

TECHNICAL PROGRAM

MONDAY, JUNE 4TH

Session I – Alumni Hall, Cox Auditorium, and Rooms 32 & 27

A- NANOTECHNOLOGY –Cox Auditorium

Sponsor/Moderator - 3M Company

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| 10:30 | 1 | THE INFLUENCE OF PARTICLE SIZE ON THE FRACTURE TOUGHNESS OF NANOSILICA-FILLED EPOXIES. <u>Yi-Ling Liang</u> and Raymond Pearson |
| 10:50 | 2 | DECORATING OF FIBERS WITH NANOPARTICLES: FROM HYDROPHOBIC TO ULTRAHYDROPHOBIC MATERIALS. <u>Karthik Ramaratnam</u> and Igor Luzinov |
| 11:10 | 3 | HYBRID NANOMATERIALS: ONE DIMENSIONAL NANOPARTICLE ASSEMBLIES. <u>Nikhil Sharma</u> and Darrin J. Pochan |
| 11:30 | 4 | ENCAPSULATION USING HYBRID NANOPARTICLE-BIONANOPARTICLE ASSEMBLIES. <u>Ravisubhash Tangirala</u> , Yunxia Hu, Maisie Joralemon, Qingling Zhang, Jinbo He, Qian Wang, Thomas P. Russell, and Todd Emrick |
| 11:50 | 5 | DSC STUDIES OF MPEG MAGNETIC NANOPARTICLE CRYSTALLIZATION. <u>Qiongdan Xie</u> , André A. Williams, Richard D. Gandour, Sha Yang, Hervé Marand, and Alan R. Esker |

B- CHARACTERIZATION/KINETICS – Room 32

Sponsor/Moderator - Mettler Toledo

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| 10:30 | 6 | CREATION OF POLYMERIC NANOPARTICLES WITH REGULAR SURFACE PATCHES VIA SOLUTION ASSEMBLY KINETICS. <u>Sheng Zong</u> , Hoggang Cui, and Darrin J. Pochan |
| 10:50 | 7 | SURFACE-INITIATED ATOM TRANSFER RADICAL POLYMERIZATION OF STYRENE: OBSERVED TRANSITION FROM FIRST-ORDER TO ZERO-ORDER REACTION KINETICS. <u>Azadeh Samadi</u> , S. Michael Kilbey II, and Scott M. Husson |
| 11:10 | 8 | INFLUENCE OF SELECTIVE SULFONATION ON ACRYLIC GRAFT COPOLYMER MORPHOLOGY. <u>Tomonori Saito</u> , Brian D. Mather, Frederick L. Beyer, and Timothy E. Long |
| 11:30 | 9 | ENHANCING PHOTOLUMINESCENT EFFICIENCY IN CONJUGATED POLYMERS WITH TWO DISSIMILAR SOLVENTS IN SPIN-CASTS. <u>Jaime Sullivan</u> and Bin Hu |
| 11:50 | 10 | INFLUENCE OF CHEMICAL STRUCTURE AND MOLECULAR WEIGHT ON FRAGILITY IN POLYMERS. <u>Kumar Kunal</u> , Sebastian Pawlus, Christopher Robertson, and Alexei Sokolov |

C- STIMULI RESPONSIVE MATERIALS – Room 27

Sponsor/Moderator - Dow Chemical Company

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| 10:30 | 11 | END GROUP EFFECT ON THE CLOUD POINTS OF WELL-DEFINED THERMO-SENSITIVE WATER-SOLUBLE POLYSTYRENICS WITH SHORT PENDANT OLIGO (ETHYLENE GLYCOL) GROUPS. <u>Xuanguang Jiang</u> and Bin Zhao |
| 10:50 | 12 | TRANSPORT OF THERMORESPONSIVE HAIRY PARTICLES BETWEEN AQUEOUS AND ORGANIC PHASES. <u>Dejin Li</u> and Bin Zhao |
| 11:10 | 13 | SYNTHESIS OF THERMAL-RESPONSIVE POLY (N-ISOPROPYLMETHACRYLAMIDE) AND POLY (ACRYLIC ACID) BLOCK COPOLYMERS PREPARED BY POST-FUNCTIONALIZATION OF POLY (N-METHACRYLOXYSUCCINIMIDE). <u>Jeremy M. Rathfon</u> and Gregory N. Tew |

11:30	14	Caleb Dryer
11:50	15	MIXED CHROMOPHORE PERFLUOROCYCLOBUTYL (PFCB) CO-POLYMERS FOR TAILORED LIGHT EMISSION <u>Andrew R. Neilson</u> , Scott T. Iacono, Steve M. Budy, Dennis W. Smith Jr., and John M. Ballato

MONDAY, JUNE 4TH

Session II – Alumni Hall, Cox Auditorium and Room 32

A-FUEL CELLS/ELECTRONIC POLYMERS – Cox Auditorium

Sponsor/Moderator - ACS Division of Polymeric Materials Science and Engineering (PMSE)

2:45	16	HIGHLY CHARGED RIGID POLYELECTROLYTES AND POLYAMPHOLYTES BASED ON STILBENE ALTERNATING COPOLYMERS. <u>Min Mao</u> and S. Richard Turner
3:05	17	SYNTHESIS AND CHARACTERIZATION OF NOVEL ORGANOMETALLIC CONJUGATED POLYMERS. <u>Camila S. Gonçalves</u> and Jonas Gruber
3:25	18	NEW SULFONATED POLY(ARYLENE ETHER SULFONES) CONTAINING THE PERFLUOROCYCLOBUTYL LINKAGE FOR FUEL CELL MEMBRANES. <u>Raul S. Hernandez</u> , Amit Y. Sankhe, Jianyong Jin, S. Suresh, Chris M. Topping, Earl H. Wagener, Stephen Creager, and Dennis W. Smith Jr.
3:45	19	EFFECT OF THERMAL TREATMENT ON PHYSICAL AND CHEMICAL STABILITY OF DISPERSION-CAST NAFION®. <u>Shawn J. Osborn</u> , Brady W. Pitts, Kenneth M. Mauritz, and Robert B. Moore
4:05	20	FUNDAMENTAL CHARACTERIZATION OF ELECTRICALLY-STIMULATED WATER/COUNTERION GRADIENTS IN IONIC POLYMER-METAL COMPOSITE (IPMC) ACTUATORS. <u>Jong Keun Park</u> , Kirt A. Page, Daniel S. Hussey, David L. Jacobson, Muhammad Arif, Anuradha Singh, Marek W. Urban and Robert B. Moore

B-SYNTHESIS OF NOVEL MATERIALS I – Room 32

Sponsor/Moderator -Exxon Mobil

2:45	21	INFLUENCE OF MACROMOLECULAR TOPOLOGY ON NUCLEIC ACID TRANSFECTION. <u>John M. Layman</u> , Dietmar Appelhans, Brigitte Voit, and Timothy E. Long
3:05	22	SELECTIVE ESTER CLEAVAGE IN PHOSPHOLIPIDS -- TOWARDS THE DEVELOPMENT OF PHOSPHATE POLYMERS. <u>Vijitha Mohan</u> , Laura Hubbard, Sarah Crosby, and Keisha B. Walters
3:25	23	SYNTHESIS AND PROPERTIES OF STAR MOLECULES WITH A Γ -CYCLODEXTRIN CORE AND POLYSTYRENE ARMS. <u>Brad J. Busche</u> , Alan E. Tonelli, and C.M. Balik
3:45	24	THE CONTROLLED HOMOGENEOUS ORGANIC SOLUTION POLYMERIZATION OF NEW HYDROPHILIC CATIONIC EXO-7-OXANORBORNENES VIA ROMP WITH $\text{RuCl}_2(\text{PCY}_3)_2\text{CHPH}$ IN A NOVEL 2,2,2-TRIFLUOROETHANOL/METHYLENE CHLORIDE SOLVENT MIXTURE. <u>David A. Rankin</u> and Andrew B. Lowe
4:05	25	AMMONIUM IONENES FOR HIGH PERFORMANCE APPLICATIONS. <u>Erika M. Borgerding</u> and Timothy E. Long

MONDAY, JUNE 4TH

Session III – Alumni Hall, Cox Auditorium and Room 32

A-SYNTHESIS OF NOVEL MATERIALS II – Cox Auditorium

Sponsor/Moderator - *Bausch and Lomb*

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| 4:45 | 26 | INFLUENCE OF HYDROGEN BONDING ON THE PHOTOREACTIVITY OF CINNAMATE FUNCTIONALIZED FLEXIBLE ACRYLIC COPOLYMERS. <u>Matthew P. Cashion</u> and Timothy E. Long |
| 5:05 | 27 | EFFECTS OF HYDROXYL FUNCTIONALITY ON THE PERFORMANCE AND POLYMERIZATION KINETICS OF BLOCK COPOLYMERS VIA NITROXIDE MEDIATED POLYMERIZATION. <u>Rebecca Huyck</u> , Brain Mather, and Timothy Long |
| 5:25 | 28 | LOW SURFACE ENERGY LACTIDE/PERFLUOROPOLYETHER COPOLYMER. <u>Akhilesh Singh</u> , Dahlia Haynes, Amit K. Naskar, Michael J. Drews, and Dennis W. Smith Jr. |
| 5:45 | 29 | RAFT SYNTHESIS AND AQUEOUS SOLUTION PROPERTIES OF PH-RESPONSIVE AB DIBLOCK STYRENIC-BASED COPOLYMERS OF 4-VINYLBENZYLTRIMETHYL-PHOSPHONIUM CHLORIDE WITH N,N-DIMETHYLBENZYL VINYLAMINE. <u>Ran Wang</u> and Andrew B. Lowe |
| 6:05 | 30 | TRIBLOCK COPOLYMERS FOR PHOTOLITHOGRAPHY APPLICATIONS. <u>Susan A. Beck</u> |

B-PROCESSING AND MODIFICATION OF POLYMERS I – Room 32

Sponsor/Moderator - *Varian, Inc.*

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| 4:45 | 31 | SURFACE MODIFICATION OF POLY(ETHYLENE TERPHTHALATE) (PET). <u>Oleksandr Burtovyy</u> |
| 5:05 | 32 | FUNCTIONALIZATION OF USED TIRE RUBBER BY HYDROSILATION AND MODIFICATION OF EPOXY SYSTEMS BY HYDROSILATED RUBBER. <u>Madan Banda</u> , Amit.K.Naskar, Prasanna Perera, Dennis.W.Smith, Jr., Cal Moreland, Tom Hodge, Kevin Wallace, and Mark Pender |
| 5:25 | 33 | PROTEIN ADSORPTION ON MIXED POLYMER BRUSH CONTAINING HYDROPHILIC AND HYDROPHOBIC COMPONENTS. <u>Olha Hoy</u> , Bogdan Zdyrko, Ruslan Burtovyy, Robert Lupitskyy, Sergiy Minko and Igor Luzinov |
| 5:45 | 34 | COMPATIBILIZATION OF POLYMER BLENDS VIA REACTIVE PROCESSING WITH TELECHELIC COPOLYMERS. <u>Earl Ashcraft</u> |
| 6:05 | 35 | CHARACTERIZATION OF GLASS TRANSITION TEMPERATURES IN POLYMER/NANOPARTICLE BLENDS. <u>Ufuk Karabiyik</u> , Rituparna Paul, Michael C. Swift and Alan R. Esker |

WEDNESDAY, JUNE 6TH

Session IV – Alumni Hall, Cox Auditorium and Room 32

A-BIOMATERIALS – Cox Auditorium

Sponsor/Moderator –*Ashland Global Research*

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| 10:30 | 36 | SELF-ASSEMBLING PEPTIDE SCAFFOLDS FOR IN VITRO BONE TISSUE ENGINEERING APPLICATIONS. <u>Aysegul Altunbas</u> , Hassna R Ramay, Lisa A. Haines, Monica Branco, Joel P Schneider, Darrin J Pochan |
| 10:50 | 37 | A GALACTURONATE POLYSACCHARIDE DERIVED FROM <i>ALOE VERA</i> CAPABLE OF <i>IN-SITU</i> GELATION. STRUCTURAL CHARACTERIZATION AND SOLUTION PROPERTIES. <u>Shawn McConaughy</u> |
| 11:10 | 38 | ANTIMICROBIAL ACTIVITY AND MEMBRANE-DISRUPTION ABILITY OF AMPHIPHILIC POLYMETHACRYLATE DERIVATIVES. <u>Edmund Palermo</u> and Kenichi Kuroda |
| 11:30 | 39 | ADSORPTION BEHAVIOR OF PULLULAN DERIVATIVES ONTO MODEL CELLULOSE SURFACES VIA SURFACE PLASMON RESONANCE SPECTROSCOPY. <u>Zelin Liu</u> , Abdulaziz Kaya, Wolfgang G. Glasser, and Alan R. Esker |
| 11:50 | 40 | FUNCTIONAL MATERIALS VIA SELF-ASSEMBLY OF POLYPEPTIDE. <u>Wang Xinren</u> |

B-PROCESSING AND MODIFICATION OF POLYMERS II – Room 32

Sponsor/Moderator -*Viscotek*

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| 10:30 | 41 | PREPARATION AND SUPRAMOLECULAR ENGINEERING OF ALTERNATING THIOPHENE-PERFLUOROARENE COPOLYMERS AND FULLY/PARTIALLY FLUORINATED SMALL-MOLECULE POLYCYCLICS. <u>Yongfeng Wang</u> |
| 10:50 | 42 | IMPACT OF VACUUM FLASH EVAPORATION ON PROPERTIES OF RECOVERED POLYVINYL ALCOHOL SIZE AND ENVIRONMENT. <u>Kishor Gupta</u> |
| 11:10 | 43 | MAPPING PHASE BEHAVIOR OF ULTRATHIN, CROSS-LINKED POLY(N-ISOPROPYLACRYLAMIDE) LAYERS WITH NEUTRON REFLECTION. <u>Ajay Vidyasagar</u> |
| 11:30 | 44 | SYNTHESIS AND CHARACTERIZATION OF PHOSPHONIUM-BASED IONENES. <u>William H. Heath</u> , Matthew Green, and Timothy E. Long |
| 11:50 | 45 | POLY(D,L-LACTIDE) WITH PRIMARY HYDROXYL ENDGROUPS. <u>Scott J. Moravek</u> , Tim R. Cooper, and Robson F. Storey |

WEDNESDAY, JUNE 6TH

Session V – Alumni Hall, Cox Auditorium and Room 32

A-SYNTHESIS OF NOVEL MATERIALS III – Cox Auditorium

Sponsor/Moderator – *Rohm and Haas*

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| 2:45 | 46 | SYNTHESIS AND CHARACTERIZATION OF RENEWABLE COPOLYMERS: POLY(GLYCEROL-FUMARATE) AND POLY (TRIMETHYLENE-MALONATE). <u>Matthew D. Rowe</u> |
| 3:05 | 47 | ELECTROSPINNING OF LOW MOLAR MASS AMPHIPHILES AND CATIONIC POLYELECTROLYTE FOR FUNCTIONAL APPLICATIONS. <u>Matthew T. Hunley</u> and Timothy E. Long |
| 3:25 | 48 | SPECIALTY COATINGS FOR AUTOMOTIVE AND OPTICAL FIBER APPLICATIONS, VIA SELF-HEALING POLYURETHANES AND PERFLUOROCYCLOBUTYL (PFCB) AROMATIC ETHER POLYMERS. <u>Stephen M. Budy</u> , Scott T. Iacono, John Ballato, and Dennis W. Smith, Jr. |

B-CHARACTERIZATION OF POLYMERS – Room 32

Sponsor/Moderator - *TA Instruments*

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| 2:45 | 49 | MELT SYNTHESIS AND CHARACTERIZATION OF ALIPHATIC LOW- T_g POLYESTERS FOR ADHESIVE APPLICATIONS. <u>Gozde Ozturk</u> , A.J. Pasquale, and Timothy E. Long |
| 3:05 | 50 | Surface RHEOLOGY IN TWO-DIMENSIONAL POLYMER SYSTEMS WITH NANOFILLERS. <u>Wen Yin</u> , Sarah M. Huffer, Jianjun Deng, John R. Hottle, Hyong-Jun Kim, and Alan R. Esker |
| 3:25 | 51 | CONTROLLED ASSEMBLY OF POLY(ETHYLENE GLYCOL)-FUNCTIONALIZED GOLD NANOPARTICLES AT OIL-WATER INTERFACES. <u>Elizabeth Glogowski</u> , Ravisubhash Tangirala, Jinbo He, Thomas P. Russell, and Todd Emrick |
| 3:45 | 52 | PREDICTION OF DYEABILITY FOR HYDROPHOBIC FIBERS USING MOLECULAR DYNAMICS SIMULATIONS AND SOLUBILITY PARAMETER APPROACHES. <u>Murari Gupta</u> , Fred Cook and Nolan Etters |