactions include ionization and rupture of molecules to form reactive species, and further grafting and functionalization without increasing the sample temperature [5].

Atmospheric pressure plasma torch (APPT) is a cold plasma treatment, whose industrial implementation is easy on in-line processes. In this work the effect of APPT on polyethylene, polypropylene and ABS (poly(acrylonitrile butadiene styrene)) surfaces were studied and characterized by X-ray photoelectron spectroscopy (XPS).

The results had demonstrated that APPT produced surface oxidation by formation of carbonyl and carboxyl groups. Other nitrogen containing functionalities (N-O and NH_4^+) were also found on the treated surface.

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Key Words: *(Surface treatment, Thermoplastic, Atmospheric plasma, XPS)*

Addition of a Crosslinking Agent Into Conventional Silane Solution: Effect on Hydrolysis And Condensation Process

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Currently, silanes are being increasingly used in many applications as substitutes for toxic coatings due to the combination of properties displayed for a lot of them on all kind of materials, increasing adhesion and corrosion strength from environmental friendly solutions [1].

Several researches inform about γ-methacryloxypropyltrimethoxysilano (MPS) provides a good performance as adhesion promoter on metallic, polymeric and ceramic joints [2,3]. Moreover, this good behaviour is decreased under wet conditions [3]. This loss of properties can be avoided increasing the crosslinking degree of silane coating.

It is necessary to promote hydrolysis process of silane solution to get good coating. The optimal hydrolysis conditions will depend on different factors, such as type of silane and pH [1]. Therefore, studying the hydrolysis process of silane solution is a critical parameter in order to understand the behaviour of silane coatings.

So, in this work was studied the hydrolysis and condensation process of MPS at 1% in aqueous solution for pH 4 by Fourier transform infrared spectroscopy (FTIR) and H^1 NMR Spectroscopy. The hydrolysis process of previous MPS solution after adding tetraethoxysilane (TEOS) has also been studied.

The results showed hydrolysis and condensation reactions are more important when both silanes are in the solution.

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Key Words: *(Silane, Hydrolysis and condensation process, RMN-H, FTIR-ATR)*

Non-thermal Atmospheric Pressure Plasma: Surface Effect on Black Glass-Ceramic

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In the domestic and high-technology markets important applications for glass-ceramics have been found [1]. Glass-ceramics combine the properties of crystalline ceramics and glass properties and find applications in the telecommunications and optical industries, such as optoelectronic and microwave devices, surgical implants, dental materials, cook tops, and telescope mirrors [2].

Plasma is an active media constituted by energetic neutrals, ions and electrons which act on a surface modifying its physicochemical nature [3]. The energy contained in plasma particles can be transferred to a surface modify its properties. Studies were performed glass and they showed a change in surface energy in surface chemical bonds [4,5].

In this work the effect of atmospheric pressure plasma torch (APPT) on black glass was studied from a surface point of view. APPT is a cold plasma, whose industrial implementation is easy on in-line processes. This effect has been characterized by contact angle measurements and X-ray photoelectron spectroscopy (XPS). With APPT an increment of the surface energy is produced, independently on the parameters used. The increase of the surface energy is around 28 %, and is due to polar component. By XPS is observed an increase on the oxygen percentage of approximately 48%.

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Key Words: *(Glass-ceramic, Surface treatment, Atmospheric plasma, XPS, Surface energy)*

Benzo-15-Crown-5 Containing "No" Donor Ligands And Complexes: Synthesis And Tautomerism *ortho*-Hydroxy Substituted Compounds

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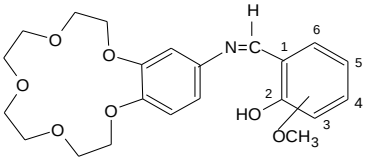
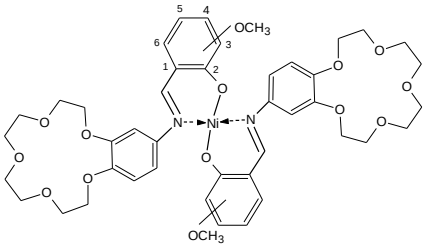
Crown ethers have been the subject of much scientific interest for more than 40 years [1], finding application as complexation agents in many fields [2]. Crown ether containing Schiff bases are known to bind alkali metal cations in the crown ether cavity in addition to the coordination of a transition metal centre through the NO donor atom [3].

NO donor ligands were prepared by the condensation of methoxy substituted salicylaldehyde with 4'-aminobenzo-15-crown 5 (**1-3**). New crown ether ligands of Schiff base type (**1-3**) containing recognition sites for alkali metal and transition guest cations.

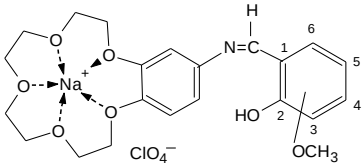
Ni(II) complexes (**1a-3a**) have been synthesized with bidentate NO donor Schiff base ligands (**1-3**) with $Ni(CH_3COO)_2$. $4H_2O$. Monotopic crystalline 1:1 (Na^+:ligand) sodium complexes (**1b-3b**) of the crown ether ligands were also prepared. Schiff bases (**1-3**) and complexes (**1a-3a, 1b-3b**) were characterized by elemental analyses, FT-IR, mass and ^{1}H-, ^{13}C-NMR spectroscopy. The presence of *ortho* substituted OH group in Schiff bases regarded as one of the important elements favouring for the existence of intramolecular hydrogen bonds and also the tautomerism accounting for the formation of either phenol-imine and keto-amine (O-H···N ↔ O···H-N) tautomers. The tautomeric equilibria have been systemetically studied by using UV-vis absorption spectra for the *ortho* hydroxy substituted compounds (**1-3**).



(**1**) 3-OCH_3
(**2**) 4-OCH_3
(**3**) 5-OCH_3



(**1a**) 3-OCH_3
(**2a**) 4-OCH_3
(**3a**) 5-OCH_3



(**1b**) 3-OCH_3
(**2b**) 4-OCH_3
(**3b**) 5-OCH_3

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Key Words: *Crown ethers, Schiff Bases, Tautomerism*

Synthesis And Characterization of UV Curable Hyper Branched Polyester Polyols Based Acrylates

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UV-curable coatings offer various advantages such as: instant drying, low VOC, reduced energy consumption and less space and capital requirement for curing equipment compared to thermally cured coatings [1].

Hyperbranched polymers (acrylated polyester, polyurethane etc.) have attracted for UV curing applications. Today, a novel way of modifying the coating properties is by changing the macromolecular architecture, as the architecture of macromolecules is an important tool to obtain polymers with desired properties. Introduction of large amount of branching units into a polymer chain dramatically enhance its physical properties such as viscosity and solubility. Because of unique physical and chemical properties and potential applications in various field, interest in hyperbranched polysters is growing rapidly.[2]

The objective of this study is to synthesis a new UV-Curable Hyperbranched Polyester Polyol Based Acrylates and to investigate their coating applications on Plexiglass® substrate. In this study, several hyperbranched polyester acrylates were synthesized by polycondensation reaction as follows. Firstly, [2, 2 bis (4-β-hydroxyethoxy) phenyl propane] (HEPA) was prepared by the rections of bisphenol A and ethylene carbonate. After, HEPA was reacted with dimethylol propionic acid to obtain first and second generation hyperbranched polyester polyols. Finally, UV curable acrylic hyperbranched polyesters were prepared from reacted between acryloyl chloride and the hyperbranched polyester polyol. H^1 NMR and FT-IR spectroscopy methods determined the structural characterizations of the UV-curable compounds.

Acknowledgement: Financial support from Marmara University Science Fund (BAP No. FEN-A-090909-0301).

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Keywords: *UV curable, hyperbranched polyester, coating materials*

Synthesis And Properties of Hybrid Polyurethane Acrylate Coating Materials by UV Irradiation And Sol-Gel Method

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Polyurethanes (PUs) have been used extensively in coating industries and are one of the growing segments of it because of their excellent abrasion resistance, low temperature flexibility, excellent chemical, mechanical and physical properties. Polyurethane acrylate elastomers represent a new class of polyurethanes, which contains ``soft" segments formed of polyester or aliphatic polyether chains,``hard" segments formed from urethane groups, as well as acrylic structural units [1].

The sol–gel process is the most commonly used method for the preparation of organic inorganic hybrid materials at macro- or micro-scale, even at molecular level in mild conditions. It involves a series of hydrolysis and condensation reactions starting from a hydrolysable multi-functional alkoxysilane as precursor for the inorganic domain formation. Properties of the resulting hybrids heavily rely on the distribution of inorganic nanoparticles within the organic matrix. The use of suitable coupling agent provides bonding between the organic and the inorganic phases, which are linked by chemical covalent bonds, hydrogen bonds or physical interaction, therefore, well-dispersed nanostructured phases may result [2].

Curing with UV irradiation method has been widely employed in sol–gel processing of hybrid coatings bearing a photopolymerizable organic functionalities, for instance, vinyl, epoxy and

acrylate groups. The main advantages of UV-curing technique are high-speed process, lower energy consumption as well as the curing process occurs at ambient temperature, lower process costs, high chemical stability and environmental friendliness by avoiding solvent exposure. In addition to above mentioned advantages, this technology can alsomeets the newrequirements for traditional and advanced applications, since it can offer a broad range of final properties by modest changes within the formulation and the curing conditions [3].

In this study, hybrid UV curable urethane acrylate oligomers based epoxy were prepared from aromatic epoxy resin vinyl phosphoric acid and sol-gel solution [(tetraethoxysilane (TEOS) and (3-methacryloxypropyl) silane (MAPTMS)] .The effects of vinyl phosphoric acid and silica content on the physical, mechanical and thermal properties of the UV-cured hybrid coatings were systematically investigated. Moreover, the nanostructure of the hybrid materials was examined .

Acknowledgement: Financial support from Marmara University Science Fund (BAP No. FEN-A-120613-0270).

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Keywords: *UV curable, polyurethane, coating materials*

Synthesis And Characterization of Novel Metallophthalocyanines

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The design of novel substituted phthalocyanines closely follows the requirements of their intended applications. Phthalocyanines, in particular their readily soluble peripherally substituted derivatives, possess a wide range of chemical and physical properties that make them interesting building blocks for a number of applications and new materials [1]. In our previous study, new type of asymmetric dimeric phthalocycnine was prepared [2-4]. The electrical conductivity of this compound displays as inorganic semiconductor [5].

The aim of this study is to synthesize of novel metallo phthalocyanines. At first, 4-(4-methylpyridin-2-yloxy) phthalonitrile **(1)** was synthesized from 2-hydroxy-4-methyl-pyridin and 4-nitrophthalonitrile in dimethyl formamide at 60^{o}C for 36 h. In the second step, metallo phthalocyanines were prepared by the reaction of compund **1** and zinc (II) acetate and copper (II) acetate, respectively in 10 ml dry amyl alcohol for 12 h.

Structrures of all synthesized compounds were determined by elemental analyses, UV/vis, ^{1}H-NMR, MALDI-MS spectroscopy and IR spectroscopy.

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Key Words: *Metallophthalocyanine, pyridin, phthalonitrile, amyl alcohol, zinc, copper, spectroscopy*

Synthesis And Characterization of Rare-Earth Sandwich Complex

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Over the two past decades, a substantial number of sandwichtype metal complexes with phthalocyaninato ligands have been synthesized. These complexes display unique physical, spectroscopic and electrochemical properties since the large conjugated p systems in these complexes are held in close proximity by metal ions. In our previous study, we achived for the first time the synthesis of a new type of unsymmetrical and dimeric dilutetium tetraphthalocyanine, Lu(Pc)4, involving two double-deckers [2-4]. The electrical conductivity of this compound displays as inorganic semiconductor [5].

In this study, starting with 4-nitrophthalonitrile and 3-hydroxy-6-methyl-2-nitro-pyridin, 4-(6-methyl-2-nitropyridin-3-yloxy) phthalonitrile **1** was synthesized in dimethyl formamide at 60^{o}C for 36 h. In the second step, sandwich phthalocyanine was obtained by the reaction of compund **1**, $Lu(OAc)_3.xH_2O$ and DBU in 10 ml dry amyl alcohol for 6 h.

The novel compounds were characterized by elemental analyses, UV/vis, ^{1}H-NMR, MALDI-MS spectroscopy and IR spectroscopy.

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Key Words: *sandwich, phthalocyanine,, pyridin, phthalonitrile, amyl alcohol, lutetium, spectroscopy*

Phenolic And Flavonoid Contents of Extracts From Clover Leaf

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Antioxidants have been widely used as food additives to provide protection against oxidative degradation of foods by free radicals. Some chemicals that occur naturally in plants have begun to receive much attention as safe antioxidants since they have been consumed by people and animals for years. Therefore, the development and utilization of more effective antioxidants of natural origin are desired [1,2].

The Mediterranean region is very rich in clover (trifolium) species, especially in Turkey where they are spread out as distinct 103 species. Plants from the genus trifolium have been used in traditional medicine by many cultures. In Turkish folk medicine, some trifolium species such as *Trifolium repens*, *Trifolium arvense*, *Trifolium pratenseare* used as expectorant, analgesic, antiseptic and against rheumatism aches [3].

In this study, clover leaves are used for investigation the total phenolic and flavonoid contents. The antioxidant properties of the water, acetone and methanol extracts were investigated by different antioxidant tests; namely, lipid peroxidation inhibition activity, DPPH radical scavenging activity, ABTS cation radical scavenging activity, ferric ion (Fe^{3+}) reducing power (FRAP) and ferrous ion (Fe^{2+}) chelating activity assay. Total phenolic and flavonoid contents were determined as gallic acid (GAE) and catechin equivalents (CE). Total phenolic content of leaf extracts ranged from 16.67±1.53 to 52.00 ± 0.00 mg/g GAE, while total flavonoid content was 26.02 ± 0.22 – 44.51 ± 0.12 mg/g CE. The results suggest that consumption of clover leaves can be beneficial effects due to its phenolic and flavonoid properties.

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Key Words: *Clover, phenolic content, flavonoid content, free radical, antioxidant.*

Influence of Temperature And The Current Density on The Hardness of The Coatings Obtained in Various Electrolytes Content of Iron Chloride

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According to its chemical composition obtained by electrolytic iron steel deposits is close to the steel with low carbon content 0.03 to 0.06% carbon and it is characterized by specific mechanical properties eg hardness and the wear resistance of the deposited layer, approaching that of the steel deceived.
The nature of the hardness of electrolytic iron has not yet received a satisfactory scientific exploitation.
It must be considered that the external presentation structure, hardness, plasticity and wear resistance of the coating layer varies depending on the conditions of electrolysis in very broad limits.

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Key Words: *bain electrolytique ,électrolyse ,galvanoplastie*

Estimating The Religion of Countries According to Shapes of The Flags Using Support Vector Machines and Kernel Methods

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Support Vector Machine and Kernel Methods

The support vector machine is an elegant and highly principled learning method for the design of a feedforward network with a single hidden layer of nonlinear units. As the name implies, the design of the machine hinges on the extraction of a subset of the training data that serves as support vectors and therefore represents a stable characteristic of the data. The support vector machine includes the polynomial learning machine, radial-basis function network, and two-layer perceptron as special cases. Thus, although these methods provide different models of intrinsic statistical regularities contained in the training data, they all stern from a common root in a support vector machine setting.

One other distinctive property of the support vector machine is that it is a kernel method of the batch-learning kind. In our application we will be using four kernel types which are Linear(1), Polynomial(2), Radial Based(3), and Sigmoid(4).

$$k(x,y) = x^T y + c \quad (1)$$

$$k(x,y) = (\alpha x^T y + c)^d \quad (2)$$

$$k(x,y) = \exp\left(-\gamma \|x-y\|^2\right) \quad (3)$$

$$k(x,y) = \tanh(\alpha x^T y + c) \quad (4)$$

With these functions we are going to estimate the religion of the countries. A part from the data set can be seen in Table1.

Table1. Attributes of Countries and Flags

	Name	Landmass	Zone	Area	Population	Language	Religion	Bars	Stripes	Colors	Red	Green	Blue	Gold	White	Blac
1	Afghanistan	5	1	648	16	10	2	0	3	5	1	1	0	1	1	
2	Albania	3	1	29	3	6	6	0	0	3	1	0	0	1	0	
3	Algeria	4	1	2388	20	8	2	2	0	3	1	1	0	0	1	
4	American-Samoa	6	3	0	0	1	1	0	0	5	1	0	1	1	1	
5	Andorra	3	1	0	0	6	0	3	0	3	1	0	1	1	0	
6	Angola	4	2	1247	7	10	5	0	2	3	1	0	0	1	0	
7	Anguilla	1	4	0	0	1	1	0	1	3	0	0	1	0	1	
8	Antigua-Barbuda	1	4	0	0	1	1	0	1	5	1	0	1	1	1	
9	Argentina	2	3	2777	28	2	0	0	3	2	0	0	1	0	1	
10	Argentine	2	3	2777	28	2	0	0	3	3	0	0	1	1	1	
11	Australia	6	2	7690	15	1	1	0	0	3	1	0	1	0	1	
12	Austria	3	1	84	8	4	0	0	3	2	1	0	0	0	1	
13	Bahamas	1	4	19	0	1	1	0	3	3	0	0	1	1	0	
14	Bahrain	5	1	1	0	8	2	0	0	2	1	0	0	0	1	

This data file contains details of various nations and their flags. There are 30 attributes that represents every country and there are 194 countries. The output will be the religion as you can see in the above in coded, and the other features will be inputs as we use support vector machine and kernel types. The details about the attributes will be on poster. On the next page there is a figure about the estimation comparison of the kernel types

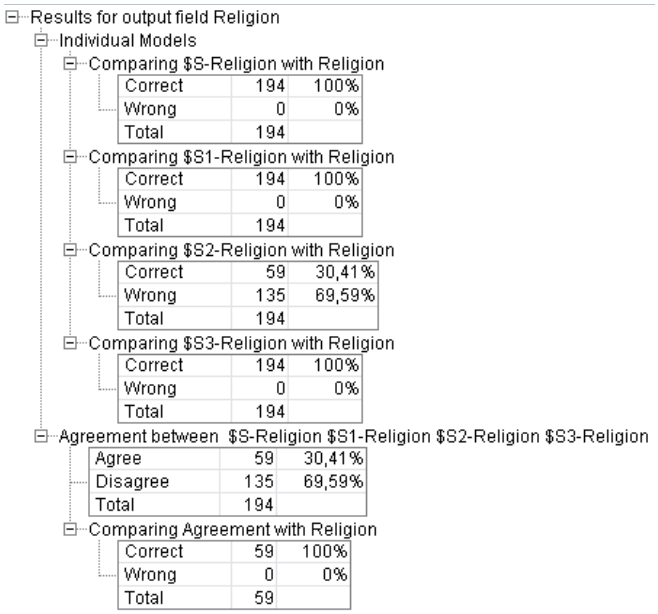

Figure1. Comparing Kernel Types

$S-Religion represents the estimates of Radial Based function, $S1-Religion represents Polynomial function, $S2-Religion represents Sigmoid function, and $S3-Religion represents Linear function. As we can see RBF, Linear and Polynomial function estimates are %100 correct which gives us an excellent estimation accuracy. On the other hand, Sigmoid function made an %30,41 correct estimation which is not so good. The reasons of the bad estimation can be the form of the data set that could not match with the sigmoid function or the stopping criteria, regularization parameter, regression precision, the gamma, and bias could be chosen wrong. Details of this bad estimation accuracy will be on poster. These four kernel types agree on 59 estimations which means they all gave the same output, and this 59 estimation is %100 correct.

Another thing I am going to do is to predict a religion of a country that is not included in the data set using one of these kernel types.

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Key Words: Support Vector Machine, Kernel Types, Data Mining

Detailed Microzonation Studies Around the Gökpınar Dam Lake (Denizli), Turkey

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Detailed Microzonation Studies around the Gökpınar Dam Lake (Denizli), Turkey

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Abstract

This study has been presented which is a detailed work of seismic microzonation of a part of the Denizli city. For seismic microzonation area of 25 km2 has been selected as the study area. Seismic methods have been used to generate one-dimensional shear wave velocity profile at 50 locations and two-dimensional profile at 25 locations. These shear wave velocities are used to estimate equivalent shear wave velocity in the study area at every 2 and 5 m intervals up to a depth of 60 m. Levels of equivalent shear wave velocity of soil are used the classified of the study area. Resistivity method are used for showing the groundwater. After the results of the study, it must be considered as components of urban planning and building design of around the Gökpinar Dam Lake and the application and use of these results should be required and enforced by municipal authorities.

Keywords—Seismic microzonation, Resistivity, liquefaction, land use management

Farklı Sınıf Çimento Harcı Üretiminde Metakaolin Katkısı Kullanımının Araştırılması

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Bu çalışmada, metakaolin ikameli ve farklı dayanım sınıfına ait portland çimentolu harçların fiziksel ve mekanik özellikleri araştırılmıştır. Harç örneklerinin üretiminde; 32.5 ve 42.5'luk olmak üzere iki farklı portland çimentosu kullanılmıştır. Çimentoya ikame edilecek olan metakaolin ise, laboratuvar şartlarında ve kaolen kilinin beş farklı sıcaklıkta (600, 700, 800, 900 ve 1000 ^{o}C) sinterlenmesi sonucunda elde edilmiştir. Sinterlenen metakaolin örneklerine 7 günlük puzolanik aktivite deneyleri yapılmış ve en yüksek puzolanik aktivite indeksi, 900 ^{o}C'de sinterlenen örneklerde elde edilmiştir. Ardından hazırlanan karışımlarda çimentoya, 900 ^{o}C'de sinterlenen metakaolin malzemesi % 10 ve % 20 oranlarında ikame edilmiş ve referans çimento harçları ile kıyaslanmıştır. Harç üretiminde standart kum kullanılmış olup örnekler, TS EN 196-1 [1] nolu standarda göre ve 4 x 4 x 16 cm'lik metal harç kalıplarına vibrasyon yöntemiyle yerleştirilmiştir. Daha sonra örneklere 7 ve 28 günlük su kürü uygulanmıştır. Kür işlemi tamamlanan örneklere; su emme, porozite, birim hacim ağırlık ve görünür yoğunluk gibi fiziksel testler ile eğilme dayanımı ve basınç dayanımı gibi mekanik testler yapılmıştır. Bununla birlikte örneklerin ultrases değerleri de belirlenerek çimento harcı üretiminde kullanılan metakaolin katkısının örnekler üzerinde meydana getirdiği değişiklikler araştırılmıştır.

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Anahtar Kelimeler: *Çimento, metakaolin, standart kum, sinterleme, kaolen*

Beyaz Çimento Harcı Özelliklerine Metakaolin Katkısının Etkisi

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Bu çalışmada, metakaolin katkılı beyaz çimentolu harçların fiziksel ve mekanik özellikleri araştırılmıştır. Harç örneklerinin üretiminde; 52.5'luk beyaz çimentosu kullanılmıştır. Beyaz çimentoda, beyaz renk özelliğinden dolayı her türlü puzolanik madde katkı olarak kullanılamamaktadır. Dolayısıyla katkı olarak kullanılacak puzolanik malzemenin de beyaz renkte olması önemlidir. Bu nedenle ortaya çıkacak ürünün renk özelliğinin bozulmaması için yaptığımız bu çalışmada beyaz renkli kaolen kili hammadde olarak kullanılmıştır. Metakaolin ise bu kilin beş farklı sıcaklıkta (600, 700, 800, 900 ve 1000 ^{o}C) sinterlenmesi sonucunda elde edilen beyaz bir üründür. Sinterlenen metakaolin örneklerine 7 günlük puzolanik aktivite deneyleri yapılmış ve en yüksek puzolanik aktivite indeksi, 900 ^{o}C'de sinterlenen örneklerde elde edilmiştir. Ardından hazırlanan karışımlarda çimentoya, 900 ^{o}C'de sinterlenen metakaolin malzemesi % 10, % 20 ve % 30 oranlarında ikame edilmiş ve referans çimento harçları ile kıyaslanmıştır. Harç üretiminde kırma kum kullanılmış olup örnekler, TS EN 196-1 [1] nolu standarda göre ve 4 x 4 x 16 cm'lik metal harç kalıplarına vibrasyon yöntemiyle yerleştirilmiştir. Daha sonra örneklere 7 ve 28 günlük su kürü uygulanmıştır. Kür işlemi tamamlanan örneklere; su emme, porozite, birim hacim ağırlık ve görünür yoğunluk gibi fiziksel testler ile eğilme dayanımı ve basınç dayanımı gibi mekanik testler yapılmıştır. Bununla birlikte örneklerin ultrases değerleri de belirlenerek çimento harcı üretiminde kullanılan metakaolin katkısının örnekler üzerinde meydana getirdiği değişiklikler araştırılmıştır.

KAYNAKLAR

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Anahtar Kelimeler: *Beyaz çimento, metakaolin, kırma kum, sinterleme, kaolen*

Higher Education And Distance Education Applications in Turkish Universities

-An Analysis on ILITAM (Theology Undergraduate Completing) Programs-

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Abstract

In recent years, a growing interest towards religious education has been observed in the world. Faculties of theology operating in Turkey depending on the universities carry out formal education through two models. The first one is normal/daytime education that is performed in daytime; the other one is evening education that is carried out in evening hours out of working hours. It has been observed that there is a quite considerable interest towards both of these programs. The most basic indicator of that is that quota is completely full (including additional and fill-in placements opened later).

Besides, another program has being applied in the last decade, the number and scope of which has increased. Theology Undergraduate Completing program, ILITAM in abbreviated form… This program is essentially based on undergraduate completing. It is for Theology graduates of Associate Degree Programs of Open Education Faculties, graduates of Vocational School for Theology and Students of Theology Faculties, who have successfully completed the first two years. Theology undergraduate diploma is given to ones, who successfully complete this program. Despite all the criticism, this program continuous to meet the huge demand in the society.

The critics of the program chiefly focus on the point that students that graduate from this program enjoy the same rights with the students of formal education and they obtain a more advantageous position in the graduate education applications and particularly in assignment, although they do not receive an education of the same quality.

In this report, information about the structure, content and functioning of Theology Undergraduate Completing program (ILITAM), the contributions of university and the loop they create for Distance Education Centers will be examined, and the achievements and halting points of this program graduates compared with graduates of other formal education programs will be discussed. By analyzing the structure of the program, actual statistical data will be taken into consideration. Therefore, it is aimed to contribute to discussions and evaluations made upon the applicability and sustainability of the model.

Key Words: ILITAM, Distance Education, Education Technologies, Higher Religious Education, Competences.

The Research of Factors That May Affeect The Success of Distance Education Students on Their Vocational Courses With The Method of Logistic Regression Analysis

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5. Distance Education

Recently, computer and internet technologies are developing quickly and offer an important contribution to the field of education. Today, thanks to ongoing technological developments, distance learning method is becoming widespread as well as formal training [1]. Distance education offers educational opportunities regardless of time and space to individuals unable to find education opportunity due to a variety of reasons in time. In other words, people are able to go on their education on any field they want without affecting their normal work and social environment. In this context, the number of institutions and students enrolled in distance education is increasing in our country and around the world [2].

6. Logistic Regression Analysis and Application

Logistic regression (LR) model is a regression model used when the dependent variable is categorical. In the model, probability of any observation drop into the dependent variable category depending on explanatory variable values is calculated. Categorical dependent variable models are widely used by researchers in all areas particularly the social, educational and health sciences.

The purpose of using LR analysis is to establish an acceptable model in which the relationship between dependent variable and the group of independent variables (explanatory variables) is described by using least variables with the best consistency [3, 4].

Binary LR model is used in situations where categorical dependent variable is one of the two-states (disease yes-no, success good-bad, drugs effective-ineffective). In the two-level LR models, categorical dependent variable (Y) has two states as happening of an event (Y = 1) and the not happening (Y = 0).

Depending on the values of the independent variable (x), the mathematical equation for the the probability of *i*th observation equals to the dependent variable's encoded level of "1" is described as:

$$\pi(x_i) = \frac{e^{\beta_0+\beta_1X_1+\cdots+\beta_nX_n}}{1+e^{\beta_0+\beta_1X_1+\cdots+\beta_nX_n}} \quad (1)$$

To estimate the parameters in the model, the Li function which is linear according to x and its parameters is written as:

$$L_i = \ln\left(\frac{\pi(x_i)}{1-\pi(x_i)}\right) = \beta_0 + \beta_1 X_1 + \cdots + \beta_p X_p = X_i'\beta \qquad (2)$$

and this model is called "Logit Model".

Here, β_0 is the constant term, $\beta_1, \beta_2, \ldots, \beta_p$ are the regression coefficients, $X_1, X_2 \ldots, X_p$ are independent variables, p is the number of independent variables and $\pi(x_i)$ is the probability of the *i*th event being happened [3, 4].

The spread of distance education raises the questions of what factors affects the quality and training in education. Many studies have been conducted on the factors affecting the success in distance education. In this study, the group of 56 students studying in computer programming section of Kırıkkale University Distance Education Centre (KUZEM) has been selected as the sample group. The basis of the study is to investigate the factors affecting the success of vocational courses of the students selected as sample. For this reason, a questionnaire has been conducted for students about the factors considered to influence their success on vocational courses. The questionnaire questions are divided into several groups in order to measure the demographic characteristics of students, the level of computer use, time spending period with computer, motivation and personal development levels. Data collected by questionnaire were analyzed using the SPSS package. Analysis results of the average achievement scores of students are given in tables first. Then students are selected as successful or not successful as dependent variables by converting these points and then 15 variables are defined as the independent variables such as demographic characteristics of students, motivation and personal development levels, cases of computer and internet usage, operating system usage levels and the factors thought to influence the success are searched by "forward selection" and "backward elemination" methods of "stepwise" variable selection method used in Binary LR analysis and finally model was established with the "Enter" Method and the results are given. In the conclusion part of the study, based on data obtained, suggestions are offered to Kırıkkale University KUZEM unit.

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Key Words: *Logistic Regression, Odds Ratio, Distance Education, Student Success*

Approximate Algorithm for Unconstrained (Un) Weighted Two-dimensional Guillotine Cutting Problems

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Many problems of operations research and artificial intelligence can be defined as combinatorial optimization problems. Among these the area of the cutting problems has been intensively studied in the last time. The two-dimensional cutting problem consists of cutting a rectangular plate into smaller pieces of fixed dimensions and utility values in such a way as to maximise the sum the utility values of the produced pieces. A set of smaller pieces defines a cutting pattern if these pieces can be produced by sequence of possible cuts on the rectangular plate. All the produced pieces that differ from the fixed smaller pieces are considered as waste. In this paper we propose an approximate algorithm for solving both unweighted and weighted unconstrained two-dimensional guillotine cutting problems. The original problem is reduced to a series of single bounded knapsack problems and solved by applying a dynamic programming procedure. We consider a procedure to generate initial feasible pattern. Firstly two one dimensional knapsack problems are solved for constructing sets of different horizontal and vertical strips. Secondly, by solving two other one dimensional knapsack problems, we combine the horizontal and vertical strips for giving two different cutting patterns.
All knapsack problems are solves by using dynamic programming We evaluate the performance of the proposed method on instances taken in the literature.

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Key Words: *guillotine cutting, dynamic programming, knapsack problem.*

Tax Expenditures in OECD Countries And Turkey

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Tax expenditures, in the widest sense, are taxes of which collections are waived for a variety of reasons. Appearing as a result of economic, social, fiscal and so on reasons, tax expenditures are exercised as a tool of effective policies at the present time.

Tax expenditures may be manifested as exclusions, exemptions, allowances, tax credits, preferential tax rates or tax deferrals; however, it is inappropriate to describe every tax concession as a tax expenditure.

While tax expenditure reports were prepared only in USA and Germany in the late 1960s, they were also prepared in Austria, Canada, Spain and Great Britain in 1970s; and Australia, Belgium, Finland, France, Irland, Italy, Netherlands and Portugal in 1980s.

At the present time, however, the importance of the tax expenditure reports are generally accepted by all countries. Nevertheless, there are some differences between countries in terms of measurement of tax expenditures. For example, while preparing tax expenditures reports is a legal obligation in USA, Germany, Austria, Australia, Belgium, France and Italy, it is not in Netherlands and Canada. On the other hand, the reports are prepared anually in countries such as USA, Austria, Australia, Belgium, Canada, France, while it is prepared biennially in Germany, and sporadically in Italy. There are also other certain differances regarding tax expenditures reports being connected with budgeting process. The tax expenditure reports are entirely connected with budgeting process in Belgium, Finland, France, Portugal and Spain. However, Germany and Austria prepare subsidy reports. As for other countries, tax expenditure reports are generally prepared as unique documents. In the USA, tax expenditure report is prepared as a part of budget, but it is not included in budgeting process. In Turkey, on the other hand, tax expenditure report is a legal obligation. Besides that, tax expenditures are anually reported within the budget act particularly.

Along with tax expenditure reports, also measurment of tax expenditures has become important from the point of countries. Tax expenditures can be estimated through three different methods: the revenue foregone method, the revenue gain method, and outlay equivalent method. Most countries -including Turkey- estimate tax expenditures by using revenue foregone method which is the simplest.

This study examines tax expenditures, tax expenditure reports and measurments of tax expenditures in both Turkey and OECD, and considers similarities and differences.

Key Words: *tax, tax expenditures, OECD*

Stratejik Planlamanın İşletmelerin Karar Verme Düzeylerinde Kullanımı

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İnsanın her eylem ve davranışı, bilinçli veya bilinçsiz şekilde verilen bir kararın yansımasıdır. Karar verme, insanoğlunun hayatının her aşamasının vazgeçilmez bir parçası ve sürekli olarak karşılaştığı bir olgudur. Karar verme, sorun çözme ve çevrenin sunduğu fırsatları tanımlama sürecidir.

İşletmelerde; stratejik planlama, yönetsel kontrol ve işlemsel kontrol olarak sıralanabilecek üç ayrı düzeyde karar verme aşaması yer almaktadır. Bunlardan stratejik planlama, işletmeyi çevresiyle ve iç faaliyetleriyle ilgili bir bütün olarak gören en üst organizasyon seviyesinde oluşur ve işletmenin misyonunun belirlenmesi, uzun vadeli amaçlarının oluşturulması, bu amaçlara ulaşmak için gerekli olan faaliyetlere ilişkin seçeneklerin saptanması için alınacak kararlarla ilgilidir.

Bu çalışma kapsamında; ticari bankalarda stratejik planlama ve stratejik planlamanın karar alma sürecindeki yeri incelenmiştir. Ayrıca uygulama çalışmasında bu sistemin uygulanırlığı analiz edilip işletmeye sağladığı olanaklar ve sakıncalar ortaya konulmaya çalışılmıştır. Karar verme tekniğinin önemi ve güncelliği vurgulanmış ve yaygınlaştırılmasında literatüre katkı sağlanması amaçlanmıştır.

Anahtar Kelimeler: *Karar verme, strateji, planlama, stratejik planlama*

A New Loan Payment Model Under Consediring on Rhythmic Skips And Variable Installments

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The problem of a loan payment with installments is based on the equality of the present value of the loan with all payment values. Nowadays, the periodic level payment model is the most widely used loan payment model by banks. In addition, the periodic geometric and linear gradient payment models are available in the financial mathematics books. The arbitrarily skip periodic level (or equal) loan payment model was firstly developed by Formato (1992). Formato's model was extended to the geometric gradient loan payment model by Moon (1994) and the arithmetically linear gradient model by Eroglu and Karaoz (2002). This loan payment models that have periodic level and geometric gradient series payment with rhythmic skips instead of arbitrary skips have been discussed by Eroglu (2012) and Eroglu et al. (2013).

In this study, the generalized formulae have been derived for a new loan payment model under considering on rhythmic skips and variable installments levels which determined by customers. Numerical examples are solved to show the practical application of the developed payment models.

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Key Words: *Loan payment, Rhythmic Skips, Variable Installments*

Türkiye'nin Resmi Kalkınma Yardımları Politikası: Eğilimler ve Hedefler

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Dünyanın bütün ülkelerinde yoksulluk vardır. Ancak, diğerlerinden daha fazla yardım yeteneğine ve yardıma ihtiyacı olan ülkeler de bulunmaktadır. Kalkınma için işbirliğinin amacı, fakir ve az gelişmiş ülkelerde uzun dönemli sosyal ve ekonomik insani kalkınmayı teşvik ederek dünyada barış ve güvenliği sağlamaktır. Sürdürülebilir kalkınmanın finansmanı kamu ve özel akımları içeren iç ve dış kaynaklardan oluşmaktadır. Küresel olarak, resmi kalkınma yardımları (RKY) gelişmekte olan ülkeler için önemli bir kamusal kaynak olmaya devam etmektedir.

OECD Kalkınma Yardımları Komitesi (DAC), RKY'nın temel sağlayıcısıdır. Günümüzde, DAC ülkerleri dışında olan ülkelerden sağlanan RKY miktarı artmaktadır. Türkiye'den sağlanan RKY son yıllarda önemli ölçüde artmıştır ve Türkiye gelecekte de dış yardımlarını artırmayı planlamaktadır. Kalkınma işbirliği alanında Türkiye'nin çabaları yoksulluğun ortadan kaldırılması ve sürdürülebilir kalkınmayı amaçlayan küresel çabalara olan bağlılığını yansıtmaktadır.

Bu çalışma, uluslararası kalkınma işbirliği aktörü olarak Türkiye'nin artan rolünü incelemektedir. Çalışmada Türkiye'nin RKY sağlayıcı ülke olarak değerlendirmesi yapılacaktır. Bu bağlamda, Türkiye RKY programı ve stratejisi incelenecektir. Bu çalışma ayrıca, Türkiye'nin RKY sağladığı ülkeleri ve Türkiye RKY'nın bölgesel dağılımını göstermeyi hedeflemektedir.

Key Words: Küresel İşbirliği, Küresel Kamu Malları, Resmi Kalkınma Yardımları, İnsani Yardımlar.

Statistical Analysis of Students' Opinions About The Efficiency of Web-Based Distance Education System

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1. Distance Education and Web-based Distance Education

The whole lot of the practices which are being carried out in the medium where the tutors and students are independent of each other in terms of space and time are defined as "distance learning" [1] Distance education System makes use of technology in the mass education and also, it offers a self-learning opportunity through the individualized education and training activities [2]. Distance education adventure starting with correspondence is developed by means of the technological opportunities.

Students and teachers carry out the training activities together with each other according to the traditional formal education method. One is required to allocate all his/her time and cash resources in order to attend the kind of education activity pushing all of his/her other responsibilities into background. This necessity limits the target group of the education and in fact, makes the education an activity which can be performed by the young getting ready for the life.

The most important advantages of Web-based Distance Education System is to constitute virtual campuses and to allow the asynchronous education. The students can reach the system and the content whenever they want and benefit from all the content that they want. These flexibilities set an appropriate model with their cost advantages [3]. The new ones were being added to the existing distance learning institutions along with the increasing number of universities and students demanding distance learning and with the developing of the information technologies and this has made the researches on the efficiencies of the distance learning systems more important.

2. Application

The aim of this study is to make the students evaluate the distance learning system used in order to instruct the mutual lessons (Turkish Language, Ataturk's Principles and Reforms) being taught in Hitit University in 2013-2014 academic year, to analyze the efficiency and to improve the distance learning system in consequence of the findings, accordingly. The survey method has been used in order to measure the students' perception about the distance learning and to assess the distance learning system.

The sampling of the study has been formed by 321 students chosen randomly and homogenously from 4000 students studying actively at vocational high schools, high schools and faculties within Hitit University.

Table1. (School information of the students joining the survey)

Type of School	Frequency	Frequency %
Faculty of Arts and Sciences	50	15,6
High School of Physical Education and Sports	18	5,6
Engineering Faculty	14	4,4
Vocational High School	50	15,6
Osmancık VHS	42	13,1
Alaca VHS	24	7,5
Sungurlu VHS	66	20,6
Faculty of Economics Administrative and Social Sciences	29	9
Faculty of Theology	28	8,7
Sum	321	100

Most of the articles in the survey, which was developed in order to determine the students' opinions and expectations related with the distance learning activities, have been prepared according to 5 point Likert scale. The articles left unanswered or marked more than one by the survey participant haven't been assessed.

In the survey, some questions have been addressed to the students about the subjects such as their motivations, their manners against the instructors, their consideration on the content of the lessons, their perception of the distance learning unit, their accessibility into the distance learning software and their comparisons between formal and distance learning systems in the process of their distance learning activities and the answers have been recorded. The answers of the students have been analyzed in the computer environment via SPSS data analysis software program. Frequency distribution of the answers in the process of analyzing have been calculated, the relations have been examined using chi-square analysis test and interpretations have been made on the results obtained. Also, the reliability and factor analysis has been performed. In the consequence of this analysis the reliability co-efficient of Distance Learning Scale has been calculated as 0,885. Dimension reduction have been made applying a factor analysis for the questions related to the Distance Learning Scale involved in the survey. It has been detected that there was a meaningful correlation between the variables according to the significance values of Bartlett Security Test ($p>0.05$). It has been detected that the scale had been suited for the factor analysis at the rate of %94 according to Kaiser-Meyer-Olkin (KMO) statistics. In the consequence of factor analysis it has been identified that Distance Learning Scale could be explained by two factors. As a result of the analysis some solutions have been offered for the problems encountered in the distance learning applications and some suggestions have been made for the mutual lessons being taught particularly in the universities.

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Key Words: *Efficiency of Distance Education, Web Technologies, Productivity.*

A Comprasion of Some Meta-Heuristics Optimization Methods For Parameter Estimation in Logit Model With an Application to Vitiligo Disease Risk Factor

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1.Parameter Estimation in Logit Model with classic and metaheuristic methods.

Statistical analysis of categorical data are used in almost all applied sciences. Dependent variables in most studies of health science are categorical variables with two or more levels. Logit Model (LR) analysis is often used and referenced in order to determine factors which affect disease severity (less-moderate-severe), tumor grade (I-II-III) or whether a drug treatment is effective or not [1,3]. Some interpretations which constitute the basis of the study can be made based on the statistically significant estimates of β parameters (exp β) obtained as a result of LR model. Accordingly, these parameter estimations are important parts of LR analysis. In literature, most common method used for estimation of LR models' parameters is the Maximum Likelihood Estimator (MLE). In this method, y_i is the dependent variable which takes 0 or 1 for (i=1,2,3,…,n), x_i represents the independent variable's value for i. observation and the $\pi(x_i)$ statement in equation (1) gives the conditional probability of y given r x values and in Equation (2) gives the likelihood function.

$$\pi(x_i) = \frac{e^{\beta_0+\beta_1 X_1+\cdots+\beta_n X_n}}{1+e^{\beta_0+\beta_1 X_1+\cdots+\beta_n X_n}} \quad (1)$$

$$L(\beta) = \ln[l(\beta)] = \sum_{i=1}^{n}\{y_i \ln[\pi(x_i)] + (1-y_i)\ln[1-\pi(x_i)]\} \quad (2)$$

Equation (2) with estimates of the model parameters that maximizes the likelihood function, which is based on a classical optimization methods and iterative Newton-Raphson (NR) is done by algorithm. In this study, L(β) is, an optimization problem, optimized parameters to be estimated with the heuristic algorithms that do not use derivatives Genetic Algorithm (GA), Simulated Annealing (SA), Particle Swarm Optimization (PSO) and Differential Evolutionary Algorithm (DEA) [2,4] and the results were compared in terms of parameter estimation value, optimum function value and convergence rate (number of iterations).

2.Application

In the application, using laboratory data of patients, first, for Vitiligo disease, which is a skin disease, the risk factors were investigated, then the odds ratio of finding was obtained. Later the advantages or disadvantages of metaheuristic methods to the classical methods were investigated. The data set used in this study was obtained from Dermatology Unit of Training and Research Hospital, Hitit University. From patients who applied to Dermatology Unit with

Vitiligo problem and diagnosed with Vitiligo, 32 were assigned to experimental group and 85 patient who were not diagnosed with vitiligo were assigned to control group. The research consists of a total of 117 patients' data. The binary dependent variable examined in the study is the "Vitiligo Diagnosis" and the patients' laboratory test results; ALT, AST, Glukoz, HDL, Kolesterol, LDL, Free t3, Free t4, TSH and Trigliserid were taken as explanatory of disease independent variables. As a result of LR Analysis, only the level of AST on Vitiligo disease is a statistically significant effect ($p=0.01<0.05$) was seen (Table1) and AST level increases, individuals were increased probability of having Vitiligo were reached (odds ratio = 1.167). When the observation of AST variables examined, according to AST variables between the two groups was determined to be statistically significant ($p=0.005<0.05$) (Figure 1).

Table1. (The Results Obtained with the NR Algorithm in LR Model)

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
ALT	-,070	,040	3,133	1	,077	,932
AST	**,155**	**,060**	**6,643**	**1**	**,010**	**1,167**
Glukoz	,009	,007	1,347	1	,246	1,009
HDL kolesterol	-,112	,062	3,280	1	,070	,894
Kolesterol	,071	,054	1,705	1	,192	1,073
LDL kolesterol	-,063	,055	1,331	1	,249	,939
t3	-,037	,413	,008	1	,928	,963
t4	,751	1,103	,464	1	,496	2,120
tsh	,055	,135	,164	1	,685	1,056
Trigliserid	-,010	,012	,767	1	,381	,990
Constant	-4,228	2,429	3,031	1	,082	,015

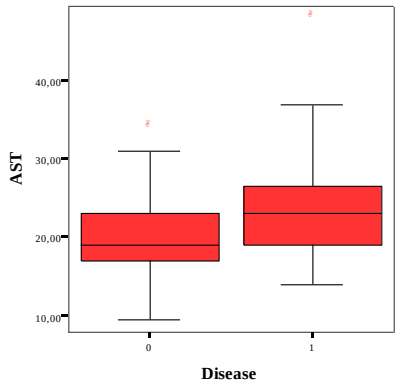

Figure1. (AST values of the control and experimental group)

In the first part of the research statistical findings are discussed. In the second part of the research, likelihood function, which observation data obtained by writing the equation given in Equation (2), by optimizing parameters were estimated with some metaheuristic optimization algorithms. Subsequently the classic and metaheuristic methods are discussed of success for parameter estimation in logit model.

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Key Words: *Logistic Regression, Parameter Estimation, Odds Ratio, Meta-Heuristics Algorithm, Vitiligo.*

Developments in Turkey's Foreign Trade Structure Related to Proximity in 2000 And After Period: A Critical Look

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Abstract

As a result of the spread of liberalization and the creation of new institutions related to world trade the balance of world trade has also reshaped. The competitive and sharing-oriented foreign trade structure created by the global economic system forced the countries to be effective not only on their internal economic systems, but also against foreign economic systems. The impacts of free foreign trade on economic development of countries which have been a matter of debate since Adam Smith more intensified particularly after 1980s. The mentioned period in which the wave of globalization affect the whole world Turkey has also implemented policies related to free foreign trade. In consequence of developments in the sake of free market economy and spreading to foreign markets particularly after 1980s, Turkey has made a significant progress in the world market including the particular region and Europe. Particularly in 2000 and after period associated with the providing the political stability in Turkey and the desire of being a global player in foreign countries revealed a logic of foreign trade aimed Middle East and Africa.

In this context, the purpose of this study is to evaluate the changes and developments associated with the effects of globalization in 2000 and after period in Turkey's foreign trade structure in the scope of Near East and Middle East countries.

Key words: *Turkey, Foreign Trade, Globalization, Free Market Economics, Middle East.*

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Towards Efficient Sustainability

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The interest of this paper is to examine the efficiency of the existing sustainability measuring tools on the countries that have heritage and culture bases. This is to be able to create sustainable designed buildings satisfying the community social culture needs as the research argues that there is a misleading conjunction for sustainability with environmental concept as a single standing concept without the other two dimensions.

The overall driver of human impact on Earth systems is the destruction of biophysical resources, and especially, the Earth's ecosystems. The total environmental impact of a community or of humankind as a whole depends both on population and impact per person, which in turn depends in complex ways on what resources are being used, whether or not those resources are renewable, and the scale of the human activity relative to the carrying capacity of the ecosystems involved. [1]

The search for sustainability has been entwined with the quest for sustainability assessment methods, metrics and tools as instruments to operationalize the concept of sustainable development. [2]

This paper examines international rating tools for sustainable buildings and recent global trends. A rapid increase has been observed in the number of sustainable buildings entering the UAE real estate market. Unfortunately many of these tools differ considerably with regards to what they actually assess, how they operate and whether they can be compared directly with assessment tools from other countries. It is important to undertakes a unique international assessment of global sustainability tools and critique their individual strengths and weaknesses.

The aim of this research is to develop effective sustainable rating method criteria for buildings in UAE. Developing such criteria is gaining significance in UAE as a result of increased awareness of the environmental, economic and social issues. As well as to define new assessment criteria relevant to the local conditions of UAE with a review of literature has been conducted, and the findings have been analyzed. This will allow an exploration of the suitable criteria for developing a sustainable rating method for buildings in UAE. [3]

The final research findings will be presented as suitable criteria for developing a sustainable building assessment method for UAE in terms of environmental, economic, social and cultural perspectives.

In conclusion an assessment method which could be applicable in one country may not be applied in other, and Developing a new assessment tool in the area of sustainable development requires a strategic methodology for a cohesive and logical framework incorporating relevant theory and practical experience, to measure performance in a consistent manner with respect to pre-established standards, guidelines, factors, or other criteria. Sustainability assessment practitioners have developed an increasing variety of tools.

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Key Words**:** *Sustainable Buildings, Sustainability tools, rating methods, Culture and Heritage*

Sustainable Educational Structures

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1. Sustainable Educational Structure

Students use educational structures starting from preschool well into higher education. Structural qualities of schools directly influence students' opportunity to receive education in a healthy environment. Sustainably designed education structures increase students' potential to learn and help in their healthy development. Also called *green schools*, these structures save energy, resources and money and facilitate a healthy learning environment. Structures that make individual learning easier enhance creativity and support problem-solving skills prepare students for a sustainable life. The matter of designing of green educational structures involves thinking globally and locally. Thinking globally means contributing to resource management and credit out to the needs of future generations. Thinking locally means taking health, safety and welfare of the community, which includes students, teachers, managers, assistant staff and visitors, into consideration. (1) It is only by integrating economic, social and ecological sustainably into the design process as in a balanced manner as possible can educational structures are designed according to sustainable design principles. (2)

1.1. Economic Sustainability of Educational Structures

Economic sustainability of educational structures requires minimization of lifecycle costs, which consist of construction, operation and destruction after use. There are precautions to be taken during the design process to reduce operational costs of structures. First of all, the building should be positioned in a location that makes the best use of land's positive attributes and sunlight. During the design process, designing of a building envelope and window systems that preserve energy gains importance. Renewable active (solar collectors, photovoltaic systems) and passive energy systems (solar energy, greenhouses, roof windows) are preferable. Material should be local, accessible with no need for maintenance and repaid. Water preservation is should be considered as well.

1.2. Ecological Sustainability of Educational Structures

Contemporary approaches to educational structure design include: environmentally conscious layout plan design, renewable energy systems and energy-effective technology use, environmentally conscious construction material and elements, water preservation strategy considerations, and choosing of relatively less polluting transportation alternatives. (3)

1.3. Social Sustainability of Educational Structures

In order for educational systems to be planned according to sustainable design principles, economic, social and ecological sustainability must be integrated into the design process in a balanced manner, thusly improving educational performance. Moreover, design

should support social values, allow integration into the society and be a sustainability education tool for users and the society.

1.3.1. Improving Educational Performance with Healthy, Safe and Comfortable Education Structure Design

The most important elements that increase educational performance and reduce discontinuance of students are natural lighting of spaces and high indoor air quality. Moreover, acoustic comfort and furniture and interior design ensure the security of students gain importance. It is known that natural lighting initiates vitamin D production process in the skin, concentrate enzyme expression processes within the metabolism, increase hormone activity and develop central nervous and muscle systems. (4) Controlled natural light levels increase learning productivity, the ability to concentrate and class participation. So, window bays of various shapes and heights have been designed in order to allow the natural light in most effectively. Excessive sunlight can be controlled with the light shelf method by distributing the light and preventing glare. Indoor air quality is important in educational structures because it determines the health and productivity of students and teachers. Children breathe faster than adults and are more susceptible to negative effects of air pollutants. Medical problems defined as the *sick building syndrome* that affect students and teachers in schools are fatigue, drowsiness, dizziness, visual sensitivity, headache, sinus congestion, flu, common cold and allergy-type findings. The sick building syndrome occurs when ventilation systems are not cleaned, high-insulation joinery is used, expired air inside is not replaced with clean air, spaces are overused, and pollutant materials spread from materials. Spaces should be designed in a manner that allows natural ventilation and airstreams should take clean air in the expired air out. Collapsible joinery and ventilation pipes help ensure natural ventilation without energy use. If the air inside the structure is not replaced frequently, toxic materials accumulate and oxygen ratio goes down. Consequently, headache, fatigue, respiratory distress, decrease in infection resistance and acute and chronic diseases may occur. Pollutants in the indoor air are classified as chemical, biological and particle pollutants. Volatile organic compounds are the foremost chemical pollutants that spread from material to the space in the form of toxic gas. Materials like paints, varnish, polish, composite wood, solvents, insulation materials, wallpapers, laminates, vinyl and carpets containing volatile organic compounds (VOC), such as benzene, formaldehyde, xylene, and toluene, should not be used in schools. Water-based paints should be used instead of paints with solvents, lead and asbestos. Chemical cleaners and office tools are also classified as interior air pollutants.

Particles that settle in the lungs through inhalation or swallowing have chronic effects on respiration. Particles like asbestos, glass wool and stone wool threaten human health. Also, biological molds and fungi spread from materials that susceptible to humidity and are not ventilated adequately. Maintenance operations must be performed regularly in order to prevent these outcomes. Dead molds as well as living molds present danger and it is wiser to ensure they don't occur in the first place, rather than removing the already formed molds, in terms of indoor air quality. Maintenance of HVAC (heating, ventilating, air conditioning) systems must be carried out and filters must be changed regularly in order to provide a sufficient level of ventilation. It is also important to clean floorings regularly while minimizing the use of toxic cleaning detergents in terms of maintaining high indoor air quality. (5) The use of diffusing material is extremely important in ventilation. Oil paints, plastic-based materials, and synthetic materials used for heat insulation and waterproofing trap steam, preventing streams and air change. Teacher's voice should make it to students in back rows in order to ensure acoustic comfort in a classroom. Moreover, acoustic comfort is important for students to easily communicate with each other. Acoustic insulation is necessary to reduce outside noise.

1.3.2. Integration of Educational Structures into Society with Design

The main condition for educational structures to efficiently integrate into the society is to position them convenient locations near settlements. Access should be available to educational structures by foot or on bicycle and these roads should be separated from traffic way. Sports halls, libraries, open spaces, meeting halls and classrooms of the school should be designed in a way that communes with society using necessary safety measures in order to ensure social sustainability. Social integration is only possible if educational structure designs take the expectations and needs of local residents into consideration during the development process. Schools can be used as shelters from natural disasters like earthquakes and floods.

1.3.3. Educational Structures Reflecting Social Values through Design

It is important for educational structures to reflect social values through their design. Social conditions and requirements depend on the location of the structures. So, a school in a large city and a school in rural areas give different messages. Educational structures should reflect local and general social history. Also, they may contribute to local economy by utilizing local materials and local craftsmanship during design, application and maintenance processes. The use of local material also reduces the distance material has to cover.

1.3.4. Educational Structures as a Sustainability Educational Tool for Users and Society

Sustainable design turns educational structures turn into educational tools. Students and the society experience and learn about sustainability while using the structure. For instance, use of solar and wind energy systems teach students about clean energy sources and hardware that utilizes them. Cisterns that store rainwater outside the building and echo-gardens may be regarded as three-dimensional educational tools. Natural lighting and ventilation, use of clean energy sources and energy saving, and visible systems that indicate to the amount of energy consumed by the building are important for education and awareness. Recycling systems can be installed in order for students to participate in the process.

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Key Words: *Sustainable Educational Structures, Green School, Social Sustainability.*

Passive Cooling Strategies in Greening Existing Residential Building in Hot Dry Climate: Case Study in Bahrain

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Abstract

Recently, human comfort starts gaining significant importance in the field of green and sustainable design. Though, mechanical ventilation used to be the first conventional aid to create thermal comfort but its energy intensive and very harmful impacts to building tenants and ecological system. Therefore, passive-cooling strategies can be a cost effective alternative to active conventional cooling systems.

This paper will evaluate several passive-cooling technologies or design features that can be adopted to reduce the building heat gain without the need of excess energy consumption with reference to hot arid climate condition in Bahrain. A typical residential building was selected as a case study and three passive cooling strategies that are enhancing the building envelop in walls, roof and windows, as well as using appropriate shading devices and green roofing system that proven to be a good roof insulator and overall environmental quality improver. IES energy simulation software will be used to assess and evaluate the performance of the building.

The study is anticipated to reveal number of significant findings in reducing the energy consumption and enhancing the tenants thermal comfort based on the comport zone standards specially via improving the performance of the building envelop that acts as building skin because it's the interface between internal and external environment. Finally, it could be argued that results of this paper will not only be applicable to Bahrain but many countries that have similar climatic and environmental context.

Keywords: Passive cooling, Thermal comfort, energy efficiency, IES software, Bahrain, Residential building, hot dry climate.

Bubble Facades

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The presentation describes the process of designing and building facade cladding based on the study of two-dimensional and three-dimensional geometry of soap bubbles and glycerin. The content of the display is divided in two parts.

The first describes the procedure for obtaining real geometries soap bubbles through experimental processes. Bubbles are made in the interior of a transparent container methacrylate sectioned such that bubbles are obtained by plexiglas container. These planes of bubbles are photographed and then obtaining digitized 2D planes of bubbles. The design ends with the translation of the planes computer formats compatible with the process of laser cutting of sheet steel black reproduced 1: 1 scale digitized images of sectioned bubbles. Each of the resulting sheets are placed on the base at preset positions facade design. Final steel sheet is treated with three layers of corrosion protection and the surface of the front base is treated with a reflective paint. Sunlight by day and artificial light at night LED allow playback of reflection effects typical of soap bubbles.

The second part describes the process of designing pieces that simulate bubbles concrete condition as three-dimensional patterns of Penrose mosaic. These pieces are built experimentally in a first phase of work, resulting in prototypes made with wooden boards, stretch fabrics together with wood and injection between the fabric and wood with polyurethane foam. Prototypes obtained for 3D scanning subsequently be digitized and redrawn to obtain a 3D digital experimental prototype design. Digital design serves for manufacturing a resin mold that allows the construction of the final containers on the concrete parts of the final facade cladding is poured. These containers are made of thermoformed PVC. The concrete used to manufacture the parts graphene contains additions of glass fibers and for assembly. Finally obtained concrete parts are placed in the preset position in the mosaic design and attached to the base of the facade formed by mechanical means with stainless steel pins. The surface treatment of these parts is formed by reflective paint to reproduce reflexes, patterns and colors of soap bubbles under natural light. The mosaic that forms the cladding is completed by combining ceramics and wood.

Key Words: *Experimental, Design, Facade, Bubble.*

Investigation OF Refurbishment Made in Residences in Terms of Sustainability

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The usage period of residences is quite long and during this time, it is necessary to change, for various reasons, the building materials and components. The reinforced concrete structures would be designed for the longest life +50 years. Exterior surfaces change about every 20 years. Wiring, plumbing, and other surfaces tend to wear out or go obsolete every 7 to 15 years. Interior walls and other elements of the floor plan tend to change every few years in some buildings [1].

It has been observed that, especially in residences in Turkey, frequent refurbishments are done. This causes raw material consumption and construction&demolition waste. The methods, which are the basis of sustainable development and cover subjects such as energy saving, natural resources saving and waste reduction, make up the agenda of modern architecture as well. The primary environmental target regarding this subject should be the prevention and reduction of raw material consumption and construction&demolition generation. In this study directed for this purpose, research was conducted on the usage period and the reasons for refurbishments made in residences in Turkey. A survey was conducted in Istanbul to serve the purpose of this study. The surveys was conducted by interviewing 180 homeowners living in different parts of Istanbul that exhibit a homogenous socio-economic and socio-cultural make up and live in residences that were designed and built for non-specific dwellers. The aim of the survey is to determine information under the following topics:

- The reasons for the refurbishments.
- The refurbishments done during the usage period of residences that leads to the generation of construction&demolition waste and raw material consumption.
- The refurbishments focus on which kinds of building materials/components.

It is vital to be aware of these reasons in order to come up with solutions towards reducing construction&demolition waste, preventing raw material and sustainability during the refurbishment of residences. When 2/3 of material generated by refurbishments would be removed to the landfill, there will be environmental pollution and economical loss. Evaluation or disposal process of the mentioned amount of material is unknown. Therefore, issue of preventing uncontrolled waste and recover of them becomes more important. Regulations regarding these subjects should be obeyed and waste management should be applied. In this manner, governments, municipalities, designers, contractors and users should have taken responsibilities.

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Key Words: *Refurbishment, sustainability, construction&demolition waste, raw material consumption.*

The Way People Determine The Future of The Cities: Local Elections

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7. Introduction

The city is a product of the common living. The city is the main issue for all social groups and habitats. Basic needs are met in the city and ve this concerns all social groups. (Castells,1997) The general policy is unavoidable impact on local politics. However, the local power structure is important in making decisions at the local level. (Çukurçayır,2008) Economic or political relations between the powerful groups in local politics is important. In this context, it is important who directed the local politics.(Varol, 2000) Therefore, given an extremely value to the local elections in Turkey.

8. Objectives and Methodology

The aim of this research paper is to analyse the criteria on which people make decisions in local elections and the indicators which show the success of the local authorities. The target group is people who live in İstanbul Kadıkoy-Fenerbahçe neighbourhood. To gather data a survey was given to 295 participants. Fenerbahçe neighbourhood population is 25.170. According to information received from reeve; the number of voters in local elections (March-2014) is 17.000 persons. There are 59 streets in the neighbourhood. The sample group was formed of 295 people, with 5 surveys in each street. The participants have been chosen randomly. The study is descriptive type.

9. Findings

A survey has been given to 295 people living in the neighbourhood. 148 (50,17%) of the participants were men. 147 (49,83%) of them were women. 114 (% 38,64) of the participants were between 35-54 years old. As for the educational backgrounds of the participants the largest group consists of 129(%43,73) university graduates. When we investigated the income of our participants; the largest group consists of 105 (%35,59) with 5001-7500TL. monthly income. The neighbourhood is a tendency for such long time sitting. The 8th question of the survey is participants' choosing criteria for mayor. The most important criteria are the project of the candidate and reliability. As can be seen here, people's urban mayor selection criteria are not political; service-oriented. The most common answer to the question: "What do you think the mayor indicator of success?" was "justice in zoning decisions". The number of people who think that the success indicators of green space arrangement are 266.

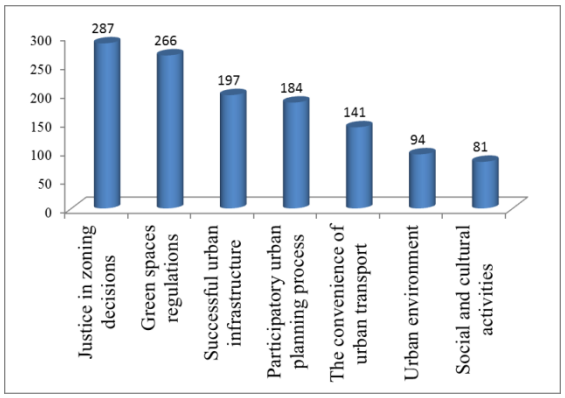

Figure 1. Success indicators of urban mayor

When the participants were asked "How people can contribute in order to beautify the city?" the answers were as follows: 143 persons attending city council meetings to present ideas; 116 participants report ideas and complaints to the municipal authorities. Vote is the third most frequent answer. In other words; according to the participants, active local participation methods is more important. Participatory urban management process is open to the general public. Local elections are a part of participation mechanism.

10. Discussion and Conclusion

Urban society is a heterogeneous structure. Different interest groups and voter expectations are forcing local administrators to improve themselves. If the correct understanding of the structure of local voters, electoral success is affected. The selection of local administrator not only the cities; It also affects a broad range of countries. Vote, is not sufficient to fulfill the duty to the city. (Cochrane, 2007) According to the results of our survey; the majority of our participants are sufficient information in terms of urban politics. They carry the spirit of participation; respect the interests of the city in elections. Participants have the information about joining the council. Urban consciousness of Kadikoy Fenerbahçe neighbourhood seems high.

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Key Words: *Local Government, Urban Policy, Participation, Governance*

Time-Space Relationships in Traditional Tarakalı Houses

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Abstract: Although historical patterns provide great knowledge about lifestyle, socio-cultural structure, economic conditions about their settlement as a main heading, they are the important representatives which reveal markedly, relationship between nature, human and building. Historical patterns are the significant authorities which facilitate to analyse time-varying parameters about settlement and society like life style, family structure, economical conditions, etc. Historical buildings are the lynchpins which conspicuous termly and keep up to date our relation with history as use of natural, local materials; combining technical and mastery with intelligence and embrace nature friendly planning approach with its settlement. By this study traditional houses, in Taraklı settlement which was located in Bithynia in ancient times, called *Dablais, Doris, Deblis, Dablai* and now in the province of Sakarya, will be analysed from the point of relations with environment and community structure in the building period and the effects of these relations will be determined in architectural perspective and the present conditions of traditional Taraklı Houses will be revealed.

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Key Words: *Historical Patterns, Taraklı, Traditional Houses*

Yeni Eğitim Çevresi Tasarımında Performans Odaklı Yaklaşım

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'You cannot see Architecture, you can only be in it, as in music'
Erno Goldfinger

"Mekân" ne salt bir soyutlama ve nesne, ne de sadece somut, fiziksel bir şeydir. Bütün boyutları ve biçimleriyle, hem kavram hem de gerçekliktir[1]. Tasarlanmış ve hali hazırda kullanılmakta olan bir mekân fiziksel anlamda sabit kabul edilir ama pasif ve yalıtılmış değildir; kullanıcısı olan insan mekân içerisinde çeşitli eylemlerde bulunur. Ancak kendisi için tasarlanmış hareket alanı değiştikçe kullanıcının mekândan aldığı algısal parametreler de değişkenlik gösterir. Tasarımcılar mobilyalar yardımı ile iç mekânı tasarlarken, kullanıcıların mekânın işlevine göre belirledikleri aktiviteleri söz konusu alan içerisinde belirli kriterler çerçevesinde dağıtırlar. Bu işlem sürecinde ve sonrasında tasarımcıların mekân içerisindeki dolu hacmi tasarladığı düşünülse bile aslında tasarımcılar negatif alanı yani boşluğu başka bir değişle kullanıcıların o mekândaki hareket alanlarını tasarlarlar. Dolayısı ile mekânın -işlevini başlangıç noktası alarak- içerisinde bulunulacak aktiviteler ve hareketlerin mekân içerisindeki dağılımı, kullanıcının o mekândan aldığı performansı etkileyen faktörler olduğundan tasarım kararları alınırken performans kriterlerinin karşılanmasında eylemin "ne şekilde" yapıldığı konusu mobilyaların forma kavuşturulması ve mekân içerisinde konumlandırılması öncesinde göz önünde bulundurulmalıdır. Yapılan bu çalışma ile kullanıcı mekân etkileşimi eğitim çevreleri özelinde ele alınacak, eğitim programını odak noktası tutarak işlevleri karşılama performansı irdelenecektir.

Anahtar Kelimeler: *İnsan ve mekân ilişkisi, Mobilya, Performans, Eğitim çevreleri*

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New Trend in Designing Experiential Shopping Spaces

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Designing shopping spaces is primarily a specialized practice of architecture and interior design. Since the aim of building shopping spaces is to gain profit, it would be an interesting and profit-generating tendency to use of marketing science during the design stage of these spaces. While designing a space it is always the most important thing to identify the expected values from that particular space. Shopping spaces are built to create space where commercial activities can be held. Is it possible to design a shopping space, which can interact with consumers? The answer to this question is hidden between the junction point of marketing science and architecture.

Marketing as a very dynamic science is always evolving with the social changes. The very young sub-branch of marketing called "*Experiential Marketing*" focuses on experience theme. Psychologists have figured it out that experience made people happier than material purchases. Researches have been showing that shopping is an activity, which is done in terms of finding happiness more than satisfying actual basic needs. Then it is logical to ask what happens when you offer your customer a product or a service with experiences that emphasizes the core value of your company. When it comes to buy a product or a service all of the consumers have many options presented by companies. Each of these companies is having problems with selling their product or service. It is hard to survive in the competitive nature of marketplace nowadays. Companies are having economic difficulties because of this situation. Differentiation stands out as an answer to competitive pressure that the companies are having these days.

Experiential marketing is based on the entire experience a consumer has with a product or service. Experience design is an important issue for this methodology. It is important to design experiences that reflect the virtues of the product or the service that is presented by

company for consumers to have. Marketing experts are proved that the use of experiential marketing method is an approach to increase sales and profitability.

The use of the methodology of experiential design while designing a shopping space as an architect or interior designer will also produce a positive result on behalf of sales and profitability. In order to design a shopping space with this methodology, the virtues of the company and its products or services should be examined. The experience that will be presented to consumers in shopping spaces must be built with coordination of the brands' corporate identity and its target market. The aim should be design an experience that reflects the company and also suits its target market. Target market must be evaluated as persons not as consumers. The main aim is to make consumers feeling special. In order to give this feeling to consumers the architectural design of shopping spaces should appeal to people. To maintain this issue experiences should be offered to consumers that can interact with them. In order to achieve this goal sensory experiences, affective experiences, creative cognitive experiences, physical experiences, behaviors and lifestyles and social-identity experiences must be presented to consumers in a holistic manner. The shopping spaces that can present its customers such experiences can attract consumers with architectural design and reach the ideal experiential shopping spaces that can interact with consumers by architecture.

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Key Words: *Shopping Spaces, Experiential Marketing, Experience*

The Synthesis of Biodiesel from Vegetable Oil

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Abstract

The use of reclaimed vegetable oil from restaurants, for use as a fuel for road vehicles, has

received a lot of attention in recent years. Used vegetable oils contain solids and free fatty acids due to oil breakdown during the frying process.

The synthesis of biodiesel by transesterification of vegetable oils was carried out in this study. Two varieties of oils are used in this work, the first type is the waste oils used in frying and the second are olive-pomace oils. Waste oil residue becomes harmful to the environment. To remedy this, recovery becomes a necessity.

In this experiment we determine some physicochemical properties of the oils used and biodiesel obtained.

At the end of this study, a comparison of our results with the Algerian standard showed that biodiesel has properties of diesel and biodiesel addition improves cetane number and some other parameters.

Keywords: transesterification, olive pomace, frying oil, waste oil biodiesel.

The Traces of the Past... The Roots of the Future
An Essay on Creativity, Play and Architecture

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In this study, firstly the literal meaning of the word "architecture" and then, how human beings have evolved since their existence on the earth, how this evolution has reflected on the art and architecture that is regarded as an extension of art, and finally how creativity has appeared as a concept in art and creativity are presented. At the same time, houses where we live, sleep, eat and do many other things are discussed from the perspective of their architectural design focusing on how they have met our needs in different places and times throughout the history. The last part of the study aims to discuss the importance of the pre-school period and play which is remarkably important for this age group have a major role in the development and the education of the architects making efforts to create a new product. The study is based on the information collected by reviewing a variety sources related to architecture, visual art, social sciences and educational sciences. In addition, the concept of creativity that takes an important place in the concept of play is another topic focused in this study. In consideration of all the information used in this study, it is thought that this study paves the way for different perspectives in the fields of architecture and fine arts in addition to educational and social sciences and for further research as it combines different disciplines. Moreover, it is believed that this study can lead to eclectic research studies combining new and different disciplines

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Key Words: *Architecture, Architectural Creativity, Creativity in Art, Plays, Preschool Period*

Furniture Design in Turkey after 1950
"Kare Metal"

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19th. Century at which radical changes occurred in designing sector, industry developed, new materials were discovered so quick and abundant production were provided. But, machines are being used in production though, traces of past stil continue. Beside of this, original furniture were designed not impressed by eclectic attitude. (1).

The Second World War is conceived as a differentiation in taking shape of 20th century's furniture, it is analyzed as before the Second World War and after the Second World War. The time after the Second World War is perceived as a time span when the revolutionary technology has developed rapidly in furniture design. Thus, the discourses which emerged in industrial revolution and after that time have big importance (2). As the designers responded the materials and techniques which were parts of the economic boom after 1950, the products, which were enabled by industry, came up in Turkey and in the world. The developments resembling economic reforms in the world after the war came up in Turkey, too, but, there were serious restrictions on materials and resources for Turkish designers and producers (3).

Kare Metal Atelier was found by sculptor Sadi Öziş, İlhan Koman and Sadi Çalık between 1953 and 1967. Although the atelier was found on modern/technologic design principles which were held by all over the world during industrial revolution, they produced modern furniture without industrial materials and production techniques.

Setting process of 'Kare Metal' work place was done by setting of iron work place in Academy in 1953. Works about furniture and sculpture started to be carried out in this iron

work place. During this, 'Groupe Escape' which Tarık Carım, Andre Bloc and friends created, mean while in France, provided the taking role of Turkish attendants in organization. So, Tarık Carım, İlhan Koman, Sadi Öziş, Şadi Çalık, Zühtü Müridoğlu, leaded by Hadi Bara, started to do their Works in this iron workshop. Result is so successful. However, works created by those couldn't be exhibited in the exhibition in Paris because of some reasons. Because not attending of that Paris exhibition, group made a revision among them then İlhan Koman, Sadi Öziş and Şadi Çalık got to gether and continued their working out of the work place. So, Kare Metal emerged. Opinions of exhibiton of Works done during this process were proposed (Fig1). But, this 10-years attempt ended because İlhan Koman went to Europe and in same way Şadi Çalık in 1960 and Sadi Öziş in 1963. During time, following this, we couldn't have a consistent work till that day (4).

Fig 1. Kare Metal Furniture

It can be asserted that Kare Metal atelier embarked upon a unique enterprise in modern furniture design which relied on handmade in 1950s, when Turkey had restricted conditions. The atelier contributed to Turkey's modern furniture conception by adopting modern terms into daily life through systemizing the aesthetics essence of industrial revolution, harmonising science and culture through analytical thinking. In this study, designers and design concepts of ''Kare Metal'' Atelier, which provides an important perspective to 20th century furniture in Turkey, has analyzed.

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Key Words: Industrial Revolution, Modernism, Furniture Design, Turkey.

Photophysical Properties of Newly Synthesized Boran-Dipyrromethene Compounds

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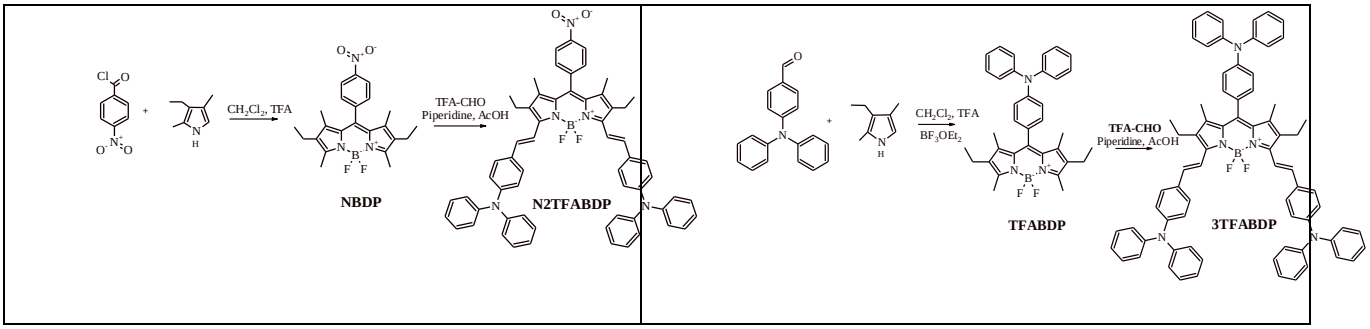
There has been a great deal of interest on two photon absorption (TPA) properties of novel materials due to their related application in optical limiting, TPA imaging microscopy, optical data storage and photodynamic therapy. Designing new fluorophore compounds with high two-photon cross-sections (TPCS) values within the 700-1200 nm wavelength region, is important in biological imaging applications[1].

Boron-dipyrromethene (BODIPY) dyes are novel fluorophores with high fluorescence quantum yields, good solubility, excellent photo stability and high TPCS values. Manipulating the electron donor and/or acceptor properties and their incorporation in molecular architecture is a challenge for the synthesis of highly efficient two photon active compounds. Increasing the electron donor strengths and conjugation lengths enhances the TPA properties. We studied various phenolic and phenolate forms of some aza-BODIPY molecules with different electron donating strengths in order to understand the effect of substitution and intramolecular charge transfer on TPA properties [2].



Scheme 1. Synthesis of the BODIPY compounds (NBDP, N2TFABDP, TFABDP, 3TFABDP)

New BODIPY compounds containing nitro (**NBDP**, **N2TFABDP**), diphenylamine (**TFABDP**) and triphenylamine (**3TFABDP)** groups were designed and synthesized (**Scheme 1)** to enhance two photon absorption properties at NIR region by increasing charge transfer mechanism. Charge transfer mechanisms were investigated with linear absorption, fluorescence and ultrafast pump-probe absorption spectra in various solvent. Solvents with various polarities were used to better understand the charge transfer properties of investigated compounds. Open aperture Z-scan experiments showed that charge transfer enhanced to two photon absorption properties. Two photon absorption cross section value was measured as 220 GM at 800 nm wavelength for the **3TFABDP** compound. This value at 800 nm wavelength is considerably high compared to similar BODIPY compounds.

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Keywords: *Borondipyrromethene, two photon absorption, ultrafast pump probe spectroscopy*

Bias Reducing Approach for Some Robust Estimators in the Case of Kernel Estimation

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Extended Abstract

In this study, quantile based robust estimators are investigated for the Weibull distribution. We focus on the estimators such as median, interquartile range, quartile and octile skewness for Weibull distribution which is one of the most widely applied probability function because of its versatility and relative simplicity. When data is contaminated or if there are outliers in the data, it is very important to use robust estimators. For small data sets, it is reported that by introducing kernel estimation for smoothing empirical distribution function, a reduction in mean square error of estimator is achieved for gamma distribution [1], [2]. We examined reduction of mean square error for considered estimators for Weibull distribution [3]. It is known that, in kernel estimation, it is not crucial the selection of kernel density, however bandwidth selection is more important and it controls the smoothness of the estimated distribution function. When kernel estimation is obtained in order to achieve smoothness, it is known that the estimators are heavily biased. For that reason, it is necessary to improve the estimators by using bias reducing approach.

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Keywords: Kernel smoothing, Weibull distribution, Quantile based estimators, Biased reducing.

Highlights

- When kernel estimation is applied, the mean square error of robust estimators is decreasing.
- These estimators are heavily biased.
- So biased reduction is important.

Polymer-Dispersed Liquid Crystal Doped With Various Ratios Of Carbon Nanotubes

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Since their discovery in 1991, carbon nanotubes (CNT's) have attracted a great deal of attention and have been the focus of extensive research efforts as model systems in nanotechnology because of their potential applications including electronic devices, field emitters, and reinforcement for advanced materials [1]. Liquid crystals are the advanced technological materials with combination of fluidity and anisotropy in optical, electrical and magnetic properties. Liquid crystal research has received considerable attention from many scientists due to their applications in electro-optical materials such as liquid crystal displays (LCDs) which has allowed the development of mobile data processing and communication tools in the last decade [2]. CNT-dispersed nematic liquid crystals (CNT-LCs) have drawn significant attention because of various interesting physical behaviors. As CNT particles are dispersed throughout an LC matrix, an aligned ensemble of LC and CNT molecules can be obtained because an LC orientational order can be imposed on CNTs. Recently, an approach based on polymer-dispersed liquid crystals (PDLCs) has been proposed to avoid the flow of LCs, to enhance the mechanical stability, and to simplify the fabrication process.

In this work, a new material design that uses a hybrid material of PDLCs and CNTs (CNT-PDLC) for detecting gas such as acetone, chloroform and dichloromethane was proposed.

CNT-PDLC films was made from mixtures of various ratios LC, poly (methyl methacrylate) (PMMA) and CNT materials and characterized by differential scanning calorimetry (DSC) and polarized optical microscopy (POM).

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Key Words: *Liquid crystal, poly (methyl methacrylate), carbon nanotube*