Ref no: 165 Abstract: 0299
Session 07: Composite materials

FLUORINATED SURFMERS MODIFIED CLAYS AND THEIR CORRESPONDING POLYSTYRENE NANOCOMPOSITES: STRUCTURE-PROPERTIES RELATIONSHIP STUDY

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Clay minerals are one of the most studied inorganic fillers for polymer-based nanocomposite materials. In fact they can improve the matrix performances assuring better mechanical and thermal properties, higher scratch resistance, barrier and anticorrosive properties (1–3). Among the many types of clay available, montmorillonite is mostly used to make nanocomposites (4-5).

As the compatibility between a natural clay mineral and an organic polymer is usually very low, the clay mineral has to be organically modified. One of the more common modification methods is the introduction of an ammonium salt, bearing a suitable organic functionality, inside the clay mineral galleries through a cation exchange reaction(6-7).

Objectives: We report in this work the synthesis and characterization of novel series of hybrid fluorocarbon/ hydrocarbon quaternary ammonium reactive surfactants (surfmers)of the general formula

RF(CH2)l N(CH3)2(CH2)m OCOCH=CH2 with (RF=C4F9, C6F13, C8F17, l = 4, 6, 11 and m= 2 -11) for the preparation of polystyrene nancomposites. The polymerizable acrylate group was placed on the end of the hydrocarbon chain tips. The preparation of such hybrid structures constitute an interesting concept to combine the specific properties of clay with those of fluorinated surfactants as chemical inertness, thermal stability, high surface activity and water and oil repellence that offer advantages over hydrocarbon surfactants.

Results and Discussion: These surfactants exhibit very low surface tension as well as low critical micellar concentration until 1.39E-05 mol/L. Special attention was focused on the effect of the polymerizable moiety, the length of the hydrocarbon spacers and the fluorinated chains on surface activities of the reactive surfactants. Results indicate that the acrylic function has a pronounced effect on the increasing of hydrophobic micelle character. This was confirmed by surface tensions measurements and average surfaces occupied by these molecules at water-gas interface.

These monomers were found to be new convenient intercalating agents for the achievement of an enlarged basal spacing of the clay layers to afford fluorinated-clay nanocomposites (fig.1). The nature of surfactant, the styrene/ monomer ratio as well as the polymerization mode were found to be the key parameters for modulating the morphology of the polystyrene-nanocomposites. FT-IR, DRX, ATG and MEB were used to characterize these materials.

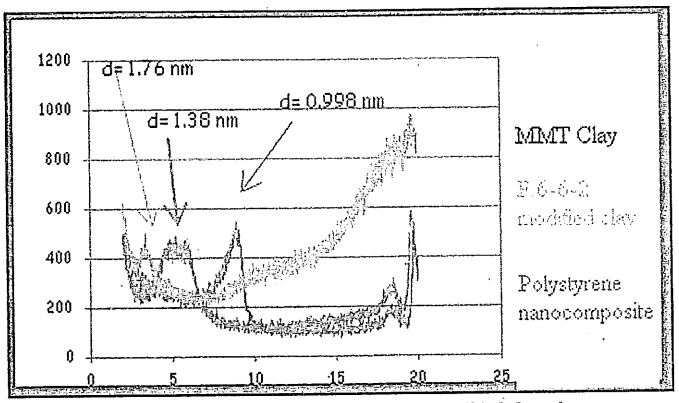

Figure 1. XRD Pattern of MMT Clay, Modified clay with F.6-6-2 surfmer (RF=C6F13, l=6, n=2) and the corresponding polystyrene nanocomposite the results indicate an increase of the interlayer space of the clay. The morphology of the modified clay as well as the corresponding nanocomposite is intercalated

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Ref no: 166 Abstract: 0316
Session 07: Composite materials

THE TENSILE PROPERTIES OF THE CALCIUM CARBONATE FILLED HIGH DENSITY POLYETHYLENE COMPOSITE PIPES IN ACCORDANCE WITH ISO 6259-1

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In this experimental study, the calcium carbonate (CC) filled High Density Polyethylene (HDPE) composites pipes uniaxial tensile properties were studied depending on the amount of filler, in accordance with the ISO 6259-1 standard. In the industry, CC material is used mostly as a filler in thermoplastic materials to cheapen costs. There are many studies that indicate CC filler amount and/or the particle size of CC in the effect of thermoplastic material properties. In these studies, production of test sample generally effectuates with methods that can apply large pushing force (injection molding, hot pressing etc.). So, test samples which the shape of mold cavity as a result of cooling in the mold (solidification) were used more. From the results of uniaxial tensile test, it is known that HDPE / CC composite material stiffness has grown and yield stress has shrunk with increasing CC filler amount and/or decreasing CC particle size. Pipe practitioners also want to be as large as possible that laid in the top and/ or underground unpressure and/or pressure pipe. In this context,

the purpose of this study is to investigate HDPE / CC composite pipes with producing by single-screw extrusion method uniaxial tensile properties of CC depend on filler amount. With this purpose, the goal of the study is to obtain HDPE / CC composite pipe along the pipe circumference and the length of the pipe and changes depending on the amount of filler uniaxial tensile by the pure HDPE pipe. To examine the effect of the amount of filler, it was used the filled composite and pure HDPE pipes with CC material 63 mm outside diameter, the average particle size (d0.5) 5.00 μm and volume percent (vol%) in the amount 10, 15, 17.5 and 20. The multi-purpose test pieces was obtained along diameter of the pipe circumference and the length of the pipe through the pipes by ISO 6259-1 standard. The uniaxial tensile test were applied in the multi-purpose test pieces. The experimental results show that the uniaxial tensile properties of HDPE/CC composite pipe depend on particle size. It was identified that the amount of CC filler was expanded the Young's Modul of the pure HDPE pipe and was minimized yield and tensile stresses and yield and tensile elongations. Also, It was identified that the Young's Modul of the HDPE/CC composite pipe with increasing the amount of filler CC but yield and tensile stresses and yield and tensile elongations decrease. Furthermore, it was determined that the uniaxial tensile properties of the same amount of filler were partly the same along diameter of the pipe circumference and length of pipe of composite pipe.

Ref no: 167 **Abstract:** 0322

Session 07: *Composite materials*

A NOVEL ELECTROCHEMICAL SENSOR BASED ON GRAPHENE NANOSHEETS AND CARBON NANOSPHERES/CHITOSAN NANOCOMPOSITE MODIFIED GLASSY CARBON ELECTRODE

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For the first time graphene nanosheets and carbon nanospheres/chitosan (GNS–CNS/CS) based nanocomposite film modified electrode was used for electro-oxidation of Mebendazole (MD). MD is a benzimidazole drug that is used to treat human infections caused by parasitic worms. MD causes slow immobilization and death of the worms by selectively and irreversibly blocking uptake of glucose. The electrochemical behavior of MD at GNS–CNS/CS modified glassy carbon electrode has been investigated using cyclic and differential pulse voltammetry in aqueous media at different pHs. The prepared electrode showed an excellent electrochemical activity toward the electro-oxidation of MD leading to a significant improvement in sensitivity as compared to the bare glassy carbon electrode. The adsorptive stripping differential pulse voltammetry was used as an efficient method for the electroanalytical determination of MD. Under the optimal conditions, the modified electrode showed a wide linear response to the concentration of MD in the range of 0.02–1 μM with a low detection limit (10.5 nM).

Ref no: 168 **Abstract:** 0337

Session 07: *Composite materials*

ANALYTICAL ELECTRON MICROSCOPY STUDY OF B_4C-AL CERAMIC - METAL COMPOSITES PRODUCED BY PRESSURELESS MELT INFILTRATION TECHNIQUE

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Ceramic-metal composite materials generally combine the hardness and light weight of ceramics with the toughness of metals as in B4C-Al composites (1). Interphase phenomena in ceramic-metal system are of significant importance in materials science and the technologies related to metal/ceramic joining and fabrication of metal-ceramic composites (2). Several processing techniques, including powder metallurgy, casting, infiltration, directed metal oxidation, etc., have been developed to produce ceramic–metal composites. Pressureless melt infiltration is generally considered to be a more attractive technique to produce ceramic-metal composites due to its cost effectiveness and easiness when compared with more conventional methods such casting and powder metallurgy (3).

For this purpose porous pellets were produced by using B4C powder, which were then pressureless melt infiltrated with a 2024 Al alloy in an Ar gas atmosphere. For analytical transmission electron microscopy (TEM) investigations electron transparent sample were prepared by ion beam milling. 200 kV field emission transmission electron microscope (JEOL 2100F) attached with an energy filter (GATAN GIF TRIDIEM), parallel electron energy loss spectrometer (PEELS), a high angle annular dark field scanning transmission electron microscope (STEM HAADF) detector and an energy dispersive x-ray (EDX) spectrometer (JEOL JED-2300T) was used for the characterization of interphase boundaries in composite. General microstructure and existing phases were determined by using X-ray diffraction (Rigaku Rint 2200, Tokyo, Japan) and scanning electron microscope (Zeiss Supra 50 VP) attached with energy dispersive X-ray spectrometer (EDX, Oxford, England). XRD results showed that main reaction product is Al3BC phase. Figure 1 shows the SEM-BSE image of the composites. Because of the existence of light elements, it is difficult to carry out detailed elemental analyses of the reaction products by using SEM-EDX. Therefore, advanced TEM techniques were used. In this presentation, results of analytical investigations will be presented.

References

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CONTENTS

Committee VI
Sponsors VII
Scientific Program VIII
Abstracts of Plenary Speakers 1
Abstracts of Invited Speakers 3
Oral Presentations 15
Posters 129
Biographies 273
Author Index 287

16TH SEPTEMBER, MONDAY

17:00 - 19:00	**Registration**
19:00	**Welcome Cocktail**

17TH SEPTEMBER, TUESDAY

	Hall 1	Hall 2	Hall 3	Hall 4
08:30 - 09:00	**Opening Ceremony**			
09:00 - 09:45	Advanced Materials Laureate Opening Lecture: **ANTHONY P.F TURNER - Printed Bioelectronics (Hall 1)**			
	Nanomaterials	**Optical, Electrical, and Magnetic materials**	**Biometerials**	**Composite materials**
	Session Chair: **H. KOBAYASHI**	Session Chair: **S. İÇLİ**	Session Chair: **A.P.F. TURNER**	Session Chair: **L.C. CHEN**
10:00-10:30	Advanced Materials Medal Lecture: **A. TIWARI** (Sweden) Inteligent nanosystems for biomedical devices	Invited Talk: **C. OW-YANG** Solution-processed LiF for work function tuning in electrode bilayers	The Nano Award Lecture: **A. MERKOÇİ** Tunning biosensor response by nanomaterials and signal transducing arquitectures	Invited Talk: **R. MUÑOZ-ESPÍ** Colloidal Systems as Scaffolds in the Formation of Organic/Inorganic Hybrid Nanoparticles
10:30-10:50	Versatile preparation of hybrid nanoaggregates of superparamagnetic iron oxide nanoparticles based on poly(4-vinyl pyridine) block copolymers self-assembly: **Nuno Rocha**	New type of immune biosensor based on the cerium oxide ISFETs for the patulin control in foods: **Nickolaj F Starodub**	Bioactive Electroconductive Hydrogels for the Abio-Bio Interface: **Anthony Guiseppi Elie**	AML Medal Lecture: Effect of transition metal ion doping on morphology and properties of polyaniline: **Saroj K. Shukla**
10:50-11:10	Dielectric response, functionality and energy storage in barium titanate- epoxy resin nanocomposites: **Anastasios C. Patsidis**	Electrochemical Evaluation of Embryoid Bodies of Different Size Using LSI-based Amperometric Sensor: **Mustafa Şen**	Supramolecular derivatives of antioxidants: preparation and physicochemical characterization: **Mino R Caira**	Introduction of antibacterial function to Cu-Al-Ni shape memory alloy: **Canan Aksu Canbay**
11:10-11:30	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**			
11:30-11:50	Design and Synthesis of temperature-sensitive bio-hydrogel coated SiO2-Au nano core-shell for photo thermal therapy of cancer cells: **Sarah Majd Jabbari**	Static model for the component GaAs MESFET With High Pinchoff Voltage: **Chahrazed Kaddour**	Structural change of silk fibroin by wet-heating treatment: **Tomoko Hashimoto**	Composites of poly(l-lactide-co-ε-caprolactone) with plasma treated hydroxyapatite: **El Miloudi Khaled**
11:50-12:10	High Temperature Stabilization of Nanocrystalline Fe and Fe-base Alloys: **Hasan Kotan**	The first principles study on the ground state of Zirconia: LDA(GGA)+U method: **Yasemin Öztekin Çiftci**	Biosensors: Functions and Applications: **Morteza Azizollahi Aliabadi**	Improving mechanical and physical properties of microwave and conventionally sintered oxide reinforced PM 316L composites by decreasing powder particle sizes: **Onur Ertugrul**
12:10-12:30	Fine tuning gold nanoparticles monolayer for protein and cell surface recognition: **Zeynep Ekmekci**	Synthesis, electrical and thermal properties of Bi4V2-xNbx011 (x=0.0 and 0.10) ceramics: **Maheshwar Roy**	Adhesion of mussel foot proteins to the spin labeled surface: **Yaşar Akdoğan**	Analytical electron microscopy study of B4C-Al ceramic - metal composites produced by pressureless melt infiltration technique: **Pinar Kaya**
12:30-14:00	**Lunch Time + Poster Session (Sessions: 1,3, 4, 5, 8)**			
	Session Chair: **A. TIWARI**(Sweden)	Session Chair: **C. OW-YANG**	Session Chair: **A. MERKOÇİ**	Session Chair: **R.MUÑOZ-ESPÍ**
14:00-14:30	IAAM Medal Lecture: **A. TIWARI** (USA) Oxides for Next Generation Spintronics	Invited Talk: **S. İÇLİ** Organic Photoelectric Technologies in Energy Efficiency	AVI Award Lecture: **L. CHEN** Supramolecular Macrocyclic Systems as Non-precious Catalysts for Fuel Cells: a Bio-inspired Approach	Invited Talk: **S. VALYUKH** Photonic nanocomposites and their applications
14:30-14:50	DNA-directed silver nanoparticles on graphene oxide and its antibacterial properties against xanthomonas perforans: **Ismail Öçsoy**	Ab initio calculations of some physical properties of magnetic shape memory alloy: Ni2FeGa: **Cengiz Soykan**	Magnetic nanoparticles labeled stem cells: a theranostic approach towards cancer therapy: **Sanjeeb Kumar Sahoo**	A Numerical Study on Thermal Conductivity of Polymer Composites Reinforced with Conductive Fillers: **Ismail Hakki Tavman**
14:50-15:10	A novel method for the synthesis of nanocomposite (TiO2-Cu20) and its application in degradation of surfactants from aqueous solution by sunlight: **Mohammad Hasan Entezari**	The electronic and magnetic properties of FeM (M=o, S, Se, Te) compounds in Rock-Solt structure: **Ahmad Mohammadi**	A Facile Approach for Controlled Synthesis of Curcumin-loaded Starch-maleate Nanoparticles: **Suh Cem Pang**	Lithium Niobate dispersed Silver Sulphate – A Composite Solid Electrolyte: **Shyamkant Wasudeorao Anwane**
15:10-15:30	High Stable Suspension of Magnetite Nanoparticles in Ethanol by Using Sono-Synthesized Nanomagnetite in Polyol Medium: **Tahereh Rohani Bastami**	Elastic and thermal properties of Sr1-xCaxCo03: **N K Gaur**	Label-free aptamer based electrochemical biosensors: A simple way to sensitive diagnosis of cancer cells: **Masoud A. Mehrgardi**	Fluorinated surfmers modified clays and their corresponding polystyrene nanocomposites: structure-properties relationship study: **Chahinez Benbayer**
15:30-15:50	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**			
	Session Chair: **H. ZAREIE**	Session Chair: **L. ÖZYÜZER**	Session Chair: **L. KOCK**	Session Chair: **S. VALYUKH**
15:50-16:10	Characterization of Nano-Scale Magnesium Borates Hydrothermally Synthesized from Na2B4O7.5H2O, MgCl2.6H2O and H3BO3 at 80°C: **Azmi Seyhun Kıpçak**	Current-voltage characteristics of ni/6h-sic schottky barrier: **Metin Özer**	The effect of CaNa2-EDTA on zinc, carbohydrate metabolism and glutamic oxalic, glutamic pyruvic aminotransferases (GOT, GPT) and alkaline phosphatase activities in experimental diabetes: **Zine Kechrid**	Structural performance of laminated fiber reinforced polymer composites manufactured by resin transfer molding and vacuum curing&debulking table: **Erdem Akay**
16:10-16:30	Ph-controlled degradable polyuretahne/silica hybrid nanocapsules: **Matthew Hood**	Electronic and magnetic properties of lithium doped lanthanum manganites: **Ahmed M Ahmed**	Cellular uptake of ceria nanoparticles: **Gülnihal Özek Yelken**	The effect of particle size of calcium carbonate on the fracture toughness of polypropylene blok copolymer: **Elif Gülşah Yıldız**
16:30-16:50	Ultrasonic wave propagation in hexagonal semiconductor nanocrystalline ZnO and BeO compounds: **Pramod Kumar Yadawa**	Exploration of the electro-optic behavior of GaP photodetector in a semiconductor gas discharge device: **Hatice Hilal Kurt**	The impact of process parameters on spray dried Hydroxyapatite-Gelatin composites: **Tuğba Başargan**	Effect of ceramic waste particle fillers in epoxy based resin composite for a composite tile application: **Saijit Daosukho**
16:50-17:10	Expandable Polyethylene Based Nanocomposite: **Ehsan Rezaei Zare**	Novel synthesis of oxides based phosphors for near UV LEDs lighting and display devices: **V. V. Shinde**	Stimuli responsive three-dimensional conducting electrospun fibrous scaffolds for regenerative medicine: **Yashpal Sharma**	Crack initiation and propagation of composite compact tension specimen using eXtended Finite Element Method: **Mohammed Yahya Abdellah**
17:10-17:30	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**			
17:30-17:50	Real and apparent strengths of nanomaterials: **Şule Celasun**	Efficient red emitting Mg6-xCaxBP5O20:0.05Eu3+ (0.025<= x <=0.1) phosphor under near-UV excitation: **Kartik N Shinde**	Smart Theragnosis:Multi Drug Resistance Cancer Perspective: **Hirak Kumar Patra**	The effect of matrix/reinforcement ratio on the physical and mechanical properties of cold pressed and pyrolyzed C/C composite material: **Enbiya Türedi**
17:50-18:10	Extraction of trace amounts copper(II)using octadecyl silica membrane disks modified isocyanate-treated GOs (iGOs): **Ali Moghimi**		Evaluation of the surface properties of biomaterials coated with nanolayers: **Serap Gümüş**	Synthesis of zeolite X-carbon from coal bottom ash: **Nurul Widiastuti**
18:10-18:30	Extraction and Determination of Ni(II) by Histidine functionalized multi-walled carbon nanotubes adsorbed on surfactant coated C18: **Nima Yari**		**18:10-18:40** Invited Talk: **Y. Kumar MISHRA** Fabrication of different nano-microstructures by flame transport synthesis: From electronic to biomedical applications	Reprocessing of fibre reinforced polyethylene composites, effects on mechanical properties: **Ahmet Ünal**
18:30-18:50	Reactive oxygen species (ROS) generation capacity of TiO2 nanocrystals: **Roghayeh Imani**			
18:50-20:00	**Poster Session (Sessions: 1,3, 4, 5, 8)**			

16TH SEPTEMBER, MONDAY	
17:00 - 19:00	Registration
19:00	Welcome Cocktail

17TH SEPTEMBER, TUESDAY			
	Hall 5	**Hall 6**	**Hall 7**
08:30 - 09:00	**Opening Ceremony**		
09:00 - 09:45	Advanced Materials Laureate Opening Lecture: **ANTHONY P.F. TURNER - Printed Bioelectronics (Hall 1)**		
	Polymeric materials	**Energy, Enviromental, and Green Materials**	**Structural and Constructural Materiasl**
	Session Chair: **Y. TAMADA**	Session Chair: **E. ÖZENSOY**	Session Chair: **M.A. GÜLGÜN**
10:00-10:30	Invited Talk: **D. CRESPY** Design of nanocapsules for self-healing applications	Invited Talk: **El KHAKANI** Pulsed KrF-Laser based Synthesis of Highly Photoactive Nanohybrid Structures	Invited Talk: **I. HALASZ** Molecular aspects of micro- and nano-porous silicates
10:30-10:50	Polysiloxanes with conjugated aromatic moieties in their side chains - a potential new materials for OTFT and SAW sensors: **Tomasz Ganicz**	Ion-regulated Photoinduced Electron Transfer in BODIPY-BAPTA Fluorescent Switches: **Pınar Batat**	Homology identification of microstructual evaluation of 13Cr-2Ni-2Mo stainless steel quenched by induction heating: **Kazuaki Nakane**
10:50-11:10	Application of the liquid photopolymerizable membrnes at the creation of the enzymatic biosensors: **Nickolaj F Starodub**	Graphene Nanowall Supercapacitors with Ultra-high Performance: **Kuei Hsien Chen**	Effect of laser heat treatment by scanning laser on mechanical properties of ceramic coated steels: **Hirotaka Tanabe**
11:10-11:30	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**		
11:30-11:50	Effect of compatibilizer on the mechanical properties of Polyethylene/Poly(ethylene terephthalate) blends:**Tugba Guven**	Study of carbon-hydrogen bond on the microstructure of ball-milled graphite: **Yinghe Zhang**	Experimental study for detection of ductile fracture in weldments: **Zaoui Moussa**
11:50-12:10	Novel superabsorbent hydrogel composite with non clay mineral aimed at water sustainability: **Judith Pessoa Andrade Feitosa**	Near infra red utilization in dye sensitized solar cells by incorporation of up-converting phosphor nanoparticles: **Atif Khan**	Molybdenum arc –sprayed coatings: model of splat solidification and micro-structure development: **Yamina Mebdoua**
12:10-12:30	Mechanical characterization of glass fiber reinforced polymer resin incorporating waste glass aggregate: **Onur Üzüm**	Influence of deposition Process on the Bandgap and Electrical Properties of TiO2 Solar Cells: **Saad Kadhum Al Sabbagh**	Sintering and Microstructural Investigation of Gamma-Alpha Alumina Powders: **Emre Yalamaç**
12:30-14:00	**Lunch Time + Poster Session (Sessions: 1,3, 4, 5, 8)**		
	Session Chair: **D. CRESPY**	Session Chair: **El KHAKANI**	Session Chair: **I. HALASZ**
14:00-14:30	Invited Talk: **K. MALLICK** In situ polymerization and composite formation' (IPCF): An important route for the tailoring of advanced synthetic materials	Invited Talk: **E. OZENSOY** Understanding Catalytic Materials at the Molecular Level: From Thermal Chemistry to Photochemistry	Invited Talk: **M.A. GÜLGÜN** The Role of Interfaces in an Oxide-Skeleton Carbonate-Matrix Nanocomposite
14:30-14:50	Anton-Paar: Rheology for Advanced Materials: **Gizem Akay**	Controlled Pore Functionalization of Track-etched PVDF Membranes via RAFT Process to yield Functionalized Membrane Electrodes (FMEs): A Powerful Combination of Top-Down and Bottom-Up Processes: **Murat Barsbay**	Synthesis of zeolite-Y templated carbon by carbonization of sucrose as a precursor: **Nurul Widiastuti**
14:50-15:10	Elaboration of new uv powder coatings based on polyamide bio-sourced: **Majed Rejaibi**	The potential of Eco-Friendly Adsorbents from C. equisetifolia Plant Seeds For Dye Removal: **Mohamad Awang**	Abrasion Resistance of Reactive Powder Concrete: The Influence of Water-to-Cement Ratio and Steel Micro-Fibers: **Çağlar Yalçınkaya**
15:10-15:30	Enhanced antistatic durability for metal treated polyester via atmospheric plasma technique: **Merve Özlem Dobur**	Expression and Characterization of Rv0447c product is potentially the methyltransferase involved in tuberculostearic acid biosynthesis in Mycobacterium tuberculosis: **Laxman Singh Meena**	Creep Analysis of Linear Viscoelastic Thin Circular Plates By Finite Element Method: **Barış Tanrıverdi**
15:30-15:50	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**		
	Session Chair: **F. TIHMINLIOGLU**	Session Chair: **O. EBİL**	Session Chair: **K. KIDA**
15:50-16:10	Investigation of bonding between PBT and PP via lap-shear test: **Aylin Bekem**	Removal of Nickel from aqueous solutions by activated carbon obtained from seawater algae: **Belhakem Mostefa**	Electrodeposition and characterization of Zn based double-layer coatings on steel surfaces for industrial applications: **Mustafa Toparli**
16:10-16:30	Development of nanocomposites based on polypyrrole and carbon nanotubes for supercapacitors: **Subhash Baburao Kondawar**	Photo-catalytic hydrogen production over iron containing aluminophosphates:**Hentit Hafida**	Effects of laser shock processing on wear properties of 6061-T6 alloy: **Simge Gencalp Irizalp**
16:30-16:50	Synthesis and influence of Ce3+ codopant on the luminescence sensitivity of pyrophosphate phosphor: **Ritesh L Kohale**	Contribution to thermodynamic and kinetic investigations of Pb2+ ions adsorption in the presence of competing Cd2+ ions onto acid-activated clay: **Boufatit Makhlouf**	Identifying mechanical features of concrete material using image processing technology: **Gamze Cankaya**
16:50-17:10	Exploring eb-induced reactive processing to develop novel thermoplastic elastomers: **Kinsuk Naskar**	Magnesium borate synthesis from boric acid sludges at different mole ratios by hydrothermal method: **Azmi Seyhun Kıpçak**	The Use of Electric Arc Spraying coatings Alternative to Hot Dipped and Cold galvanizing: **Nacer Eddine Bacha**
17:10-17:30	**Coffee Break + Poster Session (Sessions: 1,3, 4, 5, 8)**		
17:30-17:50	Attaining prolonged antibacterial efficacy for plasma modified polyamide to obtain an advanced functional textile: **Fatma Betül Demirel**	Radiation induced grafting onto pe/pp nonwoven fabrics for the preparation of atrazine imprinted polymers: **Meshude Akbulut**	Effect of Fe-rich intermetallics on the microstructure and mechanical properties of thixoformed A380 aluminum alloy: **Simge Gencalp Irizalp**
17:50-18:10	Highly chlorine tolerant polymeric coatings for reverse osmosis membranes: **Levent Semiz**	Preparation and characterization of bio-pitch for carbon foam production: **Murat Kılıç**	The investigation of the effects of the hot forging process on the metallurgical and mechanical properties Of 41Cr4 tempered steel and 38MnVS6 microalloyed steel:**Yiğit Erçayhan**
18:10-18:30	Synthesis, microstructure and electrochemical properties of sputter deposited licoo2 thin films: **Obili Mahammad Hussain**	Synthesis of pillared acid-activated clay as a solid-acid catalyst for production of linear alkylbenzene: **Mohammad Hadi Mohammadi**	Growth kinetics of boride layer 316L steel: **Alae Kaouka**
18:30-18:50	Influence of photoinitiators and nanoparticles on hardening of UV-light cured coatings proved by nanoindentation techniques: **Atul Tiwari**	Vanadium-oxo-Sulphate and molybdenum hexa-carbonyl supported on silyl amine functionalized nano-boehmite as a green catalyst:**Mahdi Mirzaee**	The effects of pin geometry on the microstructure and mechanical properties of friction stir welded AZ31 joints: **Hadi Torkamani**
18:50-20:00	**Poster Session (Sessions: 1,3, 4, 5, 8)**		

18TH SEPTEMBER, WEDNESDAY

	Hall 1	Hall 2	Hall 3	Hall 4
09:00 - 09:45	Advanced Materials Medal Lecture: HISATOSHI KOBAYASHI (Hall 1) Nano fibrous materials for tissue engineering applications			
	Nanomaterials	**Optical, Electrical, and Magnetic materials**	**Biometerials**	**Composite materials**
	Session Chair: A.P.F. TURNER	Session Chair: E. ÜNALAN	Session Chair: A. TIWARI (Sweden)	Session Chair: F. TIHMINLIOGLU
10:00-10:30	Invited Talk: S. ÖZÇELİK Chemistry and exciton dynamics of the quantum nanoalloys	Invited Talk: L. ÖZYÜZER Emission of the THz Waves from layered superconductors by the Injection of Spin Polarized Current	IAAM Medal Lecture: L. KOCK The application of novel nanotechnologies to image biomaterials	Invited Talk: O. AKBULUT Utilization of Multiphase Systems (MuPSs) in Separation of Objects
10:30-10:50	Nano-structured silicon as perspective transducer for the immune biosensors: **Nickolaj F Starodub**	[R1] Half-metallic ferromagnetism in (SrTiO3)n/(LaMnO3)m superlattices: **Fabrizio Cossu**	Thin Organic Film based Biosensors for Membrane Associated Toxin Detection: **Umit Hakan Yildiz**	Transparent zirconia/acrylic nanocomposite: **Anthony Shiaw Tseh**
10:50-11:10	Morphology and Surface Engineering as a Tool for Enhancing Cellular Internalization of Nanoparticles: **Didem Sen Karaman**	Formation kinetics, morphology and magnetic properties of BaHF ceramics synthesized in x wt%NaCl- (100-x) wt% KCl molten salts: **Seray Kaya**		Physical, optical and mechanical characterization of organic/inorganic hybrid nanocomposite: **Baki Hazer**
11:10-11:30	**Coffee Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**			
11:30-11:50	Ceria/Polymer Hybrid Nanoparticles as Catalysts for Organic Reactions: **Margherita Mari**	Interplay between superconductivity and magnetism in '122' type iron-based superconductors: **Sevda Avci**	IAAM Medal Lecture: Cell mobility on silk fibroin film -Influence of fibroin primary sequence: **Yasushi Tamada**	Injection parameters optimization for tensile properties of calcium carbonate filled polypropylene homopolymer composite material via experimental design: **Yıldız Yuluğkural**
11:50-12:10	TiO2-nanoparticles modified with cetyl trimethyl ammonium bromide as solid sorbent for preconcentration of Parathion prior to determination by gas chromatography: **Naser Dalali**	Influence of solution pH on the production of Cerium-Substituted Yttrium Iron Garnet ceramic fabricated by using sol-gel process: **Ismail Yariçi**	Nano-structural control of β-type titanium alloys through severe plastic: **Hakan Yılmazer**	Thermal and frequency dependence dielectric properties of conducting polymer / fly ash composites: **Subhash Baburao Kondawar**
12:10-12:30	Graphene/poly cyclic butylene terephtalate nanocomposites: morphology, thermal and dielectric response: **Georgios C. Psarras**	Nanocrystalline nickel ferrite reinforced conducting polyaniline nanocomposites: **Subhash Baburao Kondawar**	Thermoresponsive Nanofilms: **Mohammed Yaseen**	Metal-Phthalocyanine functionalized carbon nanotube as sensor for chloroform vapor: **Swasti Saxena**
12:30-14:00	**Lunch Time + Poster Session (Sessions: 2, 6, 7, 9, 10)**			
	Session Chair: S. ÖZÇELİK	Session Chair: L. ÖZYÜZER	Session Chair: Ü. H. YILDIZ	Session Chair: Ö. AKBULUT
14:00-14:30	Invited Talk: H. ZAREIE Nanostructures for plasmonic biosensors	Invited Talk: E. ÜNALAN Silver Nanowire Networks	The Nano Award Lecture: J. PIERRE AIME Bioinspired Nanotechnology & High Speed AFM Instrumentation	Invited Talk: O. EBİL Shape Stabilized Composite Zinc Anode for Secondary Batteries
14:30-14:50	Computational Study of Physicochemical Characteristics of Novel Nano Structures of Mitoxantrone Anti-Cancer with Fullerenes in Photo Electron Transfer Process: **Behnoud Hormozi**	First principles studies on the pressure dependence of chalcopyrite semiconductor ZnSiP2: **Irem Öner**	Biomaterial functionalization by single step peptide immobilization via Tyr oxidation: **Sachiro Kakinoki**	Effect of Ni/NiO particles on structure and crack propagation in zirconia based composites: **Igor Danilenko**
14:50-15:10	Removal of methylene blue, a basic dye, from aqueous solutions uing nano zero- valent iron (NZVI): **Simin Arabi**	Electrical And Microstructural Properties Of (Cu, Al, In)-Doped SnO2 Films Deposited By Spray Pyrolysis: **Sibel Gürakar**	Temperature-gated switchable bioelectrocatalytic interface: **Onur Parlak**	Optimization of wear resistance of Polyurethane Nano-Composite Coatings by using Artificial Neural Network(ANN) and Genetic Algorithm(GA): **Ali Haghighat Mesbahi**
15:10-15:30	A hybrid functional study of the LaAlO3/SrTiO3 interface: **Fabrizio Cossu**	Synthesis and influence of Ce3+ codopant on the luminescence sensitivity of pyrophosphate phosphor: **Ritesh L Kohale**	SPION-based theranosis of Arterial Thrombosis: **Suryyani Deb**	
15:30-15:50	**Coffee Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**			
	Session Chair: T. SENGER	Session Chair: S. İÇLİ	Session Chair: H. KOBAYASHI	Session Chair: B. HAZER
15:50-16:10	Zirconia core/oligoperoxide shell nanocomposite: aspect of structure: **Oksana Gorban**	A soft chemical method for fabricating recyclable sers substrate with a zno/ag photocatalyst/sers system: **Ahmad Esmaielzadeh Kandjani**	Ultrasonic Characterization of aqueous Polyvinyl Pyrrolidone (PVP): **Omprakash P Chimankar**	Preparation and characterization of bioactive film for edible coating and packaging applications: **Ipek Erdogan**
16:10-16:30	Nonisothermal crystallization kinetics of Poly(Butylene Terephthalate)/Multiwalled Carbon Nanotubes Nanocomposites: **Milind Janardan Kulkarni**	Synthesis and optical studies of Dy3+ doped LiAlSi3O8 phosphors: **Mrunal D Deshpande**	PEO/Fe3O4 Scaffold Production with Electrospinning: **Mert Osman Duman**	The tensile properties of the calcium carbonate filled high density polyethylene composite pipes in accordance with ISO 6259-1: **Hande Akten**
16:30-16:50	Preparation and characterization of ceria nanopowders by various precipitation techniques: **Gülnihal Özek Yelken**	Preparation and Characterization of ITO-metal-ITO Multilayer Thin Films Deposited by DC Magnetron Sputtering: **Turgay Çoruhlu**	Improvement of stability and activity of immobilized glucose oxidase on modified magnetite nanoparticles: **Abdol Khalegh Bordbar**	Chemical vapor sensing properties of electrospun nanofibers of polyaniline / ZnO nanocomposites: **Subhash Baburao Kondawar**
16:50-17:10	Synthesis and structural properties of mesoporous TiO2 photocatalyts by using microwave calcination: **Şafak Toygun**	Theoretical investigation of triscarbazole derivatives as host materials for blue electrophosphorescence: **Seyhan Salman**	Characterization of sandblasted and acid etched titanium surfaces for dental implants: **Büşra Balli**	A novel electrochemical sensor based on graphene nanosheets and carbon nanospheres/chitosan nanocomposite modified glassy carbon electrode: **Masoumeh Ghalkhani**
17:10-17:30	**Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**			
17:30-17:50	Building a bridge between solution –solid state chemistry: **Taimur Athar**	Room temperature sputtering of ZnO thin films under gas flow variation for photovoltaic application: **Nilufer Evcimen Duygulu**	**17:30-18:00** Invited Talk: M. ÖZSÖZ Nanomaterials in electrochemical DNA biosensors	Contemporary challenges and opportunities of carbon nanotubes reinforced ceramics nanocomposites: **Iftikhar Ahmad**
17:50-18:10	Air stable copper nanoparticles for fast reductive degradation of organic dyes in aqueous medium: **Razium Ali Soomro**	Photophhysical properties and QDLED applications of yellow emitting conjugated polymer:CuInS2/ZnS QD nanoparticles: **Nuriye Demir**	**18:00-18:20** Artificial Cell Membranes for Drug Screening: **Ahu Arslan Yildiz**	Alumina-Boron Carbide-Aluminum Composites: **Ayse Kalemtas**
18:10-18:30	Noninteracting Fermi gas in rotating harmonic trap. Exact one–particle density distribution in Fourier space: **Bencheikh Kamel**	Cadmium Free Window Layer for Thin Film Solar Cell Applications: Material Properties and In-situ Doping: **Erkan Aydın**		Conductive polymer composites and coated metals as alternative bipolar plate materials for all-vanadium redox-flow batteries: **Burak Çağlar**
18:30-18:50	Crystallization Process and Microhardness Evolution in as-spun (Al85Co7Y8)98Si2 amorphous alloy: **Baris Avar**			Synthesis and characterization of cellulose acetate zirconium (IV) phosphate nanocomposite ion exchange capacity: **Deepak Pathania**
19:00-19:45	TÜBİTAK Ulusal Akademik Ar-Ge Proje Destekleri: **Mehmet Ufuk ATAY (Hall 1)**			
19:00-20:00	Poster Session (2, 6, 7, 9, 10)			
20:30-23:30	**Gala Dinner**			

18th SEPTEMBER, WEDNESDAY

	Hall 5	Hall 6	Hall 7
09:00 - 09:45	Advanced Materials Medal Lecture: HISATOSHI KOBAYASHI (Hall 1) Nano fibrous materials for tissue engineering applications		
	Polymeric materials	**Energy, Enviromental, and Green Materials**	**Structural and Constructural Materiasl**
	Session Chair: V. BULMUS	Session Chair: D. KARABELLİ	Session Chair: I. HALASZ
10:00-10:30	Invited Talk: F. ALEMDAROĞLU Fluoropolymers: versatile polymers through strong bonding	Invited Talk: A. KELARAKIS Functional Nanomaterials for Energy and Sustainability	IAAM Medal Lecture: K. KIDA Changes in three-dimensional magnetic fields of tool steel (JIS-SKS93) around plastic deformation area due to Vicker's indentations
10:30-10:50	Interconnected polypyrrole-polyaniline nanofibers: synthesis, characterization and applications for water treatment: **Madhumita Bhaumik**	Porous polyurea: a simple pathway to its synthesis and its application as a novel absorbent for dye removal: **Xiang Zheng Kong**	Effect of reciprocation motion on retained austenite using SAE 52100 steel bars: **Koshiro Mizobe**
10:50-11:10	Synthesis and characterization of nanofibers of conducting polyaniline and its substitute derivatives: **Subhash Baburao Kondawar**	Evaluation of the effectiveness of the retention of a pollutant by several depollution methods (using clayey material, complexing organic compound, and phytoremediation): **Amel Nasri**	Synthesis of silicon carbide and/or silicon nitride from biomass husk through thermoanalytical studies: **Muhammad Ali**
11:10-11:30	**Coffee Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**		
11:30-11:50	Synthesis of Polyurethane Based Macroinitiator with Fluorescent Properties through ATRP: **Dhanraj T Masram**	Phase structure and optical properties of rare earth doped tio2powders: **Hüsnü Arda Yurtsever**	Theory functional calculations (DFT), natural bond orbital, structural properties, and frequency for the two perfluoroalcohols: C4F9OH and C6F5OH: **Shahriar Ghamami**
11:50-12:10	Production of biodegradable PLA/TPU-talc composites: **Şebnem Kemaloğlu Doğan**	Remediation of heavy metals contaminated waters using multicomponent nanoparticles: **Luis Cumbal**	Parametric study of RC beams strengthen with GFRP laminates using ANSYS: **Tarak Prafulkumar Vora**
12:10-12:30	High density Polyethylene/Zinc oxide nanocomposites for ultra violet radiation shielding: **Ahmed Abou Kandil**	Green material on a building: Vertical garden: **Filiz Çetinkaya Karafakı**	Electrochemical sensing platform based on sol-gel/phenothiazine/ enzyme composite films: **Alina N. Sekretaryova**
12:30-14:00	**Lunch Time + Poster Session (Sessions: 2, 6, 7, 9, 10)**		
	Session Chair: F. ALEMDAROGLU	Session Chair: A. KELARAKIS	Session Chair: S. AKKURT
14:00-14:30	Invited Talk: V. BULMUS Raft-synthesized biohybrid polymers and nanostructures as functional building blocks for bioapplications	Invited Talk: D. KARABELLİ Next generation high energy battery systems- electrode materials	Invited Talk: A. MAKAT WDS: where EDS hits the limits
14:30-14:50	Artifical Neural Network Approach for Determination of Polymers' Mechanical Properties: **Fatma Kosovalı Çavuş**	Preparation and Thermal Properties of form-stable disodium hydrogen phosphate-myristic acid /zinc oxide composites as phase change materials for thermal energy storage: **Zuhal Karagöz**	BObservation of fisheye cracks around TiN and Al2O3 inclusions in repeatedly quenched high carbon bearing steel via homology: **Kazuaki Nakane**
14:50-15:10	Synthesis,SEM, and XRD studies of thin films of Pol(vinyl alcohol)-silica: **Mohammad Saleem Khan**	Synthesis, microstructure and electrochemical properties of sputter deposited licoo2 thin films: **Obili Mahammad Hussain**	Synthesis of electroconductive membrane using poly(hydroxymethyl-3,4-ethylenedioxythiopheneco-tetremethylene-Nhydroxyethyl adipamide): **Hamidreza Barghi**
15:10-15:30	Electroresponsive behavior and dielectric characterization of sodium alginate-poly(acrylic acid) semi-ipn gel films: **Gülten Gürdağ**	Reaction kinetics for embedded enzymatic degradation of polycaprolactone films: **Erhan Ozsagiroglu**	Synthesis and Characterization of copolymers containing amino acid: Tensile stress- strain behavior and Dynamic mechanic properties: **Birten Çakmalı**
15:30-15:50	**Coffee Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**		
	Session Chair: O. EBİL	Session Chair:I. HALASZ	
15:50-16:10	Fabrication and volatile organic vapor sensing properties of pyrene-labelled polystyrene thin film surfaces: **Zikriye Özbek**	Well-ordered fibrils of crystalline from waste materials as a coagulant with high potential to remove Azo dyes: **Dina Morshedi**	
16:10-16:30	The effect of ground colemanite on the fracture toughness of polypropylene homo polymer: Tülin Şahin	Recycling of investment casting ceramic molds in production of gas turbine blades: **Mohammad Naseri**	
16:30-16:50	Study of Electrical Properties of (PVA-BaSO4.5H2O) Composites: **Khalid Hussain Hatif Al Attiyah**	Removal of reactive black 5 from aqueous solutions by nano-tio2 immobilized on activated carbon: **H.Belayachi**	
16:50-17:10	Acrylic and cinamic acids as wax crystal modivires: **Ali Mohamed El Soll**		
17:10-17:30	**Break + Poster Session (Sessions: 2, 6, 7, 9, 10)**		
17:30-17:50	Polymerization of Catechol and Its Derivations by Cationic Porphyrin Catalyst: **Zahra Zamiraei**		
17:50-18:10	The Effect Of Particle Size Of Calsium Carbonate On The Hoop-Stress Of High Density Polyethylene Pipes: **Levent Sözen**		
18:10-18:30	Isothermal Degradation Kinetics of Poly(Hydroxybutyrate) and Poly(Hydroxybutyrate-co-Hydroxyvalerate) Nanocomposite Films: **Okan Akin**		
18:30-18:50	Evaluation of the physical and mechanical properties of rubber compounds reinforced with carbon fiber: **Seyda Polat**		
19:00-19:45	TÜBİTAK Ulusal Akademik Ar-Ge Proje Destekleri: **Mehmet Yuf**uk Atay (Hall 1)		
19:00-20:00	Poster Session (2, 6, 7, 9, 10)		
20:30-23:30	**Gala Dinner**		

19TH SEPTEMBER, THURSDAY				
	Hall 1	**Hall 2**	**Hall 3**	**Hall 4**
09:00 - 09:45	Plenary Talk: **N. SERDAR SARIÇİFTÇİ (Hall 1)**			
	Nanomaterials-1	**Nanomaterials-2**	**Biomaterials**	**Composite materials-1**
	Session Chair: **M. ÖZSÖZ**	Session Chair: **L.C. CHEN**	Session Chair: **A.P.F. TURNER**	Session Chair: **F. TIHMINLIOĞLU**
10:00-10:20	Influence of disorder on thermal transport properties of low-dimensional nanomaterials: **Cem Sevik**	Ageing of polyvinylbutyral solutions with impact on spinnability: **Martin Stenicka**	Production and characterization of silica reinforced chitosan composites for orthopedic biomaterial applications: **Sedef Tamburaci**	TMPTA-loaded PU-Based microcapsules show spontaneous polymerization under UV-Radiation: **Zoya Tuiebakhova**
10:20-10:40	Anionic Zeolite-like MOFs for porpane/propylene separation: **Baris Demir**	Stability and release behavior of drug loaded nanoemulsions: **Açelya Çalışkan**	Encapsulation of trans-resveratrol using electrospray method for enhanced stability: **Ceren Sunguc**	Epoxy composites with adjustable colors: **Khodzhaberdi Allaberdiev**
10:40-11:00	A production method for nanosilica-MMA polymer composite marble: **Samah A Abdulaziz**	Super-Hydrophobic activated carbon containing silica aerogel: **Jafarsadegh Moghaddas**	An enzyme catalyzed injectable hydrogel based on tyramine conjugated tragacanth and gelation: **Moslem Tavakol**	Efficient aligned luminescent electrospun composite nanofibers of europium complex Eu(TTA)3phen and polyethylene oxide: **Subhash Baburao Kondawar**
11:00-11:20	**Coffee Break**			
11:20-11:40	Comparative study of the encapsulation of alendronate sodium by the nanoprecipitation and the double emulsion solvent evaporation technique: **Karim Miladi**	Sol-gel polymerization of silica nanoporous gel: rheological study: **Fatemeh Pashaei Soorbaghi**	A novel approach for anti-platelet drug designing: The modulation of nano-surface: **Suryyani Deb**	Properties of Sized Carbon Fiber Reinforced Poly(Butylene Terephthalate) Composites: **Nevin Gamze Karsli Yilmaz**
11:40-12:00	Radiation Induced Synthesis Of In2O3 Nanoparticles by Thermal Decomposition and by Sol-Gel Methods: **Refaat Mohamed Mahfouz**	Tungsten Oxide Nanocrystalls and NOX Sensing Properties: **Mohammad Izadyar**	Synthesis and investigation of novel chitosan and nano-hydroxyapatite based scaffolds for bone tissue engineering: **Mehmet Şenel**	Optical Properties of PVA:CdCl2. H2O Polymer Electrolytes: **Omed Ghareb Abdullah**
12:00-12:20	Analysis of the fluid flow and material deformation in bulk acoustic wave piezoelectric micropumps: **Ersin Sayar**	Mechanical properties of several polymer (nano) composite packaging films: **Zuzana Dujkova**	Effect of annealing temperature on microstructure and surface properties of titanium oxide (TiO2) nanotubes for biomedical applications: Abdurrahman **Halis Güzelaydin**	Hollow fiber solid phase microextraction assisted by modified nanoparticles:An approach to rational microextraction design: **Zarrin Eshaghi**
12:20-14:00	**Lunch Time**			
14:00-14:45	Plenary Talk: **TAHİR ÇAĞIN (Hall 1)** Optimizing Coupling Coefficients of Materials for Energy Conversion Applications			
14:45-14:50	**Closing remark**			

19TH SEPTEMBER, THURSDAY			
	Hall 5	**Hall 6**	**Hall 7**
09:00 - 09:45	Plenary Talk: **N. SERDAR SARIÇİFTÇİ (Hall 1)**		
	Nanomaterials-3	**Nanomaterials-4**	**Composite materials-2**
	Session Chair: **S. SARIÇİFTÇİ**	Session Chair: **H. ZAREIE**	Session Chair: **V. BULMUS**
10:00-10:20	Nanofibrous filtering materials with catalytic activity: **Ganna Ungur**	Stability of ZnO nanorods coated on the channel wall under continuous flow conditions: **Berrin Ikizler**	A. C. conductivity in modified PMMA-PVC blends: **Vijay V. Soman**
10:20-10:40	Gold nanorods using as nanosensor for sensing of fe(iii) ions in aqueous: **Dinesh Kumar**	Building multilayers on pulp fibres with cationic and anionic nanofibrilated celluloses: **Sedat Ondaral**	Injection parameters optimization for impact properties of calsium carbonate filled polypropylene homopolymer composite material by experimental desing: **Senol Sahin**
10:40-11:00	Pressure effect on elastic properties of spherocobaltite - A nanoscale simulation study: **Brahim Khalil Benazzouz**	Electronic structure and NMR study of selected doped and functionalized graphene: **Azita Nouri**	Smc manufacture with advanced reinforcement material: **Mahmut Bingöl**
11:00-11:20	**Coffee Break**		
11:20-11:40	Modified arcan tests for concrete with carbon nano tubes: **Sıddık Şener**	Nanoporous composites for Chromium(VI) recovery from Water: A Kinetic and Thermodynamic Approach: **Elif Aslı Şenyuva**	Barrier properties of PE, PP, ionomer and EVA (nano)composite films: **Dagmar Merinska**
11:40-12:00	A Monte Carlo study on dose enhancement effect of various paramagnetic nanoshells in brachytherapy: **Toktam Ahmadi Moghaddas**	Fast and economical route to oxides: tio2 nanostructures: **Shah Mohd Ashraf**	Processing of Co-Continuous B4C-Al Composites: **Ayse Kalemtas**
12:00-12:20	Hydrothermal synthesis of Yb+3 Doped Sb6O13 nanocrystals and their properties: **Elham Ghavidelaghdam**	In Situ Generated Fillers: Morphological Investigation of Poly(MA-alt-α-olefin)(C6-18)/Silica Hybrids: **Deniz Demircan Bozdoğan**	Tribological properties of TiAlCrNbN graded composite coating deposited on AISI H13 steel substrate with pulsed Dc closed field unbalanced magnetron sputtering method: **Levent Kara**
12:20-14:00	**Lunch Time**		
14:00-14:45	Plenary Talk: **TAHİR ÇAĞIN (Hall 1)** Optimizing Coupling Coefficients of Materials for Energy Conversion Applications		
14:45-14:50	**Closing remark**		

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İZMİR YÜKSEK TEKNOLOJİ ENSTİTÜSÜ
Türkiye'nin Teknoloji Rotası