

Sunday, June 14, 2009

Sunday, June 14, 2009, 6:00 PM - 8:00 PM

Welcome Reception

Auditorium & North Foyer, Lerner Hall

Monday, June 15, 2009

Monday, June 15, 2009, 8:00 AM - 9:05 AM

Plenary Lecture

Auditorium, Lerner Hall

Organizer: Ponisseril Somasundaran

8:00 1 The Renaissance of Colloid Chemistry through the Synthesis of Nanomaterials. **Gabor A. Somorjai**

Monday, June 15, 2009, 9:05 AM - 9:30 AM

Coffee Break

Auditorium North Lobby, Lerner Hall

Monday, June 15, 2009, 8:00 AM – 4:00 PM

Coffee Break

Carleton Lounge, Mudd Bldg.

Monday, June 15, 2009, 9:30 AM - 12:15 PM

Biocolloids for Imaging and Drug Delivery I: Nanoparticles

Rm. 1024, Mudd Bldg.

Organizers: Mark Borden and Steven P. Wrenn

9:30 2 Next Generation Nano Carriers for Multifunctional Drug Delivery, Imaging, And Targeting- How Do We Make Them? **Robert K. Prud'homme (Keynote)**

10:00 3 Pharmaceutical Nanomaterials; Novel Delivery Systems for Sensitive Bio-Materials. **J. C. Mitchell**

10:20 4 Multi-Functional Nanoparticle-Based Targeted Drug Delivery for Brain Cancer. **Ki-Bum Lee**

10:40 5 Nanocolloids for Drug Delivery and Imaging. **Keith P. Johnston**

11:00 6 Multimodal Nanoparticles for Noninvasive Bio-Imaging. **Parvesh Sharma**

11:20 7 Composite Nanoparticles Containing Upconverting Phosphors for Photodynamic Therapy. **Stephanie J. Budijono**

11:40 8 Formation of Magnetite Clusters Using a Multi-Inlet Vortex Mixer. **Raquel Mejia-Ariza**

12:00 9 Synthesis of Calcium Carbonate Nanoparticles in the Presence of Proteins as Stabilizing and Functionalizing Agents. **Herley Casanova**

Monday, June 15, 2009, 9:30 AM - 11:40 AM

Biomineralization I

Rm. 633, Mudd Bldg.

Presiders: George Nancollas and John H. Harding

9:30 10 Biomineralization-Demineralization-Remineralization Phenomena and Modern Strategies for the Isolation of Organic Matrices. **Hermann Ehrlich (Keynote)**

10:00 11 Biological Controls in Biomineratization. **Ruikang Tang**

10:20 12 The Organization of Hierarchical Calcium Phosphate Microstructures by Amelogenin. **George Nancollas**

10:40 13 DMP1 An Acidic Macromolecule Can Regulate Biomineratization Process. **Anne George**

11:00 14 Identification of Crystal-Binding Sequences In Osteopontin. **Graeme K. Hunter**

11:20 15 X-Ray Microscopy Studies of the Influence of Statherin and Related Salivary Peptides On Hydroxyapatite and Enamel De- and Remineralisation. **Paul Anderson**

Monday, June 15, 2009, 9:30 AM - 12:55 PM

Biosurfactants and Other Novel Surfactants I

Rm. 1127, Mudd Bldg.

Organizer: Orlando J. Rojas

Presider: Krister Holmberg

9:30 16 Self-Assembled Sugar-Based Nano-Gels. **George John (Keynote)**

9:55 17 Controlling Colloid and Microemulsion Stability with Light. **Julian Eastoe**

10:25 18 Polymerisable Surfactants. **P.D.I Fletcher**

10:50 19 Interfacial Properties of Lipopeptide Biosurfactant. **Jun Wu**

11:15 20 Amino Acid-Based Surfactants. **Romain Bordes**

11:40 21 Study of the Adsorption at Different Surface of Amino Acid-Based Surfactant by Complementary Techniques: QCM-D And SPR. **Romain Bordes**

12:05 22 New Cationic Surfactants Derived From Sugars: From Design to Applications. **Isabelle Rico-Lattes**

12:30 23 Polymers in Disperse Systems. **Tharwat F. Tadros**

Monday, June 15, 2009, 9:30 AM - 12:15 PM

Clustering I

Rm. 900, Fairchild Bldg.

Presiders: Tony Dinsmore and Paul Dubin

9:30 Welcoming Remarks.

9:35 24 Equilibrium Cluster Formation In Concentrated Protein Solutions. **Anna Stradner (Keynote)**

10:15 25 Domain/Raft Exploration In Lipid Mono- & Bilayer by Freeze-Fracture Electron Microscopy On Nano-Resolution Scale. **Brigitte Papahadjopoulos-Sternberg**

10:35 Break.

10:55 26 Tuning of the Finite Size of Globular Clusters of Proteins And Polyelectrolytes of Opposite Charges by Electrostatic Screening. **Fabrice Cousin**

11:15 27 Study of the Short-Range Attraction of Globular Proteins In Solution. **Yun Liu**

11:35 28 Clustering Versus Percolation in the Assembly of Colloids with Long DNA. **Nienke Geerts**

11:55 poster sound-bites.

Monday, June 15, 2009, 9:30 AM - 12:10 PM

Colloid Rheology and Microrheology I

Rm. 700, Fairchild Bldg.

Organizers: William Russel and Jan Vermant

Presider: Eric Furst

9:30 29 Rheology of Colloidal Star Glasses. **Dimitris Vlassopoulos (Keynote)**

10:10 30 Can We Make Money with the Re-Entry Phenomenon in Concentrated Colloidal Dispersions. **Norbert Willenbacher**

10:30 31 Delayed Collapse of Arrested Colloidal Depletion Gels by Vane Rheometry. **M.A. Faers**

10:50 32 Shear Elasticity of Dense Attractive Colloids: Homogeneous And Heterogeneous Glasses. **Alessio Zaccone**

11:10 33 The Phase Behaviour And Kinetics of Attractive Rod-Like Viruses Under Shear Flow. **Peter Holmqvist**

11:30 34 Scaling of Strain Recovery In the Aging of An Attractive Colloidal Gel. **Ajay Singh Negi**

11:50 35 Different Mechanisms for Dynamical Heterogeneities In Colloidal Gels And Glasses. **Emanuela Del Gado**

Monday, June 15, 2009, 9:30 AM - 12:20 PM

Colloidal Gels and Microgels I

Rm. 924, Mudd Bldg.

Organizer: Martin Snowden

Presider: Brian Vincent

9:30 36 Enzymatically Synthesized Sugar Surfactants: As Edible Oil Structuring Agents. **Swapnil R. Jadhav**

9:50 37 Rheological Behavior of Cationic Acid-Swellable Copolymer Latexes. **Damien Dupin**

10:10 38 pH-Responsive Microgel Dispersions for Repairing Damaged Load-Bearing Soft Tissue. **Brian R. Saunders (Keynote)**

10:40 39 Properties of Packed Microgel Suspensions – Soft And Deformable Can Really Make a Difference. **Alberto Fernandez-Nieves**

11:10 40 Preparation and Characterization of Novel Biocompatible Porous Materials Prepared by Templating In Highly Concentrated Emulsions. **Jordi Esquena**

11:30 41 Experimental Investigation of Active Polymer Microsponges. **Ales Zadrazil**

11:50 42 Stimuli-Sensitive, Multicomponent Microgels. **Walter Richtering (Keynote)**

Monday, June 15, 2009, 9:30 AM - 12:20 PM

Electrokinetics & Microfluidics I

Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna

Presider: Todd M. Squires

9:30 43 Multiphase Flows in Confined Systems: (I) a Model for Separation-Driven Coalescence and (II) Shear-Induced Dispersion of Nonspherical Particles. **Howard A. Stone (Keynote)**

10:00 44 Microfluidic Colloidal Island Self-Assembly and Erasure. **Leslie Yeo**

10:20 45 Impact of Surfactant Sorption Kinetics On Microscale Tipstreaming. **Shelley L. Anna**

10:40 46 Microfluidic Production of Quantum Dot Embedded Polymeric Microbeads. **Shahab Shojaei-Zadeh**

11:00 47 Microfluidic Interfacial Destabilization and Atomization. **Leslie Yeo**

11:20 48 How to Control the Shape of the Deposit Left by An Evaporating Colloidal Droplet?. **Daniel Attinger**

11:40 49 Suspension Transport, Migration, and Structure In Microchannel Mixers. **Changbao Gao**

12:00 50 Two Phases Flow in Porous Media Model: Trapping at Low Capillary Number. **Christophe Cottin**

Monday, June 15, 2009, 9:30 AM - 11:40 AM

Interfacial Forces and Fields I

Rm. 834, Mudd Bldg.

Organizers: Sven-Holger Behrens and Eric R. Dufresne

Presider: Pierre M. Adler

9:30 51 Aqueous Interfaces: Slip, Viscosity And Reconstruction. **Roland R. Netz (Keynote)**

10:00 52 Nanofluids and Nanochannels. **Elisa Riedo**

10:20 53 Properties of Aqueous Solutions Under Interfacial And Magnetic Fields. **Sumio Ozeki**

10:40 54 Pattern Formation In Suspensions of Rods Induced by Flow and Electric Fields. **Jan K. G. Dhont**

11:00 55 Tuning Surface-Induced Layer Transition of Liquid Crystals Via Alkane. **Lijuan Zhang**

11:20 56 Rheological Study of Liquid Crystal Confined Between Mica Surfaces Under the Electric Field. **Shinya Nakano**

Monday, June 15, 2009, 9:30 AM - 12:00 PM

Mechanisms of Bacterial Adhesion I

Rm. 825, Mudd Bldg.

Organizers: Sharon Walker and Nathalie Tufenkji

Presider: Terri Camesano

9:30 57 Adhesion And the Mechanism of Biofilm Tolerance to Antimicrobial Agents. **Kim Lewis (Keynote)**

10:00 58 The Influence of a Polymer Brush Coating on Bacterial Adhesion, Growth and Antibiotic Treatment. **Willem Norde**

10:20 59 Bacterial Spore Killing by Dodecylamine: Examining the Role of Self-Assembly. **Stephanie A. Marcott**

10:40 60 Adhesion of Spores On Surfaces In Atmospheric Environments. **Eunhyea Chung**

11:00 61 Real Time Physiology during Detachment of Biofilms Exposed to Chemical Stress. **Eric S. McLamore**

11:20 62 Relationship Between Bacterial Adhesion to a Surface And Cellular Bioenergetics. **Derick G. Brown**

11:40 63 The Impact of Bacterial Adhesion On Biofilm Formation In Cooling Towers. **Yang Liu**

Monday, June 15, 2009, 9:30 AM - 12:00 PM

Novel Measurement Tools & Methods I

Rm. 233, Mudd Bldg.

Organizers: Mark Bumiller and Dietmar Lerche

Presider: Andrei Dukhin

9:30 64 Dynamics of Liquid Interfacial Layers as Studied by Capillary Pressure Techniques. **Reinhard Miller (Keynote)**

10:00 65 Particle Characterization Using Elliptically Polarized Light Scattering. **Mark Bumiller**

10:20 66 2-Focus Fluorescence Correlation Spectroscopy a New Technique to Study Colloids. **Walter Richtering**

10:40 67 High Resolution Temperature Measurement In Microfluidic Systems Using the Brownian Motion of Colloids. **Victor Breedveld**

11:00 68 Use of Acoustic Spectroscopy for Characterization of d-Limonene/ Water Microemulsions for Improved Oil and Gas Production. **Andrei S. Zelenov**

11:20 69 Time-Resolved X-Ray Microscopy of Nanoparticle Aggregates Under Oscillatory Shear. **Günter K. Auernhammer**

11:40 70 Human Erythrocyte Aggregation And Deformation Probed by Incoherent Light Transport. **Christophe Baravian**

Monday, June 15, 2009, 9:30 AM - 11:40 AM

Polymer-Surfactant Interactions I

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presider: Frank Blum

9:30 71 Polymer-Surfactant Interactions: The NMR Picture. **Olle Söderman (Keynote)**

10:00 72 The Interaction of Poly(ethylene glycol) with Dioctadecyldimethylammonium Bromide Vesicles. **Eloi Feitosa**

10:20 73 The Interaction of Sodium Dodecyl Sulfate with Poly(ethylene glycol) Studied by the Krafft Phenomenon. **Eloi Feitosa**

10:40 74 Polymer- Nano-Vesicle Interactions. **Basavaraja Madivala Gurappa**

11:00 75 Competitive Interactions of Anionic Surfactants with Cationic Polymer Jaguar. **Bingquan Li**

11:20 76 Polymer-Induced Lamellar-to-Isotropic Phase Transition in the System of TX-100/n-C8H17OH/H2O. **Lingling Ge**

Monday, June 15, 2009, 9:30 AM - 12:15 PM

Single Molecule Chemistry I

Rm. 227, Mudd Bldg.

Organizers: John Kitchin and James B. Miller

Presider: Charles Sykes

9:30 77 Reactions of Single Atoms And Molecules by Excitation of Quantum States Using the STM.
Miguel Salmeron (Keynote)

10:15 78 Observing Actuating Nanocars by STM. **Kevin Kelly**

10:40 79 Quantitative Measurements of Adsorbate Interactions and Dynamics: Intermolecular Potentials and Functional Properties. **Paul S. Weiss**

11:05 80 Quantification of Chemical Forces On the Atomic Scale Using 3D-AFM. **Todd C. Schwenemann**

11:30 81 Self-Organization Spanning Single Molecule Dynamics at Surfaces through Hierarchical Materials. **Steven J. Sibener**

11:55 82 A Quantitative Single-Molecule Analysis of Thioether Molecular Rotors. **Ashleigh E. Baber**

Monday, June 15, 2009, 9:30 AM - 12:25 PM

Structured Lipids I

Rm. 833, Mudd Bldg.

Organizer: Nissim Garti

9:30 83 Crystallizing Membrane Proteins in Lyotropic Lipid Mesophases for Use in Structure-Function Studies. **Martin D. Caffrey (Keynote)**

10:05 84 Lyotropic Liquid Crystals In Foods: Structural, Rheological And Thermodynamic Properties. **Raffaele Mezzenga**

10:45 85 In Vivo Demonstration of Lyotropic Liquid Crystalline (LLC) Mesophases From Structured Lipids as Drug Delivery Systems. **Ben J. Boyd**

11:05 86 Nanostructured Lipid Droplets: Structural Hierarchies and Transfer Kinetics of Components. **Otto Glatter**

11:25 87 Solubilization of Lysosome In Modified Novel Reverse Hexagonal Mesophases. **Nissim Garti**

11:45 88 Colloidal Delivery Systems for Micronutrients and Nutraceuticals. **Krassimir Velikov**

12:05 89 Novel Tubular Helical Liposomes Containing Skin Lipids. **Grace Tan**

Monday, June 15, 2009, 9:30 AM - 12:10 PM

Structures at Interfaces with Liquids I

Rm. 337, Mudd Bldg.

Organizers: Kenneth B. Eisenthal and Franz Geiger

9:30 90 Dynamics of Water Interacting with Ions and Interfaces. **Michael D. Fayer (Keynote)**

10:10 91 Structural and Dynamical Properties of Water at the Interfaces with Lipid Bilayers. **Max L. Berkowitz**

10:50 92 Structure And Dynamics of Interfaces And Surfaces. **Nicholas Turro**

11:30 93 Structure, Organization and (possible) Vibrational Energy Transfer at Solid/Liquid Interfaces. **Robert A. Walker**

Monday, June 15, 2009, 9:30 AM - 12:15 PM

Thin Liquid Films Including Bilayers I

Davis Auditorium, Schapiro Bldg.

Organizers: Dimo Platikanov and Cosima Stubenrauch

Presider: Cosima Stubenrauch

9:30 94 Emulsion Nanofilms Stabilized by Polymeric Surfactants. **Dotchi Exerowa (Keynote)**

10:00 95 Tuning the Film and Foaming Properties of the Surfactant Mixture C₁₂ TAB / C₁₂ DMPO. **Enda Carey**

10:20 96 DLVO And Marangoni Effects In Freestanding Surfactant-Free Aqueous Films. **Roger G. Horn**

10:40 97 Thin Wetting Films From Aqueous Solutions of Polymeric Surfactants. **Dimo Platikanov**

11:00 break.

11:15 98 Electrohydrodynamic Instabilities in Free Emulsion Films. **Farshid Mostowfi**

11:35 99 Hydrophilic Polymers Reverse the Effect of Albumin and Restore the Surface Activity of Lung Surfactants in Monolayer and Foam Films. **Georgi As. Georgiev**

11:55 100 Experimental Investigations of Foam Drainage. **Pyotr Kruglyakov**

Monday, June 15, 2009, 2:00 PM - 4:25 PM

Biocolloids for Imaging and Drug Delivery II: Drug Delivery

Rm. 1024, Mudd Bldg.

Organizers: Mark Borden and Steven P. Wrenn

2:00 101 Nanostructured Polymer Capsules for Biomedical Applications. **Frank Caruso (Keynote)**

2:30 102 Controlled Release of Oligonucleotides From a Thermosensitive Hydrogel. **James O. Hardin IV**

2:50 103 Chemically Triggered Biodelivery Using Metal-Organic Sol-Gel. **Vadim G. Kessler**

3:10 104 A Colloidal Science Approach to Ultrasound-Based Drug Delivery. **Eleanor F. Small**

3:30 105 Synthesis ,Characterization of Re-188-Tin Nanocolloidal Aggregated Microparticles for Therapeutic Targeted Delivery. **Gurupad Bandopadhyaya**

3:50 106 Characterization of Binding Effects of QDs to Cancer Marker Proteins Via AFM and SPR. **Mikala Shremshock**

4:10 107 The Long-Term Release of Antibiotics From Monolithic Nonporous Polymer Implant -- Modeling and Testing for Use as Tympanostomy Tube (TT) for the Treatment of Otitis Media (OM). **S. S. Dukhin**

Monday, June 15, 2009, 2:00 PM - 4:10 PM

Biomineralization II

Rm. 633, Mudd Bldg.

Presiders: George Nancollas and John H. Harding

2:00 108 What Can Simulation Contribute to the Understanding of Biomineralisation? **John H. Harding (Keynote)**

2:30 109 In Situ Atomic Force Microscopy On the Interfacial Interactions of Model Polymers with the Mineralizing Surfaces of Calcium Carbonate. **II Won Kim**

2:50 110 Biomineralization of Uranium And Nanocluster Formation by Microorganisms. **Sonja Selenska-Pobell**

3:10 111 Newly Emerging Nanoscopic Pathways in the Crystallisation of BaCO₃ Nanoparticles of Different Crystal Structure and Morphology within Water-in-Oil Microemulsions. **Wiebke F.C. Sager**

3:30 112 Templated Crystallization of His-Proteins Using Dynamic Cyclodextrin:NTA-Inclusion Ligand Interfaces. **David H. Thompson**

3:50 113 Biomimetic Growth of Non-Biogenic Semiconductor and Ceramic Materials. **R. Lloyd Carroll**

Monday, June 15, 2009, 2:00 PM - 4:45 PM
Biosurfactants and Other Novel Surfactants II
Rm. 1127, Mudd Bldg.

Organizers: Krister Holmberg and Orlando J. Rojas
Presider: Julian Eastoe

2:00 114 Charge-Charge Complexes of Modified Hydrocolloids and Proteins as Emulsifiers for Double Emulsions. **Nissim Garti (Keynote)**

2:40 115 Biobased Surfactants: Overview of Basic Research and Industrial Activity. **Douglas G. Hayes**

3:05 116 Surfactant-Like Materials From Waste Biomass. **Edgar J. Acosta**

3:30 117 Solvent-Free Enzymatic Synthesis of Saccharide-Fatty Acid Ester Biosurfactants. **Ran Ye**

3:55 118 PFG-NMR Investigation of Liposome Systems Containing Hydrotrope. **Fadwa Odeh**

4:20 119 Lignins as Polymeric Surfactants. **Orlando J. Rojas**

Monday, June 15, 2009, 2:00 PM - 4:45 PM
Clustering II
Rm. 900, Fairchild Bldg.

Presiders: Tony Dinsmore and Paul Dubin

2:00 Introductory Remarks.

2:05 120 Finite-Size Objects Stabilized by Electrostatic Interactions. **Willem K. Kegel (Keynote)**

2:45 121 Model Colloidal Suspensions with Competing Interactions Exhibiting Phase Transitions to Modulated Phases. **Andrew John Archer**

3:05 Break.

3:25 122 Nucleation, Aggregation, Crystallization, and Glass Formation: Examples of Clustering. **Charles F. Zukoski**

3:45 123 Mesophase Assemblies of Isotropic, Clustering Particles. **Gregory Grason**

4:05 124 Gelation of Particulate Systems. **Christopher M. Sorensen**

4:25 125 Random Packing and Colloidal Crystallization of Monodisperse Model Ellipsoids. **Laura Rossi**

Monday, June 15, 2009, 2:00 PM - 4:40 PM

Colloid Rheology and Microrheology II

Rm. 700, Fairchild Bldg.

Organizers: Eric Furst, William Russel, and Jan Vermant

Presider: Reghan J. Hill

2:00 126 Rheological Properties of Wet or Dry Granular Media. **Pierre M. Adler**

2:20 127 Viscous Friction Inside Steadily Sheared Foams and Concentrated Emulsions. **Nikolai D. Denkov**

2:40 128 Shear Thinning In Suspensions of Soft Microgel Spheres. **Hans M. Wyss**

3:00 129 Effect of the Particle Softness Over the Rheological Behavior of Ionic Microgel Suspensions. **Benjamin Sierra-Martin**

3:20 130 Structural Transitions of Magnetorheological Fluids In Microgravity. **Paula A. Vasquez**

3:40 131 Electrical And Classical Microrheology of Polyelectrolyte Hydrogel Composites. **Aliasghar Mohammadi**

4:00 132 Network Formation in Liquid Crystal-Colloidal-Suspensions. **Günter K. Auernhammer**

4:20 133 Rheological Characterization of a Discotic Colloidal Clay at Bulk and Microscopic Scales. **Jason P. Rich**

Monday, June 15, 2009, 2:00 PM - 4:20 PM

Colloidal Gels and Microgels II

Rm. 924, Mudd Bldg.

Organizer: Martin Snowden

Presider: Brian Vincent

2:00 134 Surface Engineering of Stimuli-Responsive Microgels Via Layer-by-Layer Assembly of Polyelectrolytes. **John E. Wong**

2:20 135 Preparation and Properties of Natural Polymers Microgels. **Haruma Kawaguchi**

2:40 136 Compositional Analysis and Applications of Colloidal Microgels. **M. J. Snowden (Keynote)**

3:00 137 A Comparative Study of Swelling Behaviour of Super Absorbent Hydrogels Prepared by Gamma Radiation & Solution Polymerization. **Arun Kumar Nagpal**

3:20 138 Emulsion Gels Comprising Crystallized Droplets: The Role of Interfacial Crystals. **Fernando Leal-Calderon**

3:40 139 Withdrawn.

4:00 140 Polyvinylamine Microgels Have Interesting Properties but Are Difficult to Prepare. **Robert Pelton (Keynote)**

Monday, June 15, 2009, 2:00 PM - 4:20 PM

Electrokinetics & Microfluidics II

Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna

Presider: Shelley L. Anna

2:00 141 Microfluidic Synthesized Silica Beads and Their Bioconjugation. **Gerson Aguirre**

2:20 142 Colloid Aggregation as a Tool to Optimize Surface Enhanced Raman Scattering In Microfluidics Devices. **Laurent Servant**

2:40 143 Guided Colloidal Crystallization in a Galvanic Micro Reactor. **Linda Jan**

3:00 144 Patchy Particles as Osmotic Motors. **Amar B. Pawar**

3:20 145 Microfluidic Combinatorial Approaches to Investigate the Function of Microenvironmental Cues On Human Embryonic Stem Cell (hESC) Fate. **Ki-Bum Lee**

3:40 146 Microfluidic PhaseChip for Exploration of Multidimensional Phase Diagrams. **Seila Selimovic**

4:00 147 On Magnetic Separation of Spheroidal Nanoparticles. **Gautam Mukhopadhyay**

Monday, June 15, 2009, 2:00 PM - 4:10 PM

Interfacial Forces and Fields II

Rm. 834, Mudd Bldg.

Organizers: Pierre M. Adler and Eric R. Dufresne

Presider: Sven-Holger Behrens

2:00 148 Nontrivial Coupling Between Van Der Waals and Electrostatic Interactions In Electrolyte Systems. **Roland Kjellander (Keynote)**

2:30 149 Measuring Femtonewton and Piconewton Forces On Many Particles with Light and Noise. **Eric R. Dufresne**

2:50 150 Magnetic Tweezer Sensor for Measuring Binding Strength of Nonmagnetic Particles. **Randall Erb**

3:10 151 Aggregation and Breakage Phenomena In Sheared Colloidal Suspensions. **Massimo Morbidelli**

3:30 152 Rheology of Interfaces at Microscopic Length Scales. **Eric R. Weeks**

3:50 153 Determination of Interaction Potentials in Colloidal Monolayers Using the Inversion of 2D Pair Correlation Functions. **Adam Daniel Law**

Monday, June 15, 2009, 2:00 PM - 4:30 PM

Mechanisms of Bacterial Adhesion II

Rm. 825, Mudd Bldg.

Organizers: Terri Camesano and Nathalie Tufenkji

Presider: Sharon Walker

2:00 154 AFM Force Analysis of Bacterial Interaction Forces with Surfaces. **Henk J. Busscher (Keynote)**

2:30 155 Effect of Surface Topography On Adhesion of Colloids And Bacteria. **Jianwei Ma**

2:50 156 Establishing a Standard Protocol of MATH Test for Microbial Surface Hydrophobicity Assessment. **Gaurav Saini**

3:10 157 A Correlation Between the Nanoscale Adhesion of Listeria Monocytogenes to Surfaces and Their Virulence. **Nehal I. Abu-Lail**

3:30 158 Activity of Cranberry Metabolites in Urine against Bacterial Adhesion. **Paola A. Pinzon-**

Arango

3:50 159 Bacterium-Substratum Bond Maturation Measured Non-Destructively and Real Time Using a Novel QCM-D Approach. **Adam L. J. Olsson**

4:10 160 Chemotactic Response of *P. Aeruginosa* to Diffusive Chemical Gradients Inside a Microfluidic Chamber. **Javier Atencia**

Monday, June 15, 2009, 2:00 PM - 4:30 PM

Novel Measurement Tools & Methods II

Rm. 233, Mudd Bldg.

Organizers: Andrei Dukhin and Mark Bumiller

Presider: Dietmar Lerche

2:00 161 Evanescent Wave AFM Measurements. **William Ducker (Keynote)**

2:30 162 Systems for Characterisation of Nanoparticle Dispersions. **Jim Munhall**

2:50 163 Withdrawn.

3:10 164 Electrical Sensing Zone Analytics of Colloidal Systems. **John A. Costello**

3:30 165 Molecular Mapping by Low-Energy-Loss EFTEM Imaging. **Elisângela M. Linares**

3:50 166 Quantitative Analysis of Polymer Colloids by Cryo-Transmission Electron Microscopy. **Matthias Ballauff**

4:10 167 In-Situ Monitoring of the 2D Aggregation Process of Thiol-Coated Gold Nanoparticles Using Optical Waveguide Spectroscopy. **Hélène Yockell-Lelièvre**

Monday, June 15, 2009, 2:00 PM - 4:00 PM

Polymer Surfactant Interactions II

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presider: Olle Söderman

2:00 168 pH Dependent Polyampholyte-SDS Interactions in Water-in-Oil Microemulsions and in Diluted Aqueous Solutions. **Joachim Koetz**

2:20 169 Variation In Emulsion Stabilization Behavior Of Hybrid Silicone Polymers With Change In Molecular Structure. **Ravi Kulkarni**

2:40 170 Effect of Polymeric Emulsifiers on SYNTHESIS and Properties of Crosslinkable Copolymers. **Indira Nigam**

3:00 171 A Study of Fluorinated Polymerisation. **Martha K. Tomlinson**

3:20 172 Molecular Weight Dependence of Non-Surface Activity of Ionic Amphiphilic Block Copolymers. **Hideki Matsuoka**

3:40 173 Effect of the Interaction Between Oppositely Charged Polymers and Surfactants on the Deposition of Solid Particles to Surfaces. **Jordan Petkov**

Monday, June 15, 2009, 2:00 PM - 4:45 PM

Structured Lipids II

Rm. 833, Mudd Bldg.

Organizer: Nissim Garti

2:00 174 Bicontinuous Inverted Cubic Phases and Membrane Fusion: a Tale of Biology and Lipid Phase Behavior. **David Siegel**

2:30 175 Phase Transformations of Multicompartment Lipid Nanovector Systems. **Angelina Angelova**

3:00 176 Unraveling the Structure of Structured Lipids by Cryo-EM. **Dganit Danino**

3:30 177 Stratum Corneum Lipids: Interaction with Different Lipid-Surfactant Nanostructures. **Olga Lopez**

3:50 178 Structures In Complex Food Emulsions, as Related to End-Use Properties. **Perla Relkin**

4:10 179 Degree of Lipid Segregation and Water Penetration, as a Result of Temperature Variation In a Binary Lipid Mixture. **Andrea C. Hamill**

4:30 180 Environmentally Friendly Soy Lecithin Based Agrochemical Products. **Shireen Baseeth**

Monday, June 15, 2009, 2:00 PM - 4:40 PM

Structures at Interfaces with Liquids II

Rm. 337, Mudd Bldg.

Organizers: Kenneth B. Eisenthal and Franz Geiger

2:00 181 Photoelectrokinetic Energy Conversion In Liquid Water Microjets: An Interfacial Phenomenon. **Richard J. Saykally (Keynote)**

2:40 182 Ions at Aqueous Interfaces: From Water Surface to Hydrated Proteins. **Pavel Jungwirth**

3:20 183 Ionic Binding of Na⁺ Versus K⁺ to Palmitic Acid Monolayers Studied by Vibrational Sum Frequency Spectroscopy. **Heather C. Allen**

4:00 184 The Vibrational Dynamics of Ordered Interfacial Water. **Eric U. Borguet**

4:20 185 Nano-Micro Particle/ Aqueous Interfaces. **Kenneth B. Eisenthal**

Monday, June 15, 2009, 2:00 PM - 4:40 PM

Surface Alloys

Rm. 227, Mudd Bldg.

Organizer: James B. Miller

Presider: John Kitchin

2:00 186 Measuring and Relating the Electronic Structure of Nonmodel Supported Catalytic Materials to Their Performance. **Suljo Linic (Keynote)**

2:30 187 Catalytic Activity and Stability of Bimetallic Surfaces. **Jingguang G. Chen**

2:55 188 Atomic-Scale Surface Chemistry of Catalytically Important Bimetallic Alloys. **Charlie Sykes**

3:20 189 Catalyzing the Catalyst: Hydrogen Dissociation and Spillover On Pd Impurities In Cu(111) but Not In Au(111). **John Kitchin**

3:40 190 High Throughput Study of Surface Segregation in PdCu Alloys. **James B. Miller**

4:00 191 Methods for Modeling Reaction Dynamics at Surfaces Over Long Time Scales. **Graeme Henkelman**

4:20 192 AgCl Monolayers On Au(111): Novel, Ultra-Stable and Atomically-Flat Surfaces. **Erin V. Iski**

Monday, June 15, 2009, 2:00 PM - 4:05 PM

Thin Liquid Films Including Bilayers II

Davis Auditorium, Schapiro Bldg.

Organizers: Dimo Platikanov and Cosima Stubenrauch

Presider: Dimo Platikanov

2:00 193 Viscoelasticity And Surface Forces In Systems with Alkyl Glucoside Surfactants. **Orlando J. Rojas (Keynote)**

2:30 194 Issues In Patterning Self-Assembled Monolayers by Molecular Replacement: Comparison of Adventitious And Directed Replacement of One Molecule In a SAM for Another. **Eric Z. Tucker**

2:50 195 Phosphonium Ionic Liquid as Defoamers: Structure-Property-Application Performance Correlations. **Rahul Bagwe**

3:10 Break.

3:25 196 Wrinkles/Folds and Interfacial Thermodynamics: Effect of Phase Separation of Water/Glycerol Binary Mixtures Next to Lipid Monolayers on Surface Mechanical Stability. **Luka Pocivavsek**

3:45 197 Defect And Texture Modeling of Block-Copolymer Films. **Nasser Mohieddin Abukhdeir**

Monday, June 15, 2009, 5:15 PM - 6:15 PM

Unilever Award Presentation & Lecture

Auditorium, Lerner Hall

Organizer: Darsh Wasan

5:15 198 Well Defined, Highly Uniform, Targeted NANO-Structures as Highly Selective Heterogeneous Catalysts, Photo-Catalysts, and CHARACTERIZATION Tools. **Suljo Linic**

Monday, June 15, 2009, 6:15 PM - 7:15 PM

Award Reception

Auditorium North Lobby, Lerner Hall

Tuesday, June 16, 2009

Tuesday, June 16, 2009, 8:00 AM - 9:05 AM

Plenary Lecture

Auditorium, Lerner Hall

Organizer: Raymond S. Farinato

8:00 199 Hydration and Viscoelasticity of Biomolecules. **Yoshio Okahata**

Tuesday, June 16, 2009, 9:05 AM - 9:30 AM

Coffee Break

Auditorium North Lobby, Lerner Hall

Tuesday, June 16, 2009, 8:00 AM – 4:00 PM

Coffee Break

Carleton Lounge, Mudd Bldg.

Tuesday, June 16, 2009, 9:30 AM – 11:40 AM

Biocolloids for Imaging and Drug Delivery III: Imaging and Sensors

Rm. 1024, Mudd Bldg.

Organizers: Mark Borden and Steven P. Wrenn

9:30 200 Electrophoretic Separation of DNA-Micelle Complexes: Applications In Rapid Sequencing and Genomic Analysis. **James W. Schneider (Keynote)**

10:00 201 Molecular Imaging of Endothelial Cells Via Quantum Dot Probes Used in the Detection of Cancer Cell Markers. **Mikala Shremshock**

10:20 202 Living Cells Decorated with Chromatic Nano-Patches: An Innovative Approach for Studying Membrane Processes. **Raz Jelinek**

10:40 203 Luminescent Oxide Nanoparticles for Bioimaging: Solution Synthesis Directed by Weak Ligand-Solvent Interactions. **Vadim G. Kessler**

11:00 204 Preparation of Biocompatible Magnetic Colloids From Supercritical Fluid Extraction of Emulsion. **Marco Furlan**

11:20 205 Controlled Clustering of Magnetite-Polyether Complexes through the Application of a Density Distribution Model And DLVO Theory. **William C. Miles**

Tuesday, June 16, 2009, 9:30 AM - 12:00 PM

Biointerfaces I: Signaling and Membrane Rafts

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presiders: Marjorie Longo and Ka Yee Lee

9:30 206 Membrane Structure at T Cell Activation Sites: How Protein Clustering Triggers Membrane Condensation. **Katharina Gaus (Keynote)**

10:00 207 Cholesterol's Inter- and Intra-Lipid-Vesicle Transfer Rates Determined by Small Angle Neutron Scattering (SANS). **Sumit Garg**

10:20 208 Immune Complement Activation On Noble Metals Measured with Quartz Crystal Microbalance (QCM-D). **Mats Hulander**

10:40 Break.

11:00 209 Weak Interactions at the Membrane-Toward a Discriminating Response In Signaling. **Anne Hinderliter**

11:20 210 Modulation of Membrane Domains by Proteins and Inter-Leaf Coupling. **Sylvio May**

11:40 211 Lipid Interactions In Bilayers Containing Cholesterol. **Paulo F. Almeida**

Tuesday, June 16, 2009, 9:30 AM - 11:15 AM

Biosurfactants and Other Novel Surfactants III

Rm. 1127, Mudd Bldg.

Organizer: Krister Holmberg

Presider: Orlando J. Rojas

9:30 212 A Novel Multi-Amine Head Surfactant and Its Application for the AgCl Hollow Sphere Formation. **Long Jiang (Keynote)**

10:00 213 New Surface Active Inositol Derivatives: Synthesis and Selected Properties. **Cosima Stubenrauch**

10:25 214 Preparation And Properties of Comb-Like Surfactants Containing Poly(ethylene oxide) Methyl Ether Grafts. **Zhiping Du**

10:50 215 Betaine Ester Surfactants. **Krister Holmberg**

Tuesday, June 16, 2009, 9:30 AM - 12:15 PM

Clustering III

Rm. 900, Fairchild Bldg.

Presiders: Tony Dinsmore and Paul L. Dubin

9:30 Introductory Remarks.

9:35 216 Self-Assembly of Colloids with Liquid Protrusions. **Daniela J. Kraft**

9:55 217 Equilibrium Colloidal Clusters at Small N: Experiments and Theory. **Vinod Manoharan**

10:15 Break.

10:35 218 Lock and Key Colloids. **Stefano Sacanna**

10:55 219 The Stability And Structure of Aqueous Clusters of Ferrihydrite Nanoparticles. **Benjamin Gilbert**

11:15 220 Extensional Rheology of Shear Thickening Nano Particle Suspensions. **Jonathan Rothstein**

11:35 221 Designed Anisotropic Particles, Assemblies and Clusters by Microfluidic Confinement. **Michael J. Solomon (Keynote)**

Tuesday, June 16, 2009, 9:30 AM - 11:50 AM

Colloid Rheology and Microrheology III

Rm. 700, Fairchild Bldg.

Organizers: Eric Furst and Jan Vermant

Presider: William Russel

9:30 222 Microdynamics and Flow-Induced Structure In Colloidal Particle Gels. **Michael J. Solomon (Keynote)**

10:10 223 Holographic Microrheology. **Fook Chiong Cheong**

10:30 224 Effects On Rheological Properties of Functionalized Alumina In Polyisoprene Melt. **Rose S. Ndong**

10:50 225 Motion of Particles In Viscoelastic Suspending Media. **Jan Vermant**

11:10 226 Testing the Hydrocluster Mechanism of Shear Thickening In Colloidal Dispersions - Measurements of the First Normal Stress Difference (N1). **Norman J. Wagner**

11:30 227 Small Molecules as Colloids. **Ryan J. Larsen**

Tuesday, June 16, 2009, 9:30 AM - 11:30 AM
Colloidal Gels and Microgels III
Rm. 924, Mudd Bldg.

Organizers: Martin Snowden and Brian Vincent
Presider: M. J. Snowden

9:30 228 Universal Features In the Transient Collapse of Reversible Colloidal Gels. **Lisa Teece**
9:50 229 Detecting and Treating Cancer with Microgels. **L. Andrew Lyon**
10:10 230 Phase Behavior And Rheology of Attractive Rod-Like Particles. **Seth Fraden**
10:30 231 Phase Behavior of Microgel Suspensions Using Hydrostatic Pressure. **Juan Jose Lietor-Santos**
10:50 232 Reversible Gelation of Rod-Like Viruses Grafted with Thermoresponsive Polymers. **Zhenkun Zhang**
11:10 233 Thermoresponsive Catalysts. Au@Pnipam Nanoparticles as Systems with Tunable Catalytic Effect. **S. Carregal-Romero**

Tuesday, June 16, 2009, 9:30 AM - 12:20 PM
Electrokinetics & Microfluidics III
Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna
Presider: Dimiter Petsev

9:30 234 The Electrokinetic Properties of Colloidal Magnetic Iron Oxides. **Thomas W. Healy (Keynote)**
10:00 235 Improvement of the Reproducibility of Zeta Potential Measurements by Transformation. **Paul J. Sides**
10:20 236 Universal Electro-Osmotic Coefficients. **Pierre M. Adler**
10:40 237 Electrokinetic Properties of Colloidal Carbon Nanotubes. **Ahmet Can Sabuncu**
11:00 238 Anisotropic Polarizability of Double Wall Carbon Nanotubes. **Ji Yeon Huh**
11:20 239 The Stability of Electrokinetic Annular Films. **Richard Craster**
11:40 240 Instabilities And Critical Phenomena In Free-Surface Electroosmotic Flows. **Sang W. Joo**
12:00 241 Theoretical Analysis of the Electrokinetic Pumping of Non-Newtonian Fluids. **Claudio L. A. Berli**

Tuesday, June 16, 2009, 9:30 AM - 12:15 PM
Environmental Colloid and Interfacial Processes I
Davis Auditorium, Schapiro Bldg.

Organizers: Qilin Li and Helen Nguyen
Presider: V. Faye McNeill

9:30 Welcoming Remarks.
9:35 242 Composition of the Aqueous Liquid/Vapor Interface: An X-Ray Photoelectron Spectroscopy Study. **John C. Hemminger (Keynote)**

10:15 243 Ice-Vapor Interactions Via the Quasi-Liquid Layer Studied by Molecular Dynamics. **Martina Roeselova**

10:35 244 Hydroxyl Radical Formation Rates On Ice Measured Using a Novel In Situ Probe. **Tara F. Kahan**

10:55 245 Uptake Measurements of OVOC On Solid Ice Surfaces And On Solid/Liquid Supercooled Mixtures Doped with Nitric Acid. Application to the Upper Troposphere. **Melanie Petitjean**

11:15 246 Photolysis of Pyruvic Acid In Ice. **Marcelo I. Guzman**

11:35 247 Measurement of Acidic Ions and Their Qualitative Effects on Snow Crystal Morphology and the Quasi-Liquid Layer. **Travis Knepp**

11:55 248 Withdrawn.

Tuesday, June 16, 2009, 9:30 AM - 12:10 PM

Fabrication of Colloidal Assemblies and Devices I: Colloidal Devices I
Rm. 633, Mudd Bldg.

Organizers: Darrell Velegol and Orlin D. Velev
Presiders: Darrell Velegol and Orlin D. Velev

9:30 249 Layer-by-Layer Assembly & Nanoparticles: Toward Soft-Matter Devices. **Gero Decher (Keynote)**

10:00 250 Smart Nanocontainers for Delivery of Chemical Agents: Architectural Capsules And Tubes. **Yuri M. Lvov**

10:20 251 Copolymer Dendrons for Improving the Performance of Particle Based Bioassays. **Darby Kozak**

10:40 252 Particle-Based Biosensors for Medical And Agricultural Biosecurity Applications. **Bronwyn J. Battersby**

11:00 253 Optimising Optically Encoded Particle-Based Immunoassay for the Early Detection of Ovarian Cancer. **Annie Chen**

11:20 254 Real Time DNA Sequencing Via Detection of Polymerization with Silicon Based Pico-Calorimeter Chips. **Hesaam Esfandyarpour**

11:40 255 Lipid Nanocapsules Overcome the Challenge of Sensitive Vitamins Encapsulation. **Maud Gonnet**

Tuesday, June 16, 2009, 9:30 AM - 12:00 PM

Interfacial Forces and Fields III
Rm. 834, Mudd Bldg.

Organizers: Pierre M. Adler and Sven-Holger Behrens
Presider: Eric R. Dufresne

9:30 256 Measurement and Control of Ultra-Low Particle Charges In Non-Polar Media. **P. Bartlett (Keynote)**

10:00 257 Colloidal Interactions at a Liquid-Liquid Interface. **Eric M. Furst**

10:20 258 A New Approach for Measuring the Contact Angle of Nanoparticles at Liquid Interfaces. **Vesselin N. Paunov**

10:40 259 Charging and Screening In Nonpolar Liquids and Liquid Interfaces: Ionic Versus Nonionic

Surfactants. **Sven H. Behrens**

11:00 260 Adsorption and Interaction of Charged Colloid Particles at Oil-Water Interfaces: Effect of Added Surfactant and Salt. **Virendra Singh**

11:20 261 Electrostatics at the Oil-Water Interface: Stability And Order In Emulsions And Colloids. **Mirjam E. Leunissen**

11:40 262 Thermodynamic Stability of Pickering Emulsions: Electrostatics And Chemistry. **René van Ruij**

Tuesday, June 16, 2009, 9:30 AM - 12:20 PM

Mechanisms of Bacterial Adhesion III

Rm. 825, Mudd Bldg.

Organizers: Terri Camesano and Sharon Walker

Presider: Nathalie Tufenkji

9:30 263 Enhanced Transverse Migration of Bacteria by Chemotaxis in a Porous T-Sensor. **Roseanne M. Ford (Keynote)**

10:00 264 Effect of Strain Rate And Calcium On the Cohesive Strength of *Staphylococcus epidermidis* Biofilms. **Srijan Aggarwal**

10:20 265 Mechanics of Escherichia Coli D21g Biofilms at the Aqueous-Air Interface. **James K. Ferri**

10:40 266 Surface Factors Influence Swarm Motility of *Pseudomonas aeruginosa*. **Joshua D. Shroud**

11:00 267 Adsorption of Corynebacterium-Diphtheriae-Intermedius (CDI) Bacteria Onto Phosphate Mineral. **S.E. El-Mofty**

11:20 268 Simulations of Swimming Bacteria with Granular Media Yield Extended Residence Times That Explain Experimental Observations. **Jun Liu**

11:40 269 Variations In Oxygen Tension During Bacterial Growth and Acclimation Affect Their Surface Properties and Attachment Behavior. **Nathalie Tufenkji**

12:00 270 The Role of Dissolved Organic Matter within a Plume of Treated Sewage Upon the Transport of Bacteria In a Sandy Aquifer In Cape Cod, Massachusetts. **Ronald W. Harvey**

Tuesday, June 16, 2009, 9:30 AM - 12:00 PM

Novel Measurement Tools & Methods III

Rm. 233, Mudd Bldg.

Organizers: Andrei Dukhin and Dietmar Lerche

Presider: Mark Bumiller

9:30 271 Recent Developments In the Methods of Particle Size Characterization. **Michael Stintz (Keynote)**

10:00 272 ZetaSpin: Measurement of Zeta Potential by Means of a Rotating Disk. **Paul J. Sides**

10:20 273 Zetapotential Distribution Analysis by Electrophoresis Video Microscopy. **Hanno R. Wachernig**

10:40 274 New Technologies In Measuring Zeta Potential of Particles In Concentrated Suspensions And of Flat Surfaces. **Renliang Xu**

11:00 275 New Technique for Zeta Potential Measurement. **Paul Freud**

11:20 276 Electrospray – Differential Ion-Mobility: a Probe for Colloidal Stability and Kinetics. **Michael R. Zachariah**

11:40 277 Online Monitoring of Changes In the Surface Potential of Colloidal Systems by Optical Second Harmonic Generation. **Benedikt Schuerer**

Tuesday, June 16, 2009, 9:30 AM - 12:20 PM

Polymer and Biopolymer Systems

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presider: Monika Schönhoff

9:30 278 Polyelectrolyte-Micelle Coacervates: Mesophasic Fluids with Temperature- and Charge-Induced Transitions. **Paul L. Dubin (Keynote)**

10:00 279 Supramolecular Assemblies of Cationic Lipid and Model Antigens. **Ana M. Carmona-Ribeiro**

10:20 280 The Surface Properties of Mucin Solutions: a Lung Mucus Model System. **Stephen Garoff**

10:40 281 Amphiphilic Polymer Assemblies for Protein Sensing. **Daniella Gonzalez**

11:00 282 Influence of Binding Strength On the Structure of Supramolecular Polymer-Surfactant Complexes. **Manesh Gopinadhan**

11:20 283 Self-Aggregation of Mixtures of Oppositely Charged Polyelectrolytes And Surfactants Studied by Rheology, Dynamic Light Scattering And Small Angle Neutron Scattering. **Ingo Hoffmann**

11:40 284 Effects of Aggregation and Bulk Phase Separation On the Adsorption of Oppositely Charged Polyelectrolyte / Surfactant Mixtures at the Air/Liquid Interface. **Imre Varga**

12:00 285 Physico-Chemical Properties of Complex Fluids and Their Interactions with Polymer Surfaces. **Saule B. Aidarova**

Tuesday, June 16, 2009, 9:30 AM - 11:35 AM

Single Molecule Chemistry II

Rm. 227, Mudd Bldg.

Organizers: John Kitchin and James B. Miller

Presider: Charles Sykes

9:30 286 STM Studies of Reversible Switching Among Charge States of Single TCNE Molecules. **Jay A. Gupta**

9:55 287 Turning Molecular Rotors Into Motors and Sensors: From Electrical Control of Motion to Chiral Identification at the Single-Molecule Level. **Heather L. Tierney**

10:20 288 Control of Surface Diffusion. **Ludwig Bartels**

10:45 289 Scanning Tunneling Microscopy of Chemically Reactive Self-Assembled Monolayers. **Lloyd A. Bumm**

11:10 290 Single Molecule STM Chemistry. **Saw-Wai Hla**

Tuesday, June 16, 2009, 9:30 AM - 12:10 PM

Structures at Interfaces with Liquids III

Rm. 337, Mudd Bldg.

Organizers: Kenneth B. Eisenthal and Franz Geiger

9:30 291 Structure of Thin Organic Films Under Oil Studied by Vibrational Spectroscopy. **Paul B. Davies (Keynote)**

10:10 292 Application of Nonlinear Optical Spectroscopy to Study Polymer and Biological Molecules at Interfaces. **Zhan Chen**

10:50 293 How Does Urea Denature Proteins?. **Paul S. Cremer**

11:30 294 Organic Ions at Air/Water Interface. **Mahamud Subir**

11:50 295 Free Energy Relationships in the Electrical Double Layer. **Franz M. Geiger**

Tuesday, June 16, 2009, 2:00 PM - 4:40 PM

Biocolloids for Imaging and Drug Delivery IV: Microbubbles

Rm. 1024, Mudd Bldg.

Organizers: Mark Borden and Steven P. Wrenn

2:00 296 Long-Term Stability of Microbubbles: (I) Armored Bubbles And (II) Surfactant-Covered Bubbles with Interfacial Polygonal Nanopatterning. **Howard A. Stone (Keynote)**

2:30 297 Novel Electrically-Driven Devices And Methods for the Preparation of Microbubbles And Microcapsules. **Mohan Edirisinghe (Keynote)**

3:00 298 The Role of Microbubble Size Distribution In Ultrasound Imaging. **Paul A. Dayton**

3:20 299 Ultrasound-Mediated Therapeutic and Diagnostic Approaches. **Terry O. Matsunaga**

3:40 300 Microbubble Biodistribution and Targeted Drug Delivery. **Michaelann Tartis**

4:00 301 Development of "Bulky" Lipid Microbubbles for Ultrasound Triggered Drug Delivery. **Shashank R. Sirsi**

4:20 302 Withdrawn.

Tuesday, June 16, 2009, 2:00 PM - 4:50 PM

Biointerfaces II: Membrane Computation and Mechanics

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presiders: Ka Yee Lee and Marjorie Longo

2:00 303 Dynamics of Rods and Filaments In Viscoelastic Membranes. **Frederick C. MacKintosh (Keynote)**

2:30 304 Hybrid Lipid as Biological Surfactants. **Robert Brewster**

2:50 305 Structure and Dynamics of a Fluid Phase Bilayer on a Solid Support as Observed by a Molecular Dynamics Computer Simulation. **Scott E. Feller**

3:10 Break.

3:30 306 An Alpha Helical Peptide In AOT Micelles Prefers to Be Localized at the Water/Headgroup Interface. **Jianhui Tian**

3:50 307 Sedimentation of Giant Unilamellar Vesicles and Its Effect On Vesicle Motion near a Horizontal Flat Surface. **Andres Gonzalez Mancera**

4:10 308 Computational Studies of Texas Red DHPE: Model Building And Applications. **Michael J. Skaug**

4:30 309 Shape Deformation of a Mixed Vesicle with a Composition Dependent Bending Rigidity. **Takashi Taniguchi**

Tuesday, June 16, 2009, 2:00 PM - 4:40 PM

Colloid Rheology and Microrheology IV

Rm. 700, Fairchild Bldg.

Organizers: Eric Furst, William Russel and Jan Vermant

Presider: Dimitris Vlassopoulos

2:00 310 Shear Stresses of Colloidal Dispersions at the Glass Transition. **Matthias Ballauff (Keynote)**

2:40 311 The Particle Pressure In Sheared Colloidal Dispersions. **Jeffrey F. Morris**

3:00 312 Suspension Rheology with Stokesian Dynamics. **Yogesh Harshe**

3:20 313 Rheology and Microstructure In Brownian Colloidal Suspensions. **Wenxiao Pan**

3:40 314 Basic Study On the Lattice Boltzmann Method for Application to Many Particle Dispersions (A Uniform Flow past a Two-dimensional Circular Particle). **Akira Satoh**

4:00 315 Predicting the Shear Thinning Behavior of Concentrated Colloidal Dispersions. **Koichi Takamura, BASF Corporation and Theo G.M. van de Ven**

4:20 316 Contributions of Dynamical Heterogeneities to Non-Linear Rheology of Confined Colloidal Suspensions Under Oscillatory Shear. **Prasad S. Sarangapani**

Tuesday, June 16, 2009, 2:00 PM - 4:30 PM

Colloid and Surface Science in Mineral Separations and Processing I

Rm. 900, Fairchild Bldg.

Organizer: D. R. Nagaraj

Presiders: Sarah Harmer

2:00 317 Interfacial Aspects of Microbe-Mineral Interactions Relevant to Mineral Beneficiation. **K.A. Natarajan (Keynote)**

2:30 318 Withdrawn.

2:50 319 Withdrawn.

3:10 320 Microbial Aspects of Mining Environmental Pollution and Bioremediation. **K. A. Natarajan**

3:30 321 Stabilisation of Nanoparticles for Colloidal Ceramic Processing. **Marie Laure Rami**

3:50 322 Interaction of Mineral Surfaces with Simple Carboxylic Acids In Aqueous And / or Solution In Hexane. **Joan E. Thomas**

4:10 323 The Effect of Crystal Habit On the Surface Speciation And Reactivity of Pyrite Fracture Surfaces. **Sarah Harmer**

Tuesday, June 16, 2009, 2:00 PM - 4:40 PM

Colloidal Gels and Microgels IV

Rm. 924, Mudd Bldg.

Organizers: Martin Snowden and Brian Vincent

Presider: Brian Saunders

2:00 324 Peptides and Proteins in Polyelectrolyte Microgels. **Martin Malmsten (Keynote)**

2:20 325 Core-Shell Colloids with Optimal Scattering Properties. **Guangnan Meng**

2:40 326 Charged Temperature Sensitive Microgel Particles as a Model System to Study Equilibrium and Non-Equilibrium Phase Behaviour of Soft Colloids. **Mathias Reufer**

3:00 327 Solubilization Capacity of a Covalently Crosslinked Micellar Gel. **Steven Kline**

3:20 328 Multifunctional Thin-Film Membranes From a Stimuli-Responsive Biopolymer Hydrogel. **Ihor Tokarev**

3:40 329 Uptake and Release of Positively Charged Peptides by Poly(acrylic acid) Microgels. **Helena Bysell**

4:00 330 Slow Dynamics and Ageing In Concentrated Multiarm Stars: New Routes to Equilibrium? **George Petekidis**

4:20 331 Mechanisms of Protein and Surfactant Binding to Polymer Networks. **Per Hansson**

Tuesday, June 16, 2009, 2:00 PM - 4:50 PM

Electrokinetics & Microfluidics IV

Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna

Presider: Kevin D. Dorfman

2:00 332 AC Polarization of Nanocolloids and Their Impedance Signatures in Strong Electrolytes. **Hsueh-Chia Chang (Keynote)**

2:30 333 Understanding Nanocolloid – Nanochannel Interaction for Biomolecular Detection. **Gilad Yossifon**

2:50 334 Enhancing the Concentration Polarization In Micro/Nanochannel Hibrid System Using Array of Pillars. **Sung H. Ko**

3:10 335 AC-Polarization And Conformational Transition of Weak Polyelectrolyte In Uniform AC-Electric Fields. **Shengqin Wang**

3:30 336 Electro-Hydrodynamic Particle Levitation on Electrodes: Asymptotic Analysis. **Ehud Yariv**

3:50 337 Electrohydrodynamic Flow And Colloidal Patterning near Inhomogeneities On Electrodes. **Christian Punckt**

4:10 338 Separation of Colloids Using Alternating Current Electrokinetics. **Shahnawaz Molla**

4:30 339 A Pore Resistance Model And the Effect of Electrical Conductivity On Electroporation. **Hao Lin**

Tuesday, June 16, 2009, 2:00 PM - 4:50 PM

Emulsions I

Rm. 825, Mudd Bldg.

Presider: Stig Friberg

2:00 340 Development of Double Emulsions with Vegetable Oils by One-Step Method. **Orlando D. H. Santos (Keynote)**

2:30 341 Thermodynamic Parameters of Transfer of Vitamin E From the Oil to the Interfacial Region of a Octane Based Model Emulsion. **Carlos Bravo-Díaz**

2:50 342 Novel Silica Stabilized Multiple Emulsions: Release and Polymerization Study. **Amro K. F. Dyab**

3:10 343 Double Emulsion Droplets as Microreactors for Synthesis of Hydroxyapatite. **Ho Cheung Shum**

3:30 344 Comparison of Calculated and Experimentally Determined Evaporation Path from An Emulsion. **Abeer AL Bawab**

3:50 345 The Effect of Relative Humidity on the Evaporation Path of An Emulsion. **Patricia . A Aikens**

4:10 346 Constant Vapor Pressure Evaporation from a Fragrance Emulsion. **Lingling Ge**

4:30 347 Analysis of Phase Diagrams and Microstructural Characterization of Microemulsion Systems Using High-Resolution Ultrasonic Spectroscopy. **Vitaly Buckin**

Tuesday, June 16, 2009, 2:00 PM - 4:25 PM

Environmental Colloid and Interfacial Processes II

Davis Auditorium, Schapiro Bldg.

Organizers: Qilin Li and Helen Nguyen

Presider: V. Faye McNeill

2:00 Welcoming Remarks.

2:05 348 Microscopic Characterization of Carbonaceous Aerosol Aging In the Outflow From Mexico City. **Ryan Moffet**

2:25 349 Reactive Uptake of O₃ on Deliquesced KI Particles Coated with Fatty Acids and SDS. **Aurélie Rouvière**

2:45 350 Heterogeneous Ozone Oxidation of Chiral Terpenes Studied by Vibrational Sum Frequency Generation. **Franz M. Geiger**

3:05 351 A Dynamic Uptake Coefficient Treatment for Modeling the Heterogeneous Reactions of O₃, NO₂, And H₂O with Benzo[a]Pyrene Adsorbed On Soot. **Marco Springmann**

3:25 352 The Ozonolysis of Surface-Adsorbed Polycyclic Aromatic Hydrocarbons. **V. Faye McNeill**

3:45 353 Interactions of 4-Chlorophenol with TiO₂ Surfaces: Study of Environmental Interfaces by NEXAFS, XPS And UPS. **Alexander Orlov**

4:05 354 Properties of Copper and Mercury Adsorption On Chemically-Modified Chitosan Membranes. **Marisa M. Beppu**

Tuesday, June 16, 2009, 2:00 PM - 4:50 PM

Fabrication of Colloidal Assemblies and Devices II: Colloidal Devices II

Rm. 633, Mudd Bldg.

Organizers: Darrell Velegol and Orlin D. Velev

Presiders: Orlin D. Velev and Darrell Velegol

2:00 355 Omnidirectional Printing of Flexible, Stretchable and Spanning Microelectrodes from Silver Nanoparticle Inks. **Jennifer A. Lewis (Keynote)**

2:30 356 Superclusters: Hierarchical Self-Assembly towards Structured Microparticles for Digital Printing. **Zhaoyang Ou**

2:50 357 Magnetically Deformable Liquid Mirrors From Silver Nanoparticles. **Anna M. Ritcey**

3:10 358 Engineering Spontaneous Emission of Fluorescent 3D Photonic Crystals through Self-Assembly of Sub-Micron Colloids. **Jung Hun Song**

3:30 359 Acrylamide-Based Magnetic Nanosponges: a New Smart Nanocomposite Material. **Massimo Bonini**

3:50 360 Rapid Detection of S-Adenosylhomocysteine Using Self-Assembled Optical Diffraction Gratings. **David H. Thompson**

4:10 361 Vapor Responses of Thiol-Protected Gold Nanoparticle Films: Progress Toward a Chemical Sensor. **Jisun Im**

4:30 362 A Revolutionary Fuel Cell. **Krishna Kowlgi**

Tuesday, June 16, 2009, 2:00 PM - 4:40 PM

General I

Rm. 227, Mudd Bldg.

Organizers: John Kitchin and James B. Miller

Presider: Chris Matranga

2:00 363 Surface Anisotropic Colloidal Delivery And Template System for Multi-Stage Reactive Separation. **Jung Hun Song**

2:20 364 Evidence for Enantiospecific Interaction of Histidine with Planes of Single Crystalline Alpha Quartz. **Paul J. Sides**

2:40 365 Enantiospecific Adsorption of Amino Acids On Hydroxylated Quartz (0001). **Jeong Woo Han**

3:00 366 Growth And Characterization of Iron And Iron Oxide Nanoparticles On the Au(111) Surface. **Christopher Matranga**

3:20 367 First Example of Polymer Stablized Gold Nanoparticles for Suzuki-Miyaura Cross-Coupling Reaction. **Jie Han**

3:40 368 Gas-Surface Reactions of Alkanethiol Monolayers. **S. Alex Kandel**

4:00 369 TiO₂ Nanocrystals for Surface Reaction Dynamics Studies. **Richard Osgood Jr.**

4:20 370 The Impact of Urea and Its Decomposition Products On the SCR Activity of Zeolite Catalysts for Diesel Emission Control. **Maik Eichelbaum**

Tuesday, June 16, 2009, 2:00 PM - 4:30 PM

Interfacial Forces and Fields IV

Rm. 834, Mudd Bldg.

Organizers: Sven-Holger Behrens and Pierre M. Adler

Presider: Eric R. Dufresne

2:00 371 Self-Assembly of Nematic Colloids. **Igor Musevic (Keynote)**

2:30 372 Colloidal Non-Interactions In Strongly-Charged Phoretic Phenomena. **Todd M. Squires**

2:50 373 Soret Effect In Non-Ionic Surfactants. **Sascha Datta**

3:10 374 Phoretic Motion of Axisymmetrical Objects Via Self-Generated Composition Gradients. **Mihail N. Popescu**

3:30 375 Organizing End-Grafted Polymer on Phospholipid Bilayers. **Reghan J. Hill**

3:50 376 Interactions, Dynamics, and Microstructures in Electric Field Induced Colloidal Assembly.

Jaime J. Juárez

4:10 377 Colloids in AC Fields: Edge Localized Instabilities in Dielectrophoretic Bottles. **Doris Vollmer**

Tuesday, June 16, 2009, 2:00 PM - 4:30 PM

Novel Measurement Tools & Methods IV

Rm. 233, Mudd Bldg.

Organizers: Mark Bumiller and Dietmar Lerche

Presider: Andrei Dukhin

2:00 378 Recent Advances In the Textural Characterization of Nanoporous Materials. **Matthias Thommes (Keynote)**

2:30 379 Direct Measurement of the Surface Area of Suspensions Using NMR. **David Fairhurst**

2:50 380 Laser Micro-Rheology and Film FORMATION MONITORING of Coatings. **Yoann Lefeuvre**

3:10 381 Scattering of Fractal Aggregates And Implications for Particle Sizing. **Frank Babick**

3:30 382 Study of Colloidal Disk Sedimentation by Analytical Centrifugation. **Peng He**

3:50 383 Wettability of Interfaces as An Indicator of Their Properties And State. **Alexandre Emelyanenko**

4:10 384 Characterisation of Core-Shell Polymer-Silica Nanocomposite Particles by Small Angle X-Ray Scattering. **Jennifer A. Balmer**

Tuesday, June 16, 2009, 2:00 PM - 4:50 PM

Polymer Interfaces I

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presider: Maria Santore

2:00 385 Biomimetic Multifunctionally Responsive Surfaces. **Spiros H. Anastasiadis (Keynote)**

2:30 386 Light-Induced Bio-Inspired Responsive Polymer Brushes. **Tao Chen**

2:50 387 Zipper Brushes: Ultra Dense Brushes through Adsorption. **Wiebe M. de Vos**

3:10 388 Peptides Grafted from Solids for the Control of Interfacial Properties. **William A. Ducker**

3:30 389 Nanostructured Polymer Brushes: Chemical Gating and Wetting Behavior. **Mikhail Motornov**

3:50 390 Reduction of Surface Hydrophobicity Using a Stimulus Responsive Polysaccharide. **David A. Beattie**

4:10 391 Partially Fluorinated Ionomer Films by Surface-Initiated Ring Opening Metathesis Polymerization. **G. Kane Jennings**

4:30 392 pH-Dependent Charging at Constant Ionic Strength: Dendrimers, Surfaces with Adsorbed Polyelectrolytes and Spherical Brushes. **Duško Cakara**

Tuesday, June 16, 2009, 2:00 PM - 4:20 PM

Structures at Interfaces with Liquids IV

Rm. 337, Mudd Bldg.

Organizers: Kenneth B. Eisenthal and Franz Geiger

2:00 393 Computational Analysis of Sum Frequency Generation Spectroscopy and Aqueous Solution Surfaces. **Akihiro Morita (Keynote)**

2:40 394 Structure of the Water/Organic Liquid Interface And Its Effect On Reactivity. **Ilan Benjamin**

3:20 395 Nonlinear Light Scattering From Colloidal Nanoparticles – Probing Surface Structure and Adsorption. **Hai-Lung Dai**

4:00 396 Influence of Molecular Packing Density On the Properties of Self-Assembled Monolayers Under An Applied External Field. **Joelle Frechette**

Tuesday, June 16, 2009, 2:00 PM - 4:20 PM

Surfactants and Supramolecular Assemblies: Aggregates at the Solid-Liquid Interface

Rm. 1127, Mudd Bldg.

Presiders: Alexander Couzis and Charles Maldarelli

2:00 397 Surfactants at Solid-Oil Interfaces. **Rico Tabor**

2:20 398 Coating of Hydrophilic and Hydrophobic Surfaces with Complex Coacervate Core Micelles and Its Effect on Protein Adsorption. **Agata Maria Brzozowska**

2:40 399 Surfactant Self-Assembly on Substrates and the Dewetting Process. **J. S. Bernardes**

3:00 400 Self-Assembly Structure of Nonionic Surfactants On Colloidal Silica Studied by Small-Angle Neutron Scattering. **Dersy M. Lugo Q.**

3:20 401 A Twist On Amphiphile Design Yields "Sticky" Supramolecular Cones. **Yan Geng**

Tuesday, June 16, 2009, 4:45 PM - 6:15 PM

Tuesday Poster Session

Library, Low Bldg.

Presiders: Shahab Shojaei and Kazue Kurihara

402 Effect of Particle Surface And Material Properties On the Aggregate Formation Under Static And Flow Conditions. **Miroslav Soos**

403 Synthesis of Shape-Controlled Metal Nanocrystals. **Victor Mosquera**

404 Structure of Colloidal Clusters In Systems with Competing Interactions. **Tian Hui Zhang**

405 Competing Interactions as Stabilization Mechanism for Hollow Spherical Structures. **Ethayaraja Mani**

406 Sedimentation of Fractal Aggregates. Calculation And Measurement. **Frank Babick**

407 Hierarchy of Structure Development in Coacervation. **Ebru Kizilay**

408 Dynamical Heterogeneities: From Gels to Glasses. **Antonio Coniglio**

409 Molecular Modeling of Peptide-Like Inclusions in Lipid Bilayers: Lipid-Mediated Interactions. **J. Mieke Kleijn**

410 Electrophoresis of PEG-Derivatized Lipids in Supported Phospholipid Bilayer Membranes. **Huaiying Zhang**

411 Formation of Plasmid DNA-Single Chained Cationic Surfactant Vesicles and Its Application in Gene Transfer. **X. M. Ran**

412 Nanogel Applications in Tissue Engineering". **Sathish Ponnurangam**

413 Temperature-Induced Aggregation of Odorant Binding Proteins. **Francesca Ridi**

414 Love Mode Acoustic Waveguide Biosensors In Microfluidic Applications: a Theoretical Analysis. **Marina V. Voinova**

415 An Interfacial Scale Bacterial Adhesion Model Explains the Hysteretic Force Interaction Profiles. **Gaurav Saini**

416 Blistering Phenomenon of Bioabsorbable Polymers During Degradation And Confocal Raman Microscopy Study. **Dachuan Yang**

417 Biologically Designed Assembly of Au Nanorods. **Marc R. Knecht**

418 RAFT Synthesis of Novel Biodegradable Stimuli-Responsive Triple Shape Memory Polymers. **Amit Garle**

419 Aggregation of Silver Nanoparticles In Aquatic Systems. **Xuan Li**

420 Biomimetic Investigations of CaCO₃ Growth by Solution And Vapor Phase Techniques. **Adam M. Sadowski**

421 Effects of Extrusion On the Emulsifying Properties of Rumen And Soy Protein. **José A. G. Aréas**

422 Emergent Structures And Dynamics In Biomacromolecular Systems: Synergic Effects of Amylose On Lysozyme Gelation In Dimethylsulfoxide/Water. **Elizabeth P. G. Aréas**

423 Electrochemical And Spectroscopic Aspects of the Formation Process of Octadecyltrimethylammonium Bromide/DNA Surfoplexes. **Alberto Rodríguez-Pulido**

424 Biomimetic Growth of Non-Biogenic Semiconductor Materials. **Mikala Shremshock**

425 Application of Natural Biocolloids – Spherosomes as Drug Carrier. **Aitugan N. Sabitov**

426 How Lipid Acyl Chain Structure Influences the Activity of Membrane-Active Peptides. **Antje Pokorny**

427 Modification of Lipid Bilayer Material Properties as a Common Mode of Action for a Wide Range of Phenolic Phytochemicals. **Helgi I. Ingolfsson**

428 The Insulin-Sensitizers Troglitazone And Rosiglitazone Alter Lipid-Bilayer Properties. **Radda Rusinova**

429 Biosorption of Radionuclides by Bacterium *Bacillus Polymyxa* IMV 8910. **Irina Leshchuk**

430 Utilizing Microbubbles for Efficient Delivery of Plasmid DNA to Tumors. **Shashank R. Sirsi**

431 Emulsification and In-Vitro Digestion of Fat. **Concetta Tedeschi**

432 Testicular Hyaluronidase Surface Activity and Immobilization On DPPC and Cerebroside LB Films. **Douglas Santos Monteiro**

433 ToF-SIMS C₆₀ Depth Profile, Mapping An Organic Biocide's Spatial Distribution In Antifouling Paint Binder Film. **Emiliano Pinori**

434 Attenuated Total Reflection Infrared Spectroscopy Studies of Water Transport In Films Inspired by Plant Cuticles. **Annabel M. Edwards**

435 pH Triggered Content Release From Anti-HER2/Neu Lipid Vesicles for Cancer Therapy. **Shrirang Karve**

436 Investigation of pH-Dependent Formation of Lipid Heterogeneities On Giant Unilamellar Vesicles. **Amey A. Bandekar**

437 Fusion Studies of Heterogeneous Lipid Bilayers Controlled by pH and Cholesterol. **Manali R. Bhagat**

438 Microfluidic Production of Lipid-Stabilized Multi-Phase Particles for Biomedical Imaging and Targeted Drug Delivery. **Kanaka Hettiarachchi**

439 Studies On Anti-Biofouling and Anti-Bacterial Microfiltration Membranes by Membrane Surface

Modification Using UV Grafting. **Ramamoorthy Malaisamy**

440 Analytical Ultracentrifugation of Protein Solutions. **Dominique M.E. Thies-Weesie**

441 Triggered Templated Assembly of Protein Polymersome. **Feng Li**

442 Withdrawn.

443 Dynamics of Quantum Dot Modified Dense Colloidal Suspensions. **Shomeek Mukhopadhyay**

444 Water Confined in Cement Pastes as a Probe of Cement Microstructure Evolution. Observation of a Dynamic Crossover in Nanoporosity. **Piero Baglioni**

445 Radiative Decay Rate Measurement for Perylene Dye Molecules Embedded to Porous Silicon Nano-Structures. **Bukem Bilen**

446 Effect of Nanoparticles On the Properties of the Oil/Water Interface In the Presence of An Oil Soluble Surfactant. **Libero Liggieri**

447 Interactions of Block-Copolymer Micelles with Bacteria. **Renata Vyhnalkova**

448 Synthesis of Liposome@Yttrium-Basic-Carbonate Composite Nanocapsules. **Alberto E. Regazzoni**

449 Preparation of Ag-Au Bimetallic Nanoparticles In Reverse Microemulsion. **Romain Bordes**

450 Withdrawn.

451 Novel Gel Phase Formed by Mixing a Cationic Surfactive Ionic Liquid C16mimCl And An Anionic Surfactant SDS In Aqueous Solution. **Xiao Chen**

452 Reversible Sol-Gel Transition of Long-Chain Amide Derivatives Controlled by Light. **Keisuke Matsue**

453 Layer-by-Layer Assembly of Natural Polyphenol And Gelatin In Organized Microcapsules. **Tatsiana G. Shutava**

454 Gold Nanoparticle Assemblies On Solid Substrate Prepared by Using Surface Molecular Macroclusters. **Takeshi Kajiwara**

455 Preparation of Robust Silica Nanocapsules Using Molecular Assemblies Formed Vesicles as Templates. **Taku Ogura**

456 Interfacial Films of Mixtures of Block Copolymers And Metallic Nanoparticles. **Samuel Lamarre**

457 Polyelectrolyte Adsorption On Pulp Fibers In Packed Beds. **Laura Ciovica**

458 Reversible Phase Transfer And Fractionation of Au Nanoparticles by pH Change. **Yoshiro Imura**

459 Immobilization of Anticarcinogenic Preparations Into Polymer Gels. **Dinara Rahimbayeva**

460 Aggregation of ZnO Nanoparticles Under Varying Solution Chemistries. **Dongxu Zhou**

461 Nanoparticle-Loaded Aerogels for Energy Applications. **Yuan Li**

462 Monitoring the Early Stages of ZnO Nanoparticle Formation. **Doris Segets**

463 Shear Induced Aggregation Rate of Colloidal Nanoparticles and Clusters In the Presence of Repulsive Interactions. **Marco Lattuada**

464 In-Situ Analysis of Nanoparticle Self-Assembly and Surface Interactions with the Quartz Crystal Microbalance with Dissipation Monitoring (QCM-D) Technology. **Stephen L. Hussey**

465 'Clickable' Multivalent Nanoparticles as Potent Chemotherapeutic Agents for Glioblastoma Multiforme (GBM). **Prasad Subramaniam**

466 Synthesis of ZnS Nanoparticle by Microemulsion Method Assisted by Microwave Irradiation. **Tawatchai Charinpanitkul**

467 Surface Modification and Dispersion Behavior Control of Oxide Composite Nanoparticles In Organic Solvents by Beads Milling Process. **Hidehiro Kamiya**

468 PEO at the Air/Water Interface. **Louise Deschênes**

469 RUB-18 Organomodified Derivatives for Cation Removal at the Solid/Liquid Interface. **Thaís R. Macedo**

470 Dynamically Controlled Colloidal Assembly Via Navigation of Energy Landscapes. **Daniel J. Beltran-Villegas**

471 Role of Surface Tension in the Growth of a Gas Bubble in Supersaturated Solution. **Gennady Yu. Gor**

472 Interaction Between Non-Ionic Surfactants and Cellulose Ester by Differential Scanning Calorimetry and Atomic Force Microscopy. **Jorge Amim Junior**

473 Stability and Interface Properties of Thin Cellulose Ester Films Adsorbed from Acetone and Ethyl Acetate Solutions. **Jorge Amim Junior**

474 Formation of W/O Nanoemulsions by Dilution of a Concentrated Phase: Effect of Nonionic Surfactant Type. **Laura Marquez**

475 Modeling the Osmotically Driven Crystallization Inside Double Emulsion Drops. **Kathryn S. Hess**

476 Study the Dependence of Dendrimer Conformation On Concentration by Small Angle Neutron Scattering. **Yun Liu**

477 Studies of Dipalmitoylphosphatidylcholine (DPPC) Monolayers Imbued with Molecular Balls of C60 and Dy@C82. **Zhining Wang**

478 Thermodynamics of Micelle Formation of a Novel Cocogem Surfactant and the Dynamic Adsorption of the Cocogem On Sandstone. **Annamária B. Páhi**

479 Analytical Scattering Function of Polydisperse, Multilayered Hard Spheres. **Moheb Nayeri**

480 Development of Nanoemulsions of Vegetable Oil (triglycerides) by Low Energy Emulsification Method. **Orlando D. H. Santos**

481 Measurement of the Interaction Between Two Silica Surfaces Bearing Layers of Adsorbed Thermosensitive Poly(N-isopropylacrylamide) (PNIPAM) Chain. **Xiangjun Gong**

482 Depletion Attraction Between a Polystyrene Particle and a Hydrophilic Surface in a Pluronic Aqueous Solution. **Xiaochen Xing**

483 Phase Behaviour of Hydrogen-Bonded Hybrid Amphiphile In Water. **Xiao Chen**

484 Field-Induced Orientational Order In Aqueous Beidellite Suspensions. **Laurent J. Michot**

485 Sudden Spreading of Particles Sprinkled Onto a Liquid Surface. **Satish Gurupatham**

486 Stability of Size-Selected Microbubbles. **Jameel A. Feshitan**

487 Withdrawn.

488 Ionic Self-Assembled Solid-Like Vesicles And Their Temperature-Induced Transformation. **Xiao Chen**

489 Polymer-Coated Microspheres And Nanocrystalline Cellulose for Modeling the Initial Stages of Blood Thrombus Formation. **Luca Manfredi**

490 Liquid Crystalline Phases Self-Organized From a Surfactant-Like Ionic Liquid C16mimCl In Ethylammonium Nitrate. **Xiao Chen**

491 Apparent Molar Volume of Mixtures of Ethoxylated Nonyl Phenol Homologues In Micellar Solution. **Szabolcs Vass**

492 Development of Lanthanide Ion-Based Luminescent Nanoparticles. **Marie-Christine Dorais**

493 Preparation And Characterization of Various Porous Silica Materials Via Self-Assembly of Surfactants

In Strong Acid Condition. **Jae-Hyung Park**

494 Synthesis And Characterization of Polymer Nanoparticles Doped with Luminescent Europium Complex. **Jessie Desbiens**

495 Bi-Layer Formation of Imidazole-Modified Ethyl(HydroxyEthyl)Cellulose at a Hydrophobic Surface as Monitored by QCM-D. **Jesper Hedin**

496 Efficient Synthesis of Cross-Linked Spherical Micelles And Polymersomes. **Chan Woo Park**

497 Relative Motion of a Pair of Colloids In Nonadsorbing Polymer Solutions. **Tai-Hsi Fan**

498 Characterization of Foaming Kinetics In Mixed Surfactant Systems And Relationship Between Cleaning And Foaming Efficiency On Hard Surface. **Jun-Seok Park**

499 Self-Assembly Behavior of Benzotriazole In Water. **Fadwa Odeh**

500 Photo-Responsive Surfactants at the Silica/Aqueous Solution Interface. **Yuki Imaizumi**

501 Chemical Shift Imaging NMR to Follow Gel Formation. **Åsa Östlund**

502 In-Situ Analysis of the Structure and Dynamics During the Sedimentation of Charged Colloidal Particles. **Nasser Ben Braham**

503 A Model for Asymmetric Drainage of Thin Liquid Films. **Elena Mileva**

504 Spontaneous Insertion of Water Into Oil On a Droplet-Based Microfluidic Device. **Alexander K. Tucker-Schwartz**

505 Evanescent Wave Dynamic Light Scattering (EWDLS) of Colloidal Particles at Liquid-Liquid Interfaces. **Tahereh Mokhtari**

506 Embracing Crystallization In the Spherical Self-Assembly Curvature. **Yan Geng**

507 In-Situ Characterization of Dispersion Mechanisms of Agglomerated Filler Particles In a Polymer Matrix Under the Action of Shear. **Edith Peuvrel-Disdier**

508 Flow Cytometric Analysis of Microbubble Size Distribution And Surface Interactions. **Cherry C. Chen**

509 Electro-Optics And Rheology of Dispersions of Polymer Nanotubes. **Bin Huang**

510 Sharp Sol-Gel Transition of Colloids with Potential Energy Barrier Under Shear Flow. **Alessio Zaccone**

511 Rheology and Characterization of Reverse Micelles. **Patricia A. Darcy**

512 Hydrodynamic Properties and Motion of Fractal Aggregates In Linear Flows. **Yogesh Harshe**

513 Mechanical Properties of Single Silica Capsule. **Lijuan Zhang**

514 Withdrawn.

515 The Dynamics of Charging of Muscovite Mica. **Paul J. Sides**

516 Dynamic Interfacial Properties of Drops Relevant to W/O-Emulsion-Forming Systems. Measurements of High-Frequency Oscillations by Capillary-Pressure Tensiometry. **Giuseppe Loglio**

517 Determination of Adsorption Modes of Alkyl Hydroxamates on Titania Minerals - a DFT Study. **Sathish Ponnurangam**

518 Quantification of the Interactions Between Particles And Colloidal Gas Aphrons. **Nidal Hilal**

519 Dynamics of Concentrated Hard-Sphere Colloids near a Wall. **George Petekidis**

520 Gold Films with Cavities for Applications In Plasmonics. **Jes Dreier**

521 Multiple Glass Transition Temperatures In Thermosetting Ultra-Thin Films : Stratification Process or Confinement Effect? **Pascal Carriere**

522 Hysteresis or Lack Thereof In Polymer/Surfactant Coadsorption. **Trishna Saigal**

523 Poly(methyl methacrylate) Encapsulated Aluminium Pigments for Waterborne Applications. **Philip M. Karlsson**

524 Metal Leaching from Highway Marking Glass Beads. **Nimrat Sandhu**

525 Electrostatic Potential Dissipation on Insulators. **C. A. Rezende**

526 Performance Properties of Coatings And Films Prepared From Silica-Polyacrylate Composite Latex. **Edward Davis**

527 Halloysite Clay Nanotubes - Smart Capsules for Corrosion Inhibitors In Metal Coatings. **Elshad Abdullayev**

528 Surface Light Scattering Spectroscopy Applied to Enhanced Oil Recovery Systems. **J. Adin Mann Jr.**

529 Simple Synthetic Process of PEG-Silica Hybrid Particles Using Remodeled Sol-Gel Reaction of PEGME-IPTES Precursors In Aqueous Solution. **Chul Oh**

530 Electron Transport through Organic Molecules On Silicon Surfaces. **Liu Yang**

531 Copper Corrosion Protection In Water Reuse Projects: Cooling Systems with Secondary Treated Municipal Wastewater And Residual Disinfectant. **Ming-Kai Hsieh**

532 Determination of the Aspect Ratio of Metal Colloid Disks from Dual Angle DLS Measurements. **Carlos A. Rega**

533 Colloidal Chemistry Methods for Nanostructures Engineering. **Veronica Salgueirino-Maceira**

534 Withdrawn.

535 Intermittent Brownian Dynamics Over a Colloidal Interface: Probing Adsorption and Relocation Statistics by NMR Relaxometry. **Pierre Levitz**

536 The Maximum of Phosphate Adorption at pH 4.0: Why It Appears on Al Oxides but Does Not on Fe Oxides. **Xiao Huang**

537 A Model for Lipid-Coated Microbubble Growth And Dissolution In Complex Media. **James J. Kwan**

538 Chemisorption of Bidentate Ligands Onto Titanium Dioxide. **Alberto E. Regazzoni**

539 A Study of the Factors Influencing the Cr(III)-Cr(VI) Redoxi Reaction In the Ca-Bentonite-Mn(IV)-Oxide System. **Agnes Hargitai Toth**

540 Transport Processes In Micellar Solutions of Ethoxylated Nonyl Phenols. An Empirical Viscometry, DLS, NMR And QENS Study. **Szabolcs Vass**

541 Diffusion of Poly(ethylene oxide) In a System Poly(methyl methacrylate)/Solvent. **Zomalala Ramananarivo**

542 Conformational Changes at Colloidal Interfaces with Nonlinear Optical Techniques. **Benedikt Schuerer**

543 Anionic Hetero-Gemini Surfactants Synthesized From Unsaturated Fatty Acid. **Kenichi Sakai**

544 Structure and Organization of Liquids at Surfaces. **Michael R. Brindza**

545 Orgnization of Wax by Surfactant Mixture to Fabricate Discotic Colloids. **Zhengdong Cheng**

546 Colloidal Fumed Silica In Electrolytes - Aging and Transport Properties of a Surface Modified System. **Jonas Nordström**

547 Nanocomposite Coatings for the Energy Saving Technology In the Energy Transportation. **Ludmila Boinovich**

Wednesday, June 17, 2009

Wednesday, June 17, 2009, 8:00 AM - 9:05 AM

Plenary Lecture

Auditorium, Lerner Hall

Organizer: Ponisseril Somasundaran

8:00 548 Nanotechnology, Biology and Business. Ivar Giaever

Wednesday, June 17, 2009, 9:05 AM - 9:30 AM

Coffee Break

Auditorium North Lobby, Lerner Hall

Wednesday, June 17, 2009, 8:00 AM – 4:00 PM

Coffee Break

Carleton Lounge, Mudd Bldg.

Wednesday, June 17, 2009, 9:30 AM - 12:15 PM

Biocolloids for Imaging and Drug Delivery V: Self Assembly

Rm. 1024, Mudd Bldg.

Organizers: Mark Borden and Steven P. Wrenn

Presider: Raymond S. Tu

9:30 549 Flexible Filaments for In Vivo Imaging and Delivery. Dennis Discher (Keynote)

10:00 550 Assembly of Bioinspired Capsules for Drug Delivery Applications. Angus P. R. Johnston

10:20 551 Self-Assembled Nanocarriers From Poly(amino acid) Derivatives for Cancer Diagnosis and Chemotherapy. Hyun Jin Lee

10:40 552 Complexation of Statins with Cyclodextrins in Macromolecular Solutions. András Süle

11:00 553 Radiolabelled Colloidal Cyclodextrin: Characterization and Its Role in Bacterial Infection Imaging. Gurupad Bandopadhyaya

11:20 554 Diverse and Invariant Self-Aggregates of Hydrophobically Modified Poly(aspartic acid) In Aqueous Solution. Jong-Duk Kim

11:40 555 Interdigitated Phospholipid Bilayers On Highly Curved SiO₂ Nanoparticles. Selver Ahmed

12:00 556 Seeing Multifunctional Nano- And Micro-Particles Suitable for Imaging & Therapy Using Freeze-Fracture Electron Microscopy. Brigitte Papahadjopoulos-Sternberg

Wednesday, June 17, 2009, 9:30 AM - 12:00 PM

Biointerfaces III: Membrane Rearrangement/Disruption 1

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presider: Anne Hinderliter

9:30 557 Skin Lipid Macromolecular Structure: Review of Current Status, Conflicting Information And Attempts to Relate to Compromised Barrier In Disease Skin. Linda D. Rhein (Keynote)

10:00 558 Effect of Low Density Lipoprotein Aggregate Size on Its Uptake and Foam Cell Formation in Macrophages. Michael J. Walters

10:20 559 Barrier Function of Lipid Membrane In the Interaction with Nanostructures. **Sergiy Minko**

10:40 Break.

11:00 560 Site-Specific Interactions of a Lytic Peptide through Surface-Selective Spectroscopy. **Andrew C. Rapson**

11:20 561 Vectorial Transplantation of phi29 gp10 N-His-Tag Connector Protein Into C20BAS Liposomes. **David H. Thompson**

11:40 562 The Translocation Mechanism of Arginine Rich Cell Penetrating Peptides. **Angel E. Garcia**

Wednesday, June 17, 2009, 9:30 AM - 12:10 PM

Colloid Rheology and Microrheology V

Rm. 700, Fairchild Bldg.

Organizer: Eric Furst

Presider: Jan Vermant

9:30 563 Rheological and Electrokinetic Properties of Clay Suspensions with Polymer and Electrolyte Additives. **Cesar C. Santana**

9:50 564 Rheo- SALS Study of Aqueous Solutions of Cationic Surfactant And Salt – Effect of Temperature And Salt Concentration. **Prachi Thareja**

10:10 565 Microrheology Study On Wormlike Micellar Solutions. **Claude Oelschlaeger**

10:30 566 Viscoelastic Wormlike Micelles of Long Polyoxyethylene Chain Phytosterol with Lipophilic Nonionic Surfactant in Aqueous Solution. **Suraj Chandra Sharma**

10:50 567 Viscoelasticity and Stability of Single Walled Carbon Nanotube – Unsaturated Polyester Resin Dispersions. **Matthew J. Kayatin**

11:10 568 Rheology and Liquid Crystallinity of Dispersions of Carbon Nanotubes In DNA and Enzymes. **Virginia A. Davis**

11:30 569 Particle Dynamics and Rheology of SWNT Suspensions Under Shear and Electric Fields. **Jerry W. Shan**

11:50 570 Criticality for High Shear-Induced Gelation In a Microchannel for Charge-Stabilized Colloids without Using Electrolytes. **Hua Wu**

Wednesday, June 17, 2009, 9:30 AM - 11:50 AM

Colloid and Surface Science in Mineral Separations and Processing II

Rm. 900, Fairchild Bldg.

Organizer: D. R. Nagaraj

Presiders: Zafir Ekmekçi and David Beattie

9:30 571 A Cryo-SEM Study of Raking Behavior in Assisting Clay Based Tailing Dewatering in Thickener. **Jianhua Du**

9:50 572 Synchrotron XPS Studies of Solution Exposed Chalcopyrite, Bornite, and Heterogeneous Chalcopyrite with Bornite. **David Beattie**

10:10 573 Adverse Effects of Slimes In Mineral Separations: Myths and Misconceptions. **D. R. Nagaraj**

10:30 574 Physicochemical Interactions Among Weathered Mineral Ultrafines and Fines and Their Effects On Selective Mineral Separations. **S. Murthy Khandrika**

10:50 575 The Relationship Between Pyrrhotite Mineralogy And Electrochemistry. **Zafir Ekmekçi**
11:10 576 Adsorption of Colloidal Gold Onto Silanized Quartz and Its Recovery by Carrier Flotation. **José Farias Oliveira**
11:30 577 The Relationship Between Oxidation Index and Flotation Performance by Using EDTA Extraction Method. **Ozlem Bicak**

Wednesday, June 17, 2009, 9:30 AM - 12:30 PM

Colloidal Gels and Microgels V

Rm. 924, Mudd Bldg.

Organizers: Martin Snowden and Brian Vincent

Presider: L. Andrew Loyn

9:30 578 Network Induced Heterogeneities In Colloidal Gels. **Emanuela Del Gado**
9:50 579 Field-Driven Assembly And Gelation of Janus And Dipolar Particles. **Orlin D. Velev**
10:10 580 Characterization of Hydrogels Produced From Silk Fibroin Metastable Solutions. **Marisa M. Beppu**
10:30 581 Thermosensitive Microgels for the Scavenging and Delivery of Local Anesthetics. **Todd R. Hoare**
10:50 582 Effect of Primary Particle Morphology On Structure of Gels Formed In Intense Turbulent Shear. **Paolo Arosio**
11:10 583 Pulsating Responsive Nanogels. **Imre Varga**
11:30 584 Phase Behavior of Colloidal Suspensions of Soft, Stimuli-Responsive Microgels. **Victor Breedveld**
11:50 585 Mutual Influence of the Coil-to-Globule Transition of Poly(N-isopropylacrylamide) and Drug Molecule Dynamics. **Christian Hofmann**
12:10 586 Interaction Between Lysozyme and Poly(NIPAM-co-AAc) Microgels. **Christian Johansson**

Wednesday, June 17, 2009, 9:30 AM - 12:30 PM

Electrokinetics & Microfluidics V

Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna

Presider: Hao Lin

9:30 587 The Effects of Dielectric Thin Film Coatings On Induced Charge Electroosmotic Slip Velocities. **Andrew J. Pascall**
9:50 588 Experimental Study of the Rise Time of Electroosmotic Flow In a Microcapillary. **Guiren Wang**
10:10 589 AC Electrokinetic Fast Mixing In Non-Parallel Microchannels. **Guiren Wang**
10:30 590 Dielectrophoretic Choking Phenomenon In a Converging-Diverging Channel. **Ye Ai**
10:50 591 Electrostatic Printing of Sub-Nanoliter Droplets for Tissue Engineering with Precise Concentration Control Via Digital Microfluidics. **Randall D. Evans**
11:10 592 A Synthetic Jet Produced by Electrowetting-Driven Bubble/Droplet Oscillations. **Sung Hee Ko**
11:30 593 A New Switching Method of Two-Dimensional EWOD-Based Droplet Translation On Single-Plate Configuration. **Jun Kwon Park**

11:50 594 A New Electrohydrodynamic Flow Due to Field-Induced Conductivity Gradient In Dielectric Liquids. **Kwan Hyoung Kang**

12:10 595 Mechanism of Electrohydrodynamic Flow in AC Electrowetting. **Horim Lee**

Wednesday, June 17, 2009, 9:30 AM - 12:20 PM

Emulsions II

Rm. 825, Mudd Bldg.

Organizers: Stig Friberg

Presider: Orlando D. H. Santos

9:30 596 Withdrawn.

9:50 597 Particle-Surfactant Interactions at Liquid Interfaces: Emulsions and Foams. **Jhonnny A. Rodrigues**

10:20 598 Porous Materials and Capsules From Particle-Stabilized Emulsions. **Ilike Akartuna**

10:40 Break.

11:00 599 Development of Highly Efficient Nanoparticulate Pickering Emulsifiers Using Grafted Amphiphilic Polymers. **Trishna Saigal**

11:20 600 Control On the Type and Stability of Pickering Emulsions. **Mathieu Destribats**

11:40 601 Active Emulsions. **Seth Fraden**

12:00 602 Flow of Emulsion In Confined Geometry. **Annie Colin**

Wednesday, June 17, 2009, 9:30 AM - 12:15 PM

Environmental Colloid and Interfacial Processes III

Davis Auditorium, Schapiro Bldg.

Organizers: Qilin Li and Helen Nguyen

Presider: V. Faye McNeil

9:30 Welcoming Remarks.

9:35 603 "The Role of Mineral Dust Aerosol In Global Climate And Chemistry". **Mark A. Young (Keynote)**

9:55 604 Electrochemical Impedance Spectroscopy (EIS) Based Characterization of Mineral Colloids Deposition From Precipitation Reactions. **Heng Li**

10:15 605 Production of α -Ketocarboxylic Acids In the Reductive Tricarboxylic Acid Cycle by Mineral Photoelectrochemistry. **Marcelo I. Guzman**

10:35 606 Sources and Properties of Organic Material in Aqueous Atmospheric Aerosols. **V. Faye McNeill**

10:55 607 Complexation of Multivalent Cations by Humic Substances: a High Precision Conductivity Study. **Gaëlle M. Roger**

11:15 608 In Pursuit of the Elusive Bound Site Activity Coefficient. **Nicholas T. Loux**

11:35 609 Water Adsorption Contribution to Electrostatic Charge Build-up. **Fernando Galembeck**

11:55 610 Estimation of Diffuse Layer Model (DLM) Intrinsic Acidity and Electrolyte Ion Site Binding Constants. **Nicholas T. Loux**

Wednesday, June 17, 2009, 9:30 AM - 12:10 PM

Fabrication of Colloidal Assemblies and Devices III: Field-Assisted Assembly

Rm. 633, Mudd Bldg.

Organizers: Darrell Velezol and Orlin D. Velev

Presider: Chekessa M. Liddell

9:30 611 Directed Self-Assembly of Colloidal Crystals with Electric Fields. **Jason M. McMullan**

9:50 612 Dielectrophoretic Assembly of "Patchy" Particles In AC Electric Fields. **Sumit Gangwal**

10:10 613 Electric Field Driven Assembly of Anisotropic Nanoparticles. **Manish Mittal**

10:30 614 Electric Field Induced Alignment And Self-Assembly of Particles On Fluid-Fluid Interfaces. **Sai Nudurupati**

10:50 615 New Insights Into the Self-Assembly Conditions of Dielectric Nanoporous Particles Under An External Electrical Field. **Jacques Persello**

11:10 616 Fabrication of Microvasculature Via Suspension Dielectrophoresis. **James F. Gilchrist**

11:30 617 Templated Magnetic Materials From Nanosphere Lithography-Derived Patterns. **R. Lloyd Carroll**

11:50 618 Aggregation and Gelation Behavior of Polymer-Magnetic Colloids Under the INFLUENCE of AN External Magnetic Field. **Marco Furlan**

Wednesday, June 17, 2009, 9:30 AM - 11:30 AM

General II

Rm. 227, Mudd Bldg.

Presider: James B. Miller

9:30 619 Enhancement of Photocatalytic Inactivation of Microbes with Polyhydroxy Fullerenes-TiO₂ Nanocomposite. **Vijay Krishna**

9:50 620 Copper Coated Silica Nanoparticles for Catalytic Applications. **Amit Singh**

10:10 621 Preparation And Nano-Network Formation of Nafion®-Protected Metal Nanoparticles for Electrocatalysts. **Naoki Toshima**

10:30 622 Virus Inactivation In Drinking Water by TiO₂ Based Nanocomposite Photocatalysts. **Michael V. Liga**

10:50 623 Surface Acidity of Graphite Flake From Programmed Thermal Desorption. **Sheldon P. Wesson**

11:10 624 Thioether Self-Assembled Monolayers On Au{111}. **Darin O. Bellisario**

Wednesday, June 17, 2009, 9:30 AM - 12:30 PM

Hydrophobic Interactions I

Rm. 233, Mudd Bldg.

Organizer: Roe-Hoan Yoon

Presider: William A. Ducker

9:30 625 Modeling of Hydrophobic Interactions. **Alenka Luzar (Keynote)**

9:55 626 Vapor Phase Nucleation On Hydrophobic Surfaces. **Dusan Bratko**
10:15 627 Nanobubbles: What Are They And Why Are They Stable? **William Ducker**
10:35 628 On the Stability of Nanobubbles Trapped at a Solid-Liquid Interface. **Rogério Colaco**
10:55 629 Water Density at Hydrophobic Surfaces: Neutron Scattering Studies. **Jaroslaw Majewski**
11:15 630 Thermodynamcis of Macroscopic Hydrophobic Interaction. **Jan Christer Eriksson**
11:35 631 Biologically Inspired Hairy Surfaces with Ultrahydrophobicity. **Shu-Hau Hsu**
11:55 632 Interactions of Water and Aqueous Solutions with Hydrophobic Polymer Surface. **Alexandre Emelyanenko**
12:15 633 Variational Implicit Solvation Model (VISM) for Hydrophobic Interactions. **Joachim Dzubiella**

Wednesday, June 17, 2009, 9:30 AM - 11:40 AM

Interfacial Forces and Fields V

Rm. 834, Mudd Bldg.

Organizers: Pierre M. Adler and Eric R. Dufresne

Presider: Sven-Holger Behrens

9:30 634 Direct Measurement of Critical Casimir Forces. **Clemens Bechinger (Keynote)**
10:00 635 Direct Measurement of the Nanobubble-Induced Depletion Attraction with Total Internal Reflection Microscopy (TIRM). **To Ngai**
10:20 636 Probing Elasticity of Substrates Using Particle Movements In a Surrounding Fluid. **Ee Hou Yong**
10:40 637 Electric Field Induced Rupture of Phospholipid Vesicles Suspended Above Coplanar Microelectrode Arrays. **Robert D. Tilton**
11:00 638 Frequency Dependent Deformation of Liquid Crystal Droplets in An External Electric Field. **Günter K. Auernhammer**
11:20 639 Withdrawn.

Wednesday, June 17, 2009, 9:30 AM - 12:20 PM

Polymer Interfaces II

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presiders: Monika Schönhoff and Frank Blum

9:30 640 A Versatile Method for Covalent Layer by Layer Assembly of Multilayer Organic Films. **Jeffrey T. Koberstein**
10:00 641 Atomic Force Microscopy Measurements of Adhesion and Morphology of Polyelectrolyte Multilayers. **Sena Ada**
10:20 642 Deposition of Aqueous Polyelectrolyte-Surfactant Complexes at Solid Surfaces. **Lennart Piculell**
10:40 643 Dendrimer Adsorption On Model Surfaces as Studied by Quartz Crystal Microbalance with Dissipation Monitoring (QCM-D) and Surface Plasmon Resonance (SPR). **Mattias Berglin**
11:00 644 Calorimetric Study of the Adsorption of PEO and PVP Onto Silica. **Naa Larteokor McFarlane**
11:20 645 Correlation of Surfactant/ Polymer Phase Behavior with Adsorption On Target Surfaces.

Joseph O. Carnali

11:40 646 In Situ Atomic Force Microscopy of Modified Dextrin Adsorption On Hydrophobic And Hydrophilic Gangue Minerals. **Agnieszka Mierczynska-Vasilev**

12:00 647 Withdrawn.

Wednesday, June 17, 2009, 9:30 AM - 12:10 PM

Structures at Interfaces with Liquids V

Rm. 337, Mudd Bldg.

Organizers: Kenneth B. Eisenthal and Franz Geiger

9:30 648 Interfacial Molecular Recognition and Chirality In Amphiphilic Assemblies. **Dieter Vollhardt (Keynote)**

10:10 649 Nonlinear Vibrational Spectroscopy for the Analysis of Biological Membranes. **John C. Conboy**

10:50 650 The Promise and Pitfalls of Polarization Analysis in Nonlinear Optics. **Garth J. Simpson**

11:30 651 Effect of Ions On the Quartz/Water Interface. **Mohsen Yeganeh**

11:50 652 Self-Organizing, Ultra-Thin Gel Films at the Interface Between Oil and Water: Synthesis, Structure and Dynamic Properties. **Heinz Rehage**

Wednesday, June 17, 2009, 9:30 AM - 11:30 AM

Surfactants and Supramolecular Assemblies: Liposomes

Rm. 1127, Mudd Bldg.

Organizer: Alexander Couzis

Presiders: Charles Maldarelli and Alfredo R. Narvaez

9:30 653 Dispersion Stability and Dynamic Surface Tension of Aqueous Lipid/Protein Dispersions. **Elias I. Franses (Keynote)**

10:10 654 Physical Stability of SUV Liposomes in Colloidal and Supramolecular Systems. **Ferenc Csemesz**

10:30 655 DNA-Functionalized Liposomes: Lipid-Induced Changes in Binding Strength and DNA Surface Localization. **Paul A. Beales**

10:50 656 Fully Uncomplexed Cyclodextrin in the Presence of Vesicular Aggregates. **Pablo Hervés**

11:10 657 Microcalorimetric Study of Inclusion Complex Formation of Beta-Cyclodextrin with Homologous Series of Anionic, Cationic and Nonionic Surfactants. **Zoltán Király**

Wednesday, June 17, 2009, 2:00 PM - 4:30 PM

Biointerfaces IV: Membrane Rearrangement/Disruption 2

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presider: Sylvio May

2:00 658 Enzyme Mediated Membrane Restructuring: An Interplay Between PLA₂ Activity And Membrane Organization. **Chad Leidy (Keynote)**

2:30 659 Origin of Antimicrobial Resistance and Fluidity Dependent Membrane Structural Transformation by Antimicrobial Peptide Protegrin-1. **Ka Yee C. Lee**

2:50 660 Lipid Bilayers as Allosteric Regulators of Membrane Protein Function. **Olaf S. Andersen**

3:10 Break.

3:30 661 Influence of Enzymes Lipases on Properties of Solid Supported Lipid Layers. **Emil Chibowski**

3:50 662 pH-Controlled Binding Reactivity of Functionalized Vesicles Composed of Heterogeneous Lipid Membranes. **Stavroula Sofou**

4:10 663 Interaction Between Proteins And Polymer Surfaces During Competitive Adsorption. **Maria Holmberg**

4:30 Lipase Catalysis as a Self-Regulated Reaction. **Reinhard Miller**

Wednesday, June 17, 2009, 2:00 PM - 4:45 PM

Capillary and Wetting Phenomena I

Rm. 337, Mudd Bldg.

Organizer: Mohamed E. Labib

Presiders: Darsh T. Wasan and S. S. Dukhin

2:00 664 Contact Angle Hysteresis and Pinning of Evaporating Charged/Uncharged Droplets On Hydrophobic Surfaces. **Jeongeun Ryu**

2:20 665 Nanofluids Wetting Solid Surfaces. **Darsh T. Wasan**

2:50 666 Capillary Driven Flows In Tubes with Chemically Patterned Walls. **Mihail N. Popescu**

3:10 667 Delayed Coalescence of Droplets with Completely Miscible Liquids. **Hans Riegler**

3:30 668 Capillary Forces and Suspension Rheology. **Norbert Willenbacher**

3:50 669 Role of Capillary Interactions In Solid Stabilized Emulsions. **J. Groenewold**

4:10 670 Line Energy, Line Tension and Drop Size. **Rafael Tadmor**

4:30 671 Impact of Line Tension On the Contact Angle of Nano-Sized Sessile Fullerene Droplets at Solid/Gas Interfaces. **Hans Riegler**

Wednesday, June 17, 2009, 2:00 PM - 4:40 PM

Colloid and Surface Science in Mineral Separations and Processing III

Rm. 900, Fairchild Bldg.

Organizer: D. R. Nagaraj, Cytec Industries

Presiders: Stephen J. Neethling and Robert J. Pugh

2:00 672 Particle-Stabilised Foams. **Diana Tran**

2:20 673 Coalescence of Bubbles and Foaming in Chemical Surfactant Free Aqueous Dispersions of Mineral Particles. **Robert J. Pugh**

2:40 674 Models for Predicting the Evolution of the Bubble Size Distribution In Flotation Froths And Other Foams. **Stephen Neethling**

3:00 675 Entrapment Efficiencies of Hydrodynamic Boundary Layers On Rising Bubbles. **Elena Mileva**

3:20 676 Simple Fundamentally Based Relationships for Predicting Entrainment and Froth Recovery in

Flotation Cells. **Stephen J. Neethling**

3:40 677 Cavitation Picobubble Enhanced Column Flotation of Fine Coal Particles. **Daniel Tao**

4:00 678 Selective Separation of Fine Particles at An Air-Water Interface. **Diana Tran**

4:20 679 Measurement of Collector Adsorption on Sulphide Minerals by Using Electrochemical Methods. **Esra Bagci Tekes**

Wednesday, June 17, 2009, 2:00 PM - 4:40 PM

Colloids in Non-Aqueous Media I

Rm. 227, Mudd Bldg.

Organizers: Ian Morrison and Filip Strubbe

2:00 680 Two Independent Measurements of Debye Lengths In Doped Nonpolar Liquids. **Dennis C. Prieve (Keynote)**

2:40 681 Stabilization of CeO₂ Nanoparticles in a CO₂ Rich Solvent. **Julian Eastoe**

3:00 682 Ellipsoidal Inclusions in Lyotropic Nematic Liquid Crystals. **Olivier Mondain-Monval**

3:20 683 Reverse Microemulsions on the Basis of Brij-30 as Mobile Phases in HPLC. **Marina D. Rukhadze**

3:40 684 2D Self-Assembly of Charged Nanoparticles in Non-Polar Solvents. **Sang-Kee Eah**

4:00 685 Organic Phase-Directed Templated Synthesis and Characterization of Patterned Nanoporous Titania Platinum Nanocomposites. **Arijit Bose**

4:20 686 Novel Method Employing Inverse Polymeric Lattices to Flocculate and Separate Oil-Continuous Dispersions. **Raymond S. Farinato**

Wednesday, June 17, 2009, 2:00 PM - 4:20 PM

Electrokinetics & Microfluidics VI

Sineband East 415, Schapiro Bldg.

Organizers: Leslie Yeo and Shelley L. Anna

Presider: Daniel Attinger

2:00 687 Method for Measuring Dielectrophoretic Spectra of Individual Microscopic Particles without Microelectrodes. **Xiaolu Zhu**

2:20 688 Analytes Focusing and Preconcentration Using a Combination of AC and DC Electric Fields. **Dimiter N. Petsev**

2:40 689 Redistribution And Removal of Particles From Drops Surfaces. **Sai Nudurupati**

3:00 690 Effects of Slip and Double-Layer Sterics On Electrophoresis. **Todd M. Squires**

3:20 691 DNA Electrophoresis In a Sparse Ordered Post Array. **Kevin D. Dorfman**

3:40 692 Scaling Analysis of AC Electrokinetic Colloidal Motion In Microfluidic Systems. **Seungkyung Park**

4:00 693 Self-Assembled Multi-Particle Packed Structures for DNA Separation. **Neda Nazemifard**

Wednesday, June 17, 2009, 2:00 PM - 4:50 PM

Emulsions III

Rm. 825, Mudd Bldg.

Organizers: Stig Friberg
Presider: Patricia . A Aikens

2:00 694 Antioxidant Distributions Between Oil, Water, and Interfacial Regions of Model Food Emulsions. **Laurence S. Romsted (Keynote)**

2:30 695 Distribution of Gallic Acid Derivatives Between the Oil, Water, and Interfacial Regions of a Model Food Emulsion. **Carlos Bravo-Díaz**

2:50 696 Curved Space Crystallography at An Oil-Water Interface. **William T.M. Irvine**

3:10 697 An O/LC Emulsion with Extreme O/LC Ratio; Relation to the Phase Diagram. **Yihan Liu**

3:30 698 Structural Modulation of the Liquid Crystals and Gel Emulsions In Presence of Glycerol. **Mohammad M. Alam**

3:50 699 Concentrated Colloidal Emulsions. **Krassimir Velikov**

4:10 700 Droplet Packing In High Internal Phase Emulsions. **Andrew J. Jackson**

4:30 Break.

Wednesday, June 17, 2009, 2:00 PM - 4:40 PM
Energy From Fossil Fuels & Alternative Sources I
Rm. 924, Mudd Bldg.

Organizers: Jae W. Lee and Zhenghe Xu
Presider: Costas Tsouris

2:00 701 Surface Modification through Chemical Additives in Athabasca Oil Sands Processing. **Jacob Masliyah (Keynote)**

2:40 702 Adsorption Isotherm of Sodium Dodecyl Sulfate on Hydrate Particles. **Chi Lo**

3:00 703 Development of Starch Based Additive for Stabilisation of Coal Water Slurry. **Pramila Kumari Misra Jr.**

3:20 704 Nucleation and Crystallization Kinetics of Hydrate Formation in W/O Emulsion. **Juan Ramon Avendano-Gomez**

3:40 705 UV-Induced Modifications In Bitumen Langmuir Films. **Paolo G. Mussone**

4:00 706 Study of Bitumen-Bubble Interactions by Atomic Force Microscopy. Sili Ren, **Zhenghe Xu**

Wednesday, June 17, 2009, 2:00 PM - 5:05 PM
Engineering at the Nano-Scale and Nano-Technology I
Rm. 1024, Mudd Bldg.

Organizers: Yunfeng Lu and Brij Moudgil

2:00 707 Metabolically and Optically Defined Lithography Using Living Cells. **C. Jeffery Brinker (Keynote)**

2:45 708 Continuous Modification of Nucleic Acids within Semipermeable Polymer Microreactors. **Andrew D. Price**

3:05 709 Biochemical-to-Optical Signal Transduction by a Nanostructured Device Assembled From a Responsive Hydrogel and Noble Metal Nanoparticles. **Ihor Tokarev**

3:25 Break.

3:35 710 Self-Assembled Systems of Nanoparticles: Similarity with Biological Systems. **Nicholas A. Kotov**

4:05 711 Biopolymer Multilayers for Promoting Immune Cell Adhesion. **Fernando C. Vasconcellos**

4:25 712 Hybrid Lipid/DNA Self-Assemblies. **Debora Berti**

4:45 713 Low-Adhesive Nanostructures Responsive Coatings. **Sergiy Minko**

Wednesday, June 17, 2009, 2:00 PM - 4:40 PM
Environmental Colloid and Interfacial Processes IV

Davis Auditorium, Schapiro Bldg.

Organizers: Qilin Li and V. Faye McNeill

Presider: Helen Nguyen

2:00 714 Influence of Solution Chemistry On the Stability of Bacteriophage MS2. **Steven E. Mylon**

2:20 715 Role of Divalent Cations on Adsorption Kinetics of Bacteriophage MS2 and Rotavirus to Natural Organic Matter. **Thanh Nguyen**

2:40 716 Determining the Influence of Flagella and Growth Phase in *Salmonella Enterica* Transport. **Berat Haznedaroglu**

3:00 717 Adhesion and Swimming Dynamics of Flagellated Bacteria Under Laminar Flow. **Jane Hill**

3:20 718 Bacterial Transport through Unsaturated Porous Media In the Presence of Anionic And Nonionic Surfactants. **Derick G. Brown**

3:40 719 Role of Biofilm EPS On the Fate and Transport of *Escherichia Coli* In Porous Media. **Yang Liu**

4:00 720 *Escherichia coli* O157:H7 and *Cryptosporidium parvum* Oocysts Transport In Saturated Porous Media: Role of Solution Chemistry and Surface Macromolecules. **Hyunjung N. Kim**

4:20 721 Sensitivity of *Aureococcus Anophagefferens* to Heavy Metals: The Effect of Metal Adsorption on Toxicity. **Bin Wang**

Wednesday, June 17, 2009, 2:00 PM - 4:50 PM

Fabrication of Colloidal Assemblies and Devices IV: Interfacial and Convective Assembly
Rm. 633, Mudd Bldg.

Organizers: Darrell Velez and Orlin D. Velev

Presider: Ilona Kretzschmar

2:00 722 Confinement Induced Photonic Structures of Nonspherical Colloidal Building Blocks. **Chakesha M. Liddell (Keynote)**

2:30 723 Two-Dimensional Self-Assembled Colloidal Crystals by Fluid Interface Templating. **Bum Jun Park**

2:50 724 Electric Field-Assisted Convective Assembly of Large-Domain Colloidal Crystals. **Jairus Kleinert**

3:10 725 Direct Visualization of Convective Deposition of Microsphere Monolayers. **Pisist Kumnorkaew**

3:30 726 Stripe Pattern Formation On Hydrophilic Surfaces by Evaporation-Induced Self-Assembly. **Satoshi Watanabe**

3:50 727 Colloid Fabrication by Co-Extrusion. **Simeon Stoyanov**

4:10 728 Impact of Graft Chemistry and Evaporation Rate On the Formation of 2-D Nanoparticle Assemblies. Benjamin K. Beppler

Wednesday, June 17, 2009, 2:00 PM - 4:45 PM

Hydrophobic Interactions II

Rm. 233, Mudd Bldg.

Organizers: William A. Ducker and Roe-Hoan Yoon

2:00 729 Water Structure Close to Ordered and Disordered Hydrophobic Surfaces. Eric Tyrode (Keynote)

2:25 730 Structure, Thermodynamics, and Dynamics of Hydration and Polymer Adsorption at Hydrophobic to Hydrophilic Interfaces. Sumanth N. Jamadagni

2:45 731 The Effect of Roughness and Wettability on the Adhesion Forces in Liquid Media. Ana Paula Serro

3:05 732 Surface Forces Measured Between Hydrophobic Gold Surfaces In n-Alcohols and In Water-Ethanol Mixtures. Roe-Hoan Yoon

3:25 733 Hydrophobic Forces Between Silanated Silica Surfaces: Interactions with and without Nanoscopic Bubbles. Naoyuki Ishida

3:45 734 Interaction Forces Between Hydrophilic and Hydrophobic Surfaces In Semi-Aqueous Systems. Shoehah Assemi

4:05 735 Hydrophobic Forces In Thin Aqueous Films Confined Between Air Bubbles. Roe-Hoan Yoon

4:25 736 A Comprehensive Model of the Hydrophobic Nanobubble Bridging Capillary Force. Marc A. Hampton

Wednesday, June 17, 2009, 2:00 PM - 4:10 PM

Interfacial Forces and Fields VI

Rm. 834, Mudd Bldg.

Organizers: Sven-Holger Behrens and Eric R. Dufresne

Presider: Pierre M. Adle

2:00 737 Tuning Interaction Forces: From Heterogeneous Charge Distributions to the Potentiostatic Control of Modified Electrodes. Georg Papastavrou (Keynote)

2:30 738 Using Roughness-Controlled Depletion Attraction to Assemble Colloidal Particles. Kun Zhao

2:50 739 Interparticle Forces at the Nanoscale. Darrell Velezol

3:10 740 Hydrodynamic Drainage Forces In the Presence of a Silica Nano-Particle Super Hydrophobic Surface Measured Using AFM. Md. Hemayet Uddin

3:30 741 Colloid Transport near Rough and Charge Heterogeneous Substrates: How Hydrodynamic and Colloidal Interactions Influence Deposit Morphologies. Subir Bhattacharjee

3:50 742 Nonlinear Solute Transport Past Nanostructured Surfaces. Vladimir Lobaskin

Wednesday, June 17, 2009, 2:00 PM - 4:40 PM

Interfacial Rheology I

Rm. 700, Fairchild Bldg.

Organizers: Gerald G. Fuller and Reinhard Miller
Presider: Libero Liggieri

2:00 743 Dilational Rheology of Mixed Adsorption Layers at Liquid Interfaces. **Reinhard Miller**
2:20 744 Dilational Surface Viscoelasticity of Complex Fluids. **Boris A. Noskov**
2:50 745 Interfacial Rheology: Dilational and Shear Viscosity of Polymer Monolayers. **Ramon G. Rubio**
3:10 746 Comparison Between Shear And Dilatational Interfacial Rheology. **M. A. Cabrerizo-Vilchez**
3:30 747 Dilational Rheology to Investigate the Dynamics of Surfactant and Particle-Laden Interfacial Layers. **Francesca Ravera**
4:00 748 Interfacial Rheology of Proteins, Particles and Their Mixtures. **Brent S. Murray**
4:20 749 Surfactant Mixtures with High Surface Modulus – Characterization and Application in Foam Studies. **Nikolai D. Denkov**

Wednesday, June 17, 2009, 2:00 PM - 4:30 PM

Polymer Interfaces III

InterSchool Lab Rm. 750, Schapiro Bldg.
Organizers: Frank Blum and Maria M. Santore
Presider: Spiros H. Anastasiadis

2:00 750 Effect of Interfacial Interactions on Polymer Glass Transitions. **Frank Blum (Keynote)**
2:30 751 Single Protein Diffusion at the Interface of Responsive Polymer Brush Thin Films. **Shengqin Wang**
2:50 752 Scaling Law of Poly(ethylene oxide) Chain Permeation through the Nanoporous Wall of Polyelectrolyte Capsules. **Monika Schönhoff**
3:10 753 Autophobic Dewetting of Compatibilized Polymer Droplets In Immiscible Polymer Melts. **David Green**
3:30 754 The Redox Mediation at De-Activated Poly(o-aminophenol) (POAP) Films. **Ricardo Tucceri**
3:50 755 Stereospecific Interactions Between PEO And PMMA According to PMMA Tacticity. **Zomalala Ramananarivo**
4:10 756 Fracture Mechanisms at a Compatibilized Polymer/Polymer Interface. **Yongsok Seo**

Wednesday, June 17, 2009, 2:00 PM - 4:20 PM

Surfactants and Supramolecular Assemblies: Polyelectrolyte and Polymer Assemblies in Solution

Rm. 1127, Mudd Bldg.

Organizer: Charles Maldarelli
Presiders: Alexander Couzis and Alfredo R. Narvaez

2:00 757 Colloidal Interactions Mediated by Wormlike Micelles. **Matthew E. Helgeson**
2:20 758 Towards the Development of Wormlike Micelles with Temperature-Insensitive Rheology. **Toufiq Ahmed**
2:40 759 Withdrawn.
3:00 760 Micron-Sized Capsules Assembled From pH-Responsive Block Copolymer Micelles. **Timothy W. Addison**

3:20 761 Non-Amphiphilic Assembly in Water: a Molecular Threading Model for Chromonic Liquid Crystals. **Karen A. Simon**

3:40 762 Tunable Self-Assemblies Based on Metal-Bisligand Coordination Polymer and Oppositely Charged-Neutral Block Polyelectrolytes. **Yun Yan**

4:00 763 Polyelectrolyte-Surfactant Coacervates: Equilibrium Mesophase Structures with Vestiges of Solution Precursors. **Paul Dubin**

Wednesday, June 17, 2009, 4:45 PM - 6:15 PM

Wednesday Poster Session

Library, Low Bldg.

Organizers: Rahul Bagwe and Tarun Bhambhani

764 Discriminatory Protein Adsorption in a NanoPatterned Polymer Brush. **Saugata Gon**

765 Synthesis of Thermoresponsive AuNP/PNIPAm-PEG Core/Shell Microcapsules for Cell Encapsulation. **Tatiya Trongsatitkul**

766 Quantifying Biomimetic Motion Signatures Mediated by Nonspecific Molecular Interactions. **Surachate Kalasin**

767 Looking Beyond Rafts and Cytokine Receptors Signaling. **Montserrat Nogueira Alvarez**

768 Bioactivated Microfluidic Channels for Electrical Detection of Cancer Biomarkers and Characterization of Ligand Interactions. **Mehdi Javanmard**

769 Multilayer Nanoneedle Array in Microfluidic Platform for Real-Time Monitoring of Single Antibody-Antigen Interaction. **Hesaam Esfandyarpour**

770 Vegetable Proteins as Emulsifiers for Obtaining Novel Foods. **Carme Gonzalez**

771 Ultrasound Based Drug Delivery And Colloidal Science of Contrast Agents. **Stephen Dicker**

772 Proton Ions Induce Vesicle Formation in Protein/Single-Chained Anionic Surfactant/H₂O System. **X. Guo**

773 Volumetric Study of Alcohol Binding to Molecular Surface of Globular Proteins. **Michio Yamanaka**

774 Thermostability Studies of Some Ferrocene Derivatives Conjugating with DNA Oligos. **Dongbiao Ge**

775 Bilayer Phase Behavior of Asymmetric Phospholipids with An Unsaturated Acyl Chain. **Shoji Kaneshina**

776 Effect of Vesicle Size on the Prodan Fluorescence in Bilayer Membrane of Symmetric and Asymmetric Phospholipids. **Hitoshi Matsuki**

777 Controlled Release of DNA from Silica-Coated Gold Nanorods by Pulsed Laser Irradiation. **Yukichi Horiguchi**

778 Use of Bacteriophage Functionalized Cellulose Micro/Nanoparticles for Decontamination of Drinking Water. **Zeinab Hosseiniidoust**

779 The Oriented, Genetically Encodable Adsorption of Proteins Onto Gold Nanoparticles and Bulk Gold Surfaces. **Alison M. Williams**

780 Antidepressants Modify Lipid Bilayer Properties. **Ruchi Kapoor**

781 A New Method to Immobilize Trypsin On Superparamagnetic Nanoparticles for Protein Digestion. **Vivian Hecht**

782 Highly Tailorable Core/Shell Heterodimers for Hot-Spot Raman-Based Single DNA Detection. **Dong-kwon Lim**

783 Supported Lipid Bilayer-Based Electrophoretic Membrane Biosensor. **Young Kwang Lee**

784 Vegetable Proteins as Foaming Agents IN the NEW Cuisine. **Jose Maria Gutierrez**

785 Fractal Auto-Assembling Structure of Chitosan Film On Glass Beads Surfaces. **Marisa M. Beppu**

786 Bio-Surface Engineering for Investigating and Regulating Cellular Responses. **Aniruddh Solanki**

787 Protein Adsorption In PLG Microsphere Delivery Systems: Impact of Protein PEGylation. **Sheetal S. Pai**

788 Plasmatic Protein Adsorption On Chitosan Membranes. Rodrigo Silveira Vieira, Universidade Federal do Ceará, **Marisa M. Beppu**

789 Modulation of the Specific and Nonspecific Interaction Between. **Yan Liu**

790 Bio-Related and Catalytic Applications Based On Colloidal Production of Carbon Nanotubes/ Inorganic Hybrid Materials. **Miguel A. Correa-Duarte**

791 Self Segregation of Water Borne Acrylic Latices. **Richard E. Trueman**

792 Effect of Plasma Concentration On the Nature of the Protein Corona around Two Common Nanomaterials. **Abigail Campbell**

793 The Growth of Complex Nanostructures: Synergism of Dipolar Force and Stacking-Defects in Anisotropic Self-Assembly. **Xueyun Gao**

794 Nanostructure Characterization at the Solid-Liquid Interface by Dual Polarization Interferometry. **Mark Gostock**

795 The Research of the Relaxational Processes in Pure and Nano-Modificated Oxides of Silicon. **Liliya Grin**

796 Palladium Nanoparticles in Graphite Oxide: Mild and Highly Selective Catalysts for Alkyne Semihydrogenation. **Zoltán Király**

797 Characterization of Surfactant Systems Containing Fe(II) and Fe(III) and the Formation of Magnetic Particles. **Tore Skodvin**

798 Molecular Gels of Mixed Surfactant Systems of Cetylpyridinium Chloride and 6-Aminocaproic Acid for Fullerene C₆₀ Encapsulation. **IIIa Ramakanth**

799 Facile Synthesis of Aluminum Hydroxides Nanorods and Formation of Urchin Shaped Hollow Particles. **Sang Man Koo**

800 Photoluminescent Silicon Nanocrystals (Quantum Dots): Synthesis And Properties. **Alexander Kamyshny**

801 Surfactant Modification of Superparamagnetic Iron Oxide Nanoparticles. **Aaron L. Routzahn**

802 Synthesis and Characterization of Porous Carbon Nano-Rod Using Ordered Mesoporous Silica Materials as Template. **Tae-Ho Kang**

803 Size Effect of Poly(amino acid) Derivatives Coated Iron Oxide Nanoparticles for MRI Contrast Agent. **Hee-Man Yang**

804 Energy Related Applications of Monodisperse Wide Band Gap Semiconductor Nanocrystals. **Thomas R. Gordon**

805 Water-Soluble Superparamagnetic Nanobeads of Magnetite with Different Sizes and Shapes. **Jong Hun Kim**

806 Modeling of Preparation Process of Dendrimer-Encapsulated Pt Nanoparticles. **Daigo Yamamoto**

807 Emulsions Stabilized by Thermoresponsive Microgels. **Mathieu Destribats**

808 Stable Nanocolloids of Paclitaxel through Sonication Assisted Nanoassembly. **Yuri Lvov**

809 High Loading of HfO₂ Nanoparticles In Organic Solvent. **Shu Li**

810 In Situ Generation of Metal and Magnetic Nanoparticles Arrays. **Natalie Wasio**

811 Gold Nanoparticles In PAH/PAA-Based Multilayers. **Giovanna Machado**

812 Silver Nanoparticles Obtained In PAH/PAA-Based Multilayers by Photoinduction. **Giovanna Machado**

813 Stability of a Cyclodextrin- Adamantyl Hydrogel Under the Influence of Additives: A PFG- NMR Diffusion Study. **Monika Schönhoff**

814 Interfacial Structure of Deamidated Wheat Protein - Dextran Conjugates and Their Effect on Emulsion Stability at Acidic pH. **Benjamin Tziak Ze Wong**

815 Accelerated Evaluation of Long Term Stability of Model Emulsions. **Dietmar Lerche**

816 Higher Order Assembly of Micelles Via Metal Coordination. **Yan Geng**

817 Behavior of PEG-8-L Surface Modified Liposomes During Incorporation and Permeation through Membranes as Analysed by Surface Tension, Mean Diameter and Distribution and Morphology. **M. H. A. Santana**

818 Particle Size Effect on Emulsion Stability of Deformable Droplets. **Jhoan Toro-Mendoza**

819 Tunable Parameters for Structural Variation of Reverse Micelles In Nonionic Surfactant/Oil Systems: A SAXS Study. **Lok Kumar Shrestha**

820 Thermodynamics of Micelle Formation of a Novel Gemini Surfactant and Its Dynamic Adsorption on Sandstone. **Zoltán Király**

821 Evaporation Rates of Aqueous Solutions of Non-Ionic Surfactants. **Gemma Gutierrez**

822 Phase Separation Kinetics of Maya Asphaltene Emulsion and Free-to-Bound Water Transformation. **Francesca Ridi**

823 Combined Effects of Formulation And Shear Conditions On O/W Emulsion Drop Size Using a Couette Cell. **Víctor M. Guédez**

824 Preparation of Mesoporous Silica Microcapsules Using Layer-by-Layer Method. **Noritaka Kato**

825 Development of Nanoemulsions with Sesame Oil and Bixa Orellana (urucum) Oil. **Orlando D. H. Santos**

826 Interactive Behavior of Organic Micro-Droplets in Capillary-Electromagnetophoretic System. **Masuro Funaki**

827 Dielectrophoretic And Electrokinetic Behavior of "Janus" Particles In AC Electric Fields. **Sumit Gangwal**

828 Fabrication And Stability of Giant Liposome Carriers. **Martin Ullrich**

829 Characterization of Electroactive Properties of Janus Particle/Polymer Composites. **Hsin-yu Chen**

830 The Liquid-Liquid Transition - Fact or Fiction? Novel Phase Behaviour In Colloid Polymer Mixtures. **Rebecca Jane Rice**

831 The Effect of Hofmeister Ions On Phospholipid Micelles. **Maria Christoforou**

832 A New Approach for a Stability of Copper Phthalocyanine Dispersion In Organic Medium. **Won-Jae Choi**

833 Controlling the Mechanical Properties of Polymer Films Prepared Using Poly(butadiene/methacrylic acid) Dispersions. **Orawan Pinprayoon**

834 Comprehensive Ionic Charge Sensing for Macromolecules and Particles. **Hanno R. Wachernig**

835 Microemulsion Templated Highly Porous Sugar-Nano-Foams. **Michael Klostermann**

836 Interactions Between Dmpc Liposomes and Lanthanide Ions. **Prieto Gerardo**

837 REGULATION of the Zeta Potential in Semi-Concentrated Dispersions of METAL Oxides in Polar Organic Solvents. **Marek Kosmulski**

838 Concentrated Colloids in a Nematic Solvent. **Tiffany A. Wood**

839 Phase Behavior and Rheological Properties of Bowl-Shaped Particle Dispersions. **Yoshimune Nonomura**

840 Rheological and Interfacial Properties of Pickering Emulsions Prepared by Fumed Silica Suspensions Pre-Adsorbed Poly(N-isopropylacrylamide). **Tomoyuki Suzuki**

841 Influence of Temperature in the Viscous-Elastic Properties of DPPC Monolayers in Sucrose Subphase. **J. F. V. de Souza**

842 Unique Insights into Microstructure and Dynamics of Colloidal & Nanostructured Complex Fluids through Piezo Based High Frequency Rheology & DWS Based Optical Micro-Rheology. **Fred Mazzeo**

843 Colloidal Rheology of Zirconia Suspensions for Preparation of Ceramics by Slip Casting Method. **Jana Andertova**

844 Surface Rheology of Proteins In Biointerface Models. **Luciano Caseli Sr.**

845 The Effect of Particle Size and Interaction Range On the Rheological Properties of Colloidal Gels. **P. H. S. Santos**

846 Laser Micro-Rheology Using MultiSpeckle DWS for the Study of the Visco-Elastic Properties of Fluids. **Yoann Lefeuve**

847 Performance and Application of Aerated O/W Emulsion USING Conventional Static Mixing Technologies for Workover Operations in Low-Pressure. **Jose Blanco Sr.**

848 Some Colloidal Studies of Overbased Engine Oil Additives. **Chern Leing Lee**

849 Efficient Proteolysis Using Carbon Nitride Supports In Microfluidic Device. **Won Hi Hong**

850 An Investigation of the Mobility and Deliverability of Nano-Scale Zero Valent Iron for Source Zone Remediation. **Chris Kocur**

851 Fabrication and Characteristics of Remodeled Titanium Dioxide Trilayer On ITO Coated Glass for Highly Efficient DSSCs. **Kyung-hye Park**

852 Short (Perfluoroalkyl)Alkyl Diblocks Studied by Axisymmetric Drop Shape Analysis-Based Surface Balance and Molecular Dynamics Simulations. **Felix Sarmiento**

853 Also Molecules Play 'musical Chairs': Competitive Physisorption of Semiconducting Molecules at the Solid-Solution Interface. **Massimo Bonini**

854 The Effect of Capillary Radius On the Oil/Water Two Phase Displacement in Micro-Scale Capillaries. **Jinfeng Dong**

855 Unique Foam Boosting Behavior of Novel Nonionic Surfactant. **Hiromoto Mizushima**

856 Molecular Arrangement and Photocurrent Generation In Monolayers of HBC Derivatives. **Chika Akabane**

857 Synthesis of Dual-Functional Amine Oxide Type Amphoteric Surfactants and Measurement of Their Physical Properties. **JongChoo Lim**

858 Self-Association of Naphthalene at the Air—Ice Interface. **Diego Ardura**

859 Dynamic Surface Pressure of Poly (n-hexyl isocyanate) Films at the Air - Water Interface. **Takako Morioka**

860 Macroscopic Modeling of Reaction Parameters In Surface-Based Hybridization. **Damion Irving**

861 Interaction of Three-Block Copolymers with Phosphatidylcholines in Monolayers and Foam Films. **Georgi As. Georgiev**

862 Effect of Organosilanes On the Pore Characteristics In PMOs: BTME and BTSPED. **Eun-Gyeong Lee**

863 Photoimmobilization of Polysaccharides Onto Gold Using Phthalimide SAM. **Ellane J. Park**

864 2D Particles Arrays Formed at Air-Binary Liquids Interfaces. **Masashi Mizukami**

865 Acyl-Chain Length Dependent and Independent Effects of Cholesterol on Bilayer Phase Behavior of Diacylphosphatidylcholines. **Hitoshi Matsuki**

866 Water Macroclusters Formed On Silica Surface In Cyclohexane. **Kazue Kurihara**

867 Evaluating Wilhelmy Plate Method to Measure Surfactant Placement in a Water Repellent Sand Profile. **Thomas J. Boerth**

868 Measurement of Gold Adatoms After Reactive Etching of Alkanethiol Self-Assembled Monolayers. **Natalie A. Kautz**

869 Short Time Dynamic Interfacial Tension as Measured with Growing Drop Capillary Pressure Technique. **Jürgen Krägel**

870 Diverse Structures of Poly(amino acid)-Derivative with Sphingolipid In Aqueous Media. **Bokyung Jung**

871 STM Study of Self-Assembled Monolayers of Hydrogen Bonded Phenylene-Thiophene-Thiophene-Phenylene (PTTP) Derivatives at the Solid-Liquid Interface. **Massimo Bonini**

872 Adsorption Dynamics and Foam Film Kinetics of Aqueous Solutions of Hexadecyltrimethylammonium Chloride. **Elena Mileva**

873 Pre-Programmed Bicomponent Porous Networks at the Solid-Liquid Interface: The Low Concentration Regime. **Massimo Bonini**

874 Poly(acrylic acid)-Sodium Carbonate Interactions In Concentrated Salt Solutions. **Xiaohua Fang**

875 Langmuir Films of Mixtures of An Azopolymer and Poly(dodecylmethacrylate). **Lucineia Ceridorio**

876 Acetylacetone-Based Formaldehyde Detection for Silver-Loaded Porous Membranes. **Bin Ren**

877 Electrostatic Patterning on Silica Surfaces: Role of Water Vapor Adsorption. **Rubia F. Gouveia**

878 Patterning of a Bifunctional SAM as a Template for a Microfluidic Screening Array. **Thomas F. Leary**

879 Correlation Between the Solution Behavior of Cellulose Esters and Their Adsorption Isotherms Onto Different Surfaces. **Jorge Amim Júnior**

880 Ph- and Salt-Induced Swelling of Multilayers Build up From Weak Polyelectrolytes: A QCM-D and ATR-FTIR STUDY. **Monika Schönhoff**

881 Universal Platform For Preparation Of Functional Block Co-Polymers. **Patrick A. McCarthy**

882 Humidity Dependence In Conductivity Spectra of Polyelectrolyte Multilayers: Implications for Charge Carrier Mobility and Density. **Monika Schönhoff**

883 Correlating Obstructed Diffusion with Obstacle Morphology Using Single Molecule Tracking In Supported Lipid Bilayers. **Michael J. Skaug**

884 QCM Studies of the pH-Dependent Behaviour of Polyelectrolyte Multilayers for Application IN Surface Molecular Imprinting. **Monika Schönhoff**

885 Electric Field Control of Flow In Nanoscale Thin Wetting Films. **Jairus Kleinert**

886 NMR Study of the Water Diffusivity and Mobility In a Microporous Polyelectrolyte Multilayer Film. **Monika Schönhoff**

887 Changes In Dimensional Structures of a Co-MOF System. **Hirofumi Kanoh**

888 Facile Fabrication of Pomponlike Microarchitectures of Lanthanum. **Yuanhua Ding**

889 Synthesis and Characterization of Ti Decorated Polyaniline. **Jooyoung Won**

890 Sensitive Detection of Chiral Crystals by Second Harmonic Generation Microscopy. **Garth J. Simpson**

891 Amorphous Carbon Substrates: New Chemistries And Applications. **Matthew R. Lockett**

892 Kinetically Controlled Adsorption to Freshly Formed Microscale Interfaces. **Shelley L. Anna**

893 Synthesis of Novel Sugar-Based Hetero-Gemini Surfactants. **Wataru Matsuda**

894 Surface Properties of Lipid Raft Langmuir Monolayer and Its Interaction with A_n (1-40). **Garima Thakur**

895 Removing of Natural Organic Matters IN Presence of Hydrogen Peroxide by Oxidized Activated CARBON. **Ivan Kozyatnyk**

896 Effect of Temperature and Pressure On the Structure and Phase Behavior of Water Confined by Hydrophobic, Hydrophilic, and Heterogeneous Surfaces. **Nicolas Giovambattista**

897 The Effect of Long-Range Interactions On Inter-Phase Line Tension In Liquid Crystalline Langmuir Films. **Elizabeth K. Mann**

898 Orientational Ordering of and Spontaneous Formation of the Chirality In the Langmuir Monolayer at the Air/Water Interface. **Yi Rao**

899 Using Moran I And Geary C Spatial Autocorrelation Statistics to Differentiate Between Evaporative Residue Distributions. **Scott Pierce**

900 Interfacial Phenomena and "Structure" of Thin Wetting Films through A PRISM of Topologic Concept. **Vladimir Y. Smorodin**

Thursday, June 18, 2009

Thursday, June 18, 2009, 8:00 AM - 9:05 AM

Plenary Lecture 4

Auditorium, Lerner Hall

Presider: Eric M. Furst

8:00 901 Mining for Cancer Biomarkers: Colloids in Early Disease Detection, Personalized Medicine and Diagnostics. **Matt Trau**

Thursday, June 18, 2009, 9:05 AM - 9:30 AM

Coffee Break

Auditorium North Lobby, Lerner Hall

Thursday, June 18, 2009, 8:00 AM – 4:00 PM

Coffee Break

Carleton Lounge, Mudd Bldg.

Thursday, June 18, 2009, 9:30 AM - 12:20 PM

Biointerfaces V: Lipids/Proteins at the Air-Water Interface

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presider: Chad Leidy

9:30 902 Analogies Between Competitive Adsorption and Colloid Stability. **Joseph A. Zasadzinski (Keynote)**

10:00 903 Complex Formation And Phase Transformations In Saturated Phosphatidylcholine/DSPE-PEG2000 Langmuir Monolayers And Microbubble Shells. **Marjorie L. Longo**

10:20 904 Simulation Studies On the Properties of Lipid Monolayers at the Stability Limit. **Svetlana Baoukina**

10:40 Break.

11:00 905 AFM Examination Of Pulmonary Surfactant At Low Surface Tensions. **Yi Y. Zuo**

11:20 906 Evaluation of Lung Surfactant Inhibition, Resistance And Reversal Using New ADSA-CSD Methodology. **Sameh M. I. Saad**

11:40 907 Thermodynamic Analysis of Rationally Designed Peptides at the Air/Water Interface. **Lorraine F. Leon Gibbons**

12:00 908 Using Langmuir Monolayers to Mimic Interactions of Chitosan in Biointerfaces: Action on Lipids and Whey Proteins. **Luciano Caseli**

Thursday, June 18, 2009, 9:30 AM - 11:50 AM
Capillary and Wetting Phenomena II
Rm. 337, Mudd Bldg.

Organizer: S. S. Dukhin
Presiders: Mohamed E. Labib and Boryan Radoev

9:30 909 The Autophilic Effect: Wetting of Hydrophobic Surfaces by Surfactant Solutions. Andrew J. B. Milne and **A. Amirfazli**

9:50 910 Wetting Dynamics On Micropatterned Surfaces. **Melissa A. Yaklin**

10:10 911 Wetting by Non-Newtonian Fluids. **S. Garoff**

10:30 912 Effect of the Surface-Stimulated Mode On the Kinetics of Homogeneous Crystal Nucleation In Droplets. **Yuri Djikaev**

10:50 913 Condensation of Single Drops on Rigid and Elastic Hydrophobic Surfaces. **Mordechai Sokuler**

11:10 914 Evaporation of Water/Ethanol Drops in a Controlled Environment. **Chuanjun Liu**

11:30 915 Retarded Evaporation of Water Microdrops from Hydrophilic Surfaces. **Elmar Bonaccorso**

Thursday, June 18, 2009, 9:30 AM - 12:20 PM
Colloid and Surface Interactions in Water I
Sineband East 415, Schapiro Bldg.

Organizers: Ludmila Boinovich and John Y. Walz
Presider: Ludmila Boinovich

9:30 916 Force Measurements Between Colloidal Particles In Water. **Darrell Velezol (Keynote)**

10:00 917 AFM Studies On the Colloidal Force Arising From Nanoparticle Halos. **Clayton T. McKee**

10:20 918 A New Look at Nanoparticle Haloing Using Direct Force Measurements and Modeling. **Gerold Willing**

10:40 919 Flattened Polymer Colloids And Resulting Assemblies. **Laura Mely Ramirez**
11:00 920 Understanding the Impact of Chemical Patterns on the Interactions and Self-Assembly of Organic Nanostructures. **Claribel Acevedo-Velez**
11:20 921 Force and Friction Between Fibres and Human Hairs Studied by AFM. **Mark Rutland**
11:40 922 Stability of Aqueous Binary Suspensions of Fumed Oxides. **Frank Babick**
12:00 923 Withdrawn.

Thursday, June 18, 2009, 9:30 AM - 11:50 AM

Colloids in Non-Aqueous Media II

Rm. 227, Mudd Bldg.

Organizers: Ian Morrison and Filip Strubbe

9:30 924 Impact of ATRP Initiator Carbon Spacer Length On Grafting Poly(Styrene) From Silica Nanoparticles. **Danial Sunday**
9:50 925 Transparent TiO₂/Epoxy Composites Prepared by Using a Surfactant with Hydrophilic and Hydrophobic Chains. **Motoyuki Iijima**
10:10 926 A Test of Pairwise Additivity In Colloidal Electrostatics at Low Ionic Strength. **Jason W. Merrill**
10:30 927 Electrical Charging In Nonpolar Liquids Due to Nonionic Surfactants. **Qiong Guo**
10:50 928 Foam Stability of Non-Aqueous Liquids. **Stig E. Friberg**
11:10 929 Adding Water to a Hydrocarbon/Surfactant Solution Will Reduce the Surface Tension? **Stig E. Friberg**
11:30 930 New Fluorinated Surfactants for Nanogel Preparation. **David Alaimo**

Thursday, June 18, 2009, 9:30 AM - 12:10 PM

Complex Systems and Polymer Interfaces

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: Frank Blum and Maria M. Santore

Presiders: Millicent A. Firestone and Frank Blum

9:30 931 Imaging Amphiphilic Block Copolymer Interactions with Model Lipid Bilayers. **Byeongdu Lee and Millicent A. Firestone**
9:50 932 Bilayer Lamellar Phases Doped with Polymeric Additives: Detailed SANS And SAXS Studies. **Verena Posselt**
10:10 933 Giant Phospholipid/Block Copolymer Hybrid Vesicles: Mixing Behavior And Domain Formation. **Jin Nam**
10:30 934 Disjoining Pressure of Bonded Perfluoropolyether (PFPE) Thin Films Revealed by AFM. **James W. Schneider**
10:50 935 Effect of pH Value on the Facilitation Efficiency of Oligonucleotide on Vesicle Formation from Single-Chained Cationic Surfactant. **X. Guo**
11:10 936 Impact of Solvent Quality On Nanoparticle Dispersion In Semidilute and Concentrated Polymer Solutions. **Nupur Dutta**
11:30 937 Effect of Organic Polymers on the Cement Hydration Reaction: Thermodynamic and

Structural Aspects. **Francesca Ridi**

11:50 938 Mechanisms Governing Interfacial Behavior of Organic/Inorganic Silicone Polymers. **Parag S. Purohit**

Thursday, June 18, 2009, 9:30 AM - 12:00 PM

Dynamics I

Rm. 233, Mudd Bldg.

Organizer: Nicholas Turro

Presider: Jeffrey T. Koberstein

9:30 939 Dynamics of Pathological Crystallization. **Michael D. Ward (Keynote)**

10:10 940 Dynamics at Interfaces Probed by Sum-Frequency Generation Spectroscopy. **Dana D. Dlott**

10:50 Break.

11:00 941 Patterning Thin Polymer Films Driven Via Electric Fields:Instability, Pattern Selection, and Coarsening. **William B. Russel**

11:40 942 Photo-Induced Electron Transfer at Liquid Interfaces with Time-Resolved Sum Frequency Generation. **Yi Rao**

Thursday, June 18, 2009, 9:30 AM - 12:20 PM

Emulsions IV

Rm. 825, Mudd Bldg.

Organizers: Stig Friberg

Presider: Laurence S. Romsted

9:30 943 Oscillation Instability in Phase Separation of Binary Mixtures. **Doris Vollmer (Keynote)**

10:00 944 Dynamic Emulsification Processes. **Christophe Baravian**

10:20 945 Drop Breakage During Emulsification - Experiments and Data Interpretation. **Nikolai D. Denkov**

10:40 Break.

11:00 946 Non-Coalescence of Oppositely Charged Drops. **William D. Ristenpart**

11:20 947 W/O Emulsions with Peptide/Silicone Hybrid Polymers as Active Interfacial Modifier (AIM). **Kenichi Sakai**

11:40 948 Characterisation and Stabilisation of Nanoemulsions Produced by the PIC Method. **Michael Gradzielski**

12:00 949 Nano-Emulsion Formation In Ionic Surfactant Systems by the Phase Inversion Composition (PIC) Method. **Isabel Solè**

Thursday, June 18, 2009, 9:30 AM - 12:10 PM

Energy From Fossil Fuels & Alternative Sources II

Rm. 924, Mudd Bldg.

Organizers: Jae W. Lee and Zhenghe Xu

Presiders: Prof. Raymond S. Tu and Ilona Kretzschmar

9:30 950 Alkali-Surfactant Processes for Enhanced Oil Recovery. **Clarence A. Miller (Keynote)**

10:10 951 Permanent Alteration of Porous Media Wettability from Liquid Wetting to Intermediate Wetting by Fluoropolymer Treatment. **Stanley Wu**

10:30 952 Adsorption of Sodium Dodecyl Sulfate at Cyclopentane Hydrate/Liquid Interface. **Junshe Zhang**

10:50 953 Adsorption of Petroleum Macromolecules (Asphaltenes and Resins) Onto Reservoir Rock Sands. **Roman M. Balabin**

11:10 954 Swapping Phenomena In Deep-Sea Gas Hydrates. **Youngjune Park**

11:30 955 Rheology of CP Hydrate-Forming Emulsions. **Prasad U. Karanjkar**

11:50 956 Effect of Surface Active Agents On Electronkinetic and Wettability Changes of Reservoir Rocks. **S.E. El-Mofty**

Thursday, June 18, 2009, 9:30 AM - 12:20 PM
Engineering at the Nano-Scale and Nano-Technology II
Rm. 1024, Mudd Bldg.

Organizers: Yunfeng Lu and B. M. Moudgil

9:30 957 Meniscus-Directed Assembly of Structured Films, Lines and Self-Contained Clusters From Microparticles, Nanoparticles and Biomolecules. **Orlin D. Velev (Keynote)**

10:00 958 Mechanisms of Nano- and Micro-Particle Self-Assembly in Two-Dimensional Structures in a Wedge Film. **Darsh Wasan**

10:20 959 A Method of Improving the Electrical Conductivity of Pt/TiO₂ Nanocomposite. **Qi Long**

10:40 960 A Concerted Self-Assembly Pathway of Dendrimers Produces Versatile Nanocapsules. **Yan Geng**

11:00 Break.

11:10 961 Molecularly Sculpted Nanostructures and Interfaces: Directed Synthesis and Novel Properties. **G. Ramanath**

11:40 962 Electrochemical Water Splitting Using Mixed Metal Oxide Nanoparticulate Composite Electrodes. **Michael R. Hoffmann**

12:00 963 Magnetic Janus Particles: Investigation of Their Magnetic Properties and Controllable Autonomous Motion. **Shengrong Ye**

Thursday, June 18, 2009, 9:30 AM - 12:25 PM
Environmental Colloid and Interfacial Processes V
Davis Auditorium, Schapiro Bldg.

Organizer: V. Faye McNeill
Presiders: Qilin Li and Helen Nguyen

9:30 Welcoming Remarks.

9:35 964 Coupled Modeling And Experimental Investigations of Nanocarbon Transport In Subsurface Media. **Linda M. Abriola (Keynote)**

10:15 965 Influence of Solution Chemistry On the Deposition Kinetics of Oxidized Multi-Walled Carbon Nanotubes On Silica Surfaces. **Kai Loon Chen**

10:35 966 The Role of Solution Chemistry on the Deposition and Detachment of Quantum Dots in Model Groundwater Environments. **Ivan R. Quevedo**

10:55 Break.

11:05 967 Transport of Carbon and Metal-Oxide Nanoparticles in Soils. **Lunliang Zhang**

11:25 968 Single-Walled Carbon Nanotubes Exhibit Limited Transport In Soil Columns. **Deb P. Jaisi**

11:45 969 The Stability and Mobility of Surface-Modified Iron Nanoparticles In Soil Column Tests. **Bahngmi Jung**

12:05 970 Two-Dimensional Transport of Polyelectrolyte-Modified Fe0 Nanoparticles In Heterogeneous Saturated Sand: Effects of Particle Concentration, Excess Polymer, Fe0 Content, And Adsorbed Polymer Layer Properties. **Tanapon Phenrat**

Thursday, June 18, 2009, 9:30 AM - 12:10 PM

Fabrication of Colloidal Assemblies and Devices V: Functional Assemblies

Rm. 633, Mudd Bldg.

Organizers: Darrell Velez and Orlin D. Velez

Presider: Vinothan Manoharan

9:30 971 Using Solid-Stabilised Emulsion Templates for the Preparation of Functional Microcapsules. **Olivier J. Cayre**

9:50 972 DNA-Coated Colloidal Particles for Self-Replication. **Remi Dreyfus**

10:10 973 Obtaining Conductive Patterns by Two-Dimensional Aggregation and Coalescence. **Shlomo Magdassi**

10:30 974 Simple Fabrication of Phototaxing Motors. **Neetu Chaturvedi**

10:50 975 Self-Oscillating Particles with Ionic-Exchange Particle And Responsive Polymer. **Zhengdong Cheng**

11:10 976 Structural Color of Biological and Biomimetic Amorphous Nanostructures. **Jason D. Forster**

11:30 977 Real-Time Impedimetric Characterization of Molecular Self-Assembly Onto and Between Gold Nanoparticles Dispersed On Dithiol Modified Gold Surfaces. **Julia Hedlund**

11:50 978 Stimuli Responsive Nanoparticles: Hierarchical Assembly and Ultrahydrophobic Surfaces From Water Born Dispersions. **Mikhail Motornov**

Thursday, June 18, 2009, 9:30 AM - 12:10 PM

Interfacial Rheology II

Rm. 700, Fairchild Bldg.

Organizers: Gerald G. Fuller and Libero Liggieri Interfasi

Presider: Reinhard Miller

9:30 979 On the Possible Role of the Surface Elasticity in Emulsion and Foam Stability. **Dominique Langevin (Keynote)**

10:00 980 Impact of Aphiphilic Nanostructures On Rheology of Interfacial Layers and Foam-Film Drainage. **Elena Mileva**

10:20 981 Evaluation of Latex Film Formation In the Presence of Inorganic Particles by Interfacial Rheology. **Herley Casanova**

10:40 982 Mobility of Surfactants and Proteins at the Oil-Water Interface. **Robert Walder**
11:10 983 Microparticles at Fluid Interfaces: Structure, Dynamics and Their Use as Probes for Monolayer Microrheology. **Francisco Ortega**
11:30 984 On the Diffusion of Circular Domains on a Spherical Vesicle. **Thomas M. Fischer**
11:50 985 A Novel Technique for Interfacial Microrheology. **Siyoung Q. Choi**

Thursday, June 18, 2009, 9:30 AM - 12:10 PM

Surfactants and Supramolecular Assemblies: Langmuir and Gibbs Monolayers
Rm. 1127, Mudd Bldg.

Organizer: Alexander Couzis
Presiders: Charles Maldarelli and Shahab Shojaei-Zadeh

9:30 986 Kinetic Processes In Interfacial Adsorption Layers. **Libero Liggieri (Keynote)**
10:10 987 Surfactant Transport From a Micellar Solution to An Air-Water Interface. **Nikhil S. Bhole**
10:30 988 Reversible Light-Induced Critical Separation. **Julian Eastoe**
10:50 989 Nanolithography at the Air/Water Interface. Roman Volinsky and **Raz Jelinek**
11:10 990 Characterization of Hydrogenated/Fluorinated Surfactant Films by Experimental Methods and Molecular Dynamics Simulations. **Juan M. Russo**
11:30 991 Phase-Separation In Mixed Hydrogenated-Perfluorinated Fatty Acid Langmuir Blodgett Thin Films. **Matthew F. Paige**
11:50 992 Selective Surface Modification with Two-Dimensional Micro-Templates Formed In Mixed Langmuir Monolayers. **Ken-ichi Iimura**

Thursday, June 18, 2009, 9:30 AM - 12:00 PM

Theory and Computer Simulations in Interfacial and Colloidal Systems I
Rm. 834, Mudd Bldg.

Presiders: Ramanathan Nagarajan and Shyam Vyas

9:30 993 Self-Assembly And Mechanical Properties of Block-Copolymer Gels. **Jan Andzelm (Keynote)**
10:00 994 Density Functional Theories of Surface Interactions In Salt Solutions. **Jan Forsman**
10:20 995 Large-Scale Lattice-Boltzmann Simulations of Amphiphilic Liquid Crystal Self-Assembly and Rheology. **Radhika S. Saksena**
10:40 996 Density Functional Calculations of Surface Interactions In Polydisperse Polymer Solutions. **Jan Forsman**
11:00 997 The Long and Winding Road. Multiscale Molecular Modeling Approach to the Self-Assembly of Di/Triblock Copolymers for Drug Delivery in Aqueous Solution. **Sabrina Prich**
11:20 998 Prediction of Drug Miscibility In Mixed Solvents: Developing Workflows for Miscibility Prediction with Molecular Dynamics Simulations. **Nicholas M. Reynolds**
11:40 999 Phase Behavior of Colloidal Spheres + Polymers in Good and Theta Solvents. **Remco Tuinier**

Thursday, June 18, 2009, 9:30 AM - 12:00 PM

Tribology and Adhesion I
Rm. 900, Fairchild Bldg.

Organizer: Girma Biresaw
Presider: Anil N. Netravali

9:30 1000 Adhesion Science: Recent Developments and Prospects. **Kash Mittal (Keynote)**
10:00 1001 Adhesion Measurement on Micro-Patterned Surfaces. **Yasuhide Ando**
10:20 1002 Adsorption Isotherms of Water and Alcohol Vapor on Silicon Oxide Surfaces and Their Effects on Nano-Asperity Adhesion. **Seong Han Kim**
10:40 1003 Photo-Initiated Surface Modification of Textile Fibers for Increased Adhesion. **Thomas Bahners**
11:00 1004 On the Adhesive Interaction Between Polyelectrolyte Multilayers of Polyallylamine Hydrochloride and Polyacrylic Acid. **Erik Johansson**
11:20 1005 Ultra Low Friction Under Repulsive Van Der Waals Forces. **Adam Feiler**
11:40 1006 Surface Forces, Adlayers, Responsive Films and Friction. **Mark Rutland**

Thursday, June 18, 2009, 2:00 PM - 4:30 PM

Biointerfaces VI: General Biointerfaces
Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee
Presider: Svetlana Baoukina

2:00 1007 Texture of Membrane Domains. **Adam Cohen Simonsen (Keynote)**
2:30 1008 Characterization of Peptide-Decorated Interfaces Using near Edge X-Ray Absorption Fine Structure Spectroscopy: Effects of Phosphorylation On Peptide Conformation. **Yiqun Bai**
2:50 1009 Experimental Study of Artificial Cells Adhesion Under Flow. **Jitka Cejkova**
3:10 1010 Carbon-On-Metal Substrates for the Fabrication And Analysis of Biomolecule Arrays. **Matthew R. Lockett**
3:30 Break.
3:50 1011 Nanoscale Investigation of Force Interactions Between AFM Tips and Hydrophobic Bacteria Using DLVO Theory. **Loredana S. Dorobantu**
4:10 1012 Compared Effects of Monovalent Salt, Mono- And Oligonucleotide On Structure And Stability of Cationic Vesicles. **Julio H. K. Rozenfeld**

Thursday, June 18, 2009, 2:00 PM - 4:45 PM

Capillary and Wetting Phenomena III
Rm. 337, Mudd Bldg.

Organizers: S. S. Dukhin and Mohamed E. Labib
Presiders: Charles Maldarelli and Emil J. Chibowski

2:00 1013 Molecular Dynamics Simulations Of The Wetting Of Water Nanodroplets On Surfaces Of Prescribed Polarity: Contact Angle And Line Tension Calculations On Surfaces Chemically Uniform And Heterogeneous, And Droplet Motion In Wettability Gradients. **Charles Maldarelli**

2:20 1014 Surface Free Energy of Polypropylene and Polycarbonate Solidifying at Different Solid Surfaces. **Emil J. Chibowski**

2:40 1015 Single and Mixed Surfactants Solutions at Superhydrophobic Surfaces. **Michele Ferrari**

3:00 1016 Superhydrophobic Surfaces: Applicability of the Wenzel And Cassie-Baxter Equations. **H. Yildirim Erbil**

3:20 1017 Surface-Initiated Growth of Superhydrophobic Polymer Films. **G. Kane Jennings**

3:40 1018 Heterogeneous Surface Coatings: Water Contact Angle and Wetting Hysteresis Relation with the Foul-Release Properties of Marine Organisms. **H. Yildirim Erbil**

4:10 1019 Manipulation of the Association of Two Components In Drying Liquid Drops – Tools for Enhanced Biodelivery Formulations. **M.A. Faers**

4:30 1020 Airflow Induced Shedding of Drops On Surfaces of Various Hydrophobicities. **Andrew J. B. Milne**

Thursday, June 18, 2009, 2:00 PM - 4:50 PM

Colloid and Surface Interactions in Water II

Sineband East 415, Schapiro Bldg.

Organizers: Ludmila Boinovich and John Y. Walz

2:00 1021 Computer Simulations of Interfacial Water: From Hydration Repulsion to Hydrophobic Attraction. **Fernando Bresme (Keynote)**

2:30 1022 Interaction of Cationic Hydrophobic Surfactants at Negatively Charged Surfaces Investigated by Atomic Force Microscopy. **Cathy E. McNamee**

2:50 1023 Colloidal Sticky Spheres - Inter-Particle Potential Spanning the Fluid/Gel Phase Transition. **Aaron P. R. Eberle**

3:10 1024 Hydroxide Ions at Hydrophobic Interfaces Explained by a New Fluctuation Force. **James K. Beattie**

3:30 1025 Deposition of Modified Nanometer Silica Particles on Hydrophilic Silica Surface. **Caroline Hall**

3:50 1026 The Role of Cation Dehydration On Cation Binding to Polyelectrolytes. **Hugh D. Burrows**

4:10 1027 Sol-Gel And Isotropic/Nematic Transitions In Aqueous Suspensions of Swelling Clay Minerals: a Structural And Rheological Study On Size-Selected Particles. **Laurent J. Michot**

4:30 1028 Interaction Forces Between a Particle And a Planar Surface In Water. **Eunhyea Chung**

Thursday, June 18, 2009, 2:00 PM - 4:00 PM

Colloids in Non-Aqueous Media III

Rm. 227, Mudd Bldg.

Organizers: Ian Morrison and Filip Strubbe

2:00 1029 Probing the Physics of Nonpolar Colloids Using Microresonators. **Sunil K. Sainis**

2:20 1030 Viscosities of Heavy Oils-In-Toluene And Partially Deasphalting Heavy Oils-In-Heptol In a Study of Asphaltenes Self-Interactions. **Chandra W. Angle, Sr.**

2:40 1031 Studies of Stability of Water In Diluted Athabasca Bitumen Emulsions Using Electric Polarization of a Single Emulsion Film. **Plamen Tchoukov**

3:00 1032 Effect of Dispersants On Asphaltene Suspensions In Crude Oil. **Sara Hashmi**

3:20 1033 Transient Electrokinetics of Colloidal Particles In Nonpolar Liquids Containing Charged Inverse Micelles. **Filip Strubbe**

3:40 1034 Impact of Initiator Carbon Spacer Length On Grafting Poly(Styrene) From Silica Nanoparticles. **David Green**

Thursday, June 18, 2009, 2:00 PM - 4:50 PM

Dynamics 11

Rm. 233, Mudd Bldg.

Organizer: Jeffrey T. Koberstein

Presider: Nicholas J. Turro

2:00 1035 Dynamic Aspects of Particle-Surface Interactions: From Capture Kinetics to Motion Signatures. **Maria Santore (Keynote)**

2:40 1036 Interfacial Issues And Dynamics In Nanoparticle Self-Assembly. **Robert K. Prud'homme**

3:20 Break.

3:30 1037 Creation And Reorganization of Functional Polymer Surfaces. **Jeffrey T. Koberstein**

4:10 1038 Functionalization of ZnO Nanorods And Nanoparticles with Dyes And Biomolecules. **Elena Galoppini**

Thursday, June 18, 2009, 2:00 PM - 3:20 PM

Emulsions V

Rm. 825, Mudd Bldg.

Organizers: Stig Friberg

Presider: Nikolai D. Denkov

2:00 1039 Effect of Hydrophilic and Amphiphilic Additives on the Stability of Internally Self-Assembled Emulsions. **Sandra Engelskirchen**

2:20 1040 Amphiphile-Free Templatd Synthesis: Water-in-Water Emulsions and Heterogenous Biocatalysts. **Yan-Yeung Luk**

2:40 1041 Effect of Droplet Size Distribution On Ostwald Ripening In Emulsions with and without Micelles. **Stephanie R. Dungan**

3:00 1042 Structure and Dynamics of Dense and Turbid Emulsions. **Otto Glatter**

Thursday, June 18, 2009, 2:00 PM - 4:40 PM

Energy From Fossil Fuels & Alternative Sources III

Rm. 924, Mudd Bldg.

Organizers: Jae W. Lee and Zhenghe Xu

Presider: Alissa Park

2:00 1043 Hydrophobic Interactions in the Processing of Energy Minerals. **Roe-Hoan Yoon (Keynote)**

2:40 1044 Effect of Surfactants On CO₂ Enclathration. **Junshe Zhang**

3:00 1045 Impact of Asphaltenes And Naphthenates On the Phase Behavior of Solvent-Bitumen-Water Systems. **Sumit K. Kiran**

3:20 1046 Effect of Network Geometry On Electron Transport within TiO₂ Photoanode. **Sonia S. Mathew**

3:40 1047 Electrochemical Impedance Spectroscopy Investigation of Transport Limitations In Enzyme Fuel Cells. **Douglas Aaron**

4:00 1048 Sustainable Energy Conversion Systems Based On Chemical Looping and Carbon Mineral Sequestration Technologies. **Alissa Park**

4:20 1049 Water - Fuel Microemulsions. **Sandra Engelskirchen**

Thursday, June 18, 2009, 2:00 PM - 4:30 PM
Engineering at the Nano-Scale and Nano-Technology III
Rm. 1024, Mudd Bldg.

Organizers: Yunfeng Lu and B. M. Moudgil

2:00 1050 Multiphase Self-Assembly Approaches for Advanced Energy Storage. **Jun Liu (Keynote)**

2:30 1051 Patterned Polymer-Templated Nanostructures for Surface-Enhanced Raman Scattering. **Kyle C. Bantz**

2:50 1052 Facile Preparation of Highly-Scattering Metal-Nanoparticle Coated Polystyrene Latex Beads. **Jung-Hyun Lee**

3:10 Break.

3:20 1053 Hierarchically Structured ZnO/TiO₂ Films for Dye-Sensitized Solar Cells. **Guozhong Cao**

3:50 1054 Preparation of ITO Nanoparticles Precisely Controlled in Size and Shape. **Atsushi Muramatsu**

4:10 1055 Liquid Crystal-Capped Gold Nanoparticles by Ligand-Exchange Reactions. **Jonathan Milette**

Thursday, June 18, 2009, 2:00 PM - 4:30 PM
Environmental Colloid and Interfacial Processes VI
Davis Auditorium, Schapiro Bldg.

Organizer: V. Faye McNeill
Presiders: Qilin Li and Helen Nguyen

2:00 1056 Aggregation And Bacterial Cytotoxicity of Carbon-Based Nanomaterials In Aquatic Environments. **Menachem Elimelech (Keynote)**

2:40 1057 Bacterial Toxicity Of Silver Nanoparticles In Simulated Water Chemistries. **Xue Jin**

3:00 Break.

3:10 1058 Influence of Surface Oxides On the Aqueous Colloidal Stability of Multi-Walled Carbon Nanotubes: A Structure-Property Relationship for Engineered Nanomaterials. **Billy Smith Jr.**

3:30 1059 Chemistry of NOM-C60 Interactions And Its Impact On C60 Environmental Fate. **Yu Sik Hwang**

3:50 1060 Analysis of Single-Walled Carbon Nanotube Transformations Following Limited And Extended Exposure to Aqueous Environments. **Kenya Crosson**

4:10 1061 Microbial Cytotoxicity of Carbon-Based Nanomaterials: From the Laboratory to Natural And Engineered Aquatic Systems. **Seoktae Kang**

Thursday, June 18, 2009, 2:00 PM - 4:50 PM

Fabrication of Colloidal Assemblies and Devices VI: Patterned and Janus Particles
Rm. 633, Mudd Bldg.

Organizers: Darrell Velez and Orlin D. Velev

Presider: Simeon Stoyanov

2:00 1062 Assembly of Divalent Particles and Their Properties. **Francesco Stellacci (Keynote)**

2:30 1063 Fabrication of Novel Magnetic Janus Microparticles. **Vesselin N. Paunov**

2:50 1064 Pickering Miniemulsions As a Template To Synthesize Janus Colloidosomes. **Neeraj P. Pardhy**

3:10 1065 Colloidal Surfactant:Janus Particle Having Both Hydrophobic And Hydrophilic Surface. **Kisun Yoon**

3:30 1066 Harnessing 2D Assembly of Spherical Particles to Create Anisotropic Particle Arrays. **Pushkar Lele**

3:50 1067 Nanoparticle Superstructure Arrangements by the Cooperative Self-Assembly of Nanoparticles with Amphiphilic Molecules. **Takuya Harada**

4:10 1068 Engineering Patchy Particles through a Site Protection Route. **Emily J. Gardel**

4:30 1069 Synthesis and Assembly of Colloidal Particles with the Morphology of Water Molecules. **Jin-Gyu Park**

Thursday, June 18, 2009, 2:00 PM - 4:35 PM

Future Directions in Colloid and Surface Science I

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: K. P. Ananthapadmanabhan and Nikolai D. Denkov

Presider: Martin Vethamuthu

2:00 1070 Challenging Problems in the Future World of Two Dimensions with Multi Dimensional Applications. **Ponisseril Somasundaran (Keynote)**

2:30 1071 Selection of Surfactants for Improved Foam Properties. **Nikolai D. Denkov**

2:55 1072 Transport And Structure In Responding Lipid Membranes. **Emma Sparr**

3:20 1073 Structure Property Relationships of Novel N-Lauroyl Amino Acid Esters as Lipophilic Surfactants. **Bruce Gesslin**

3:45 1074 Surface Properties of Cationic Silicone Copolymers. **Anne D. Dussaud**

4:10 1075 Innovative Processes for the Sustainable Production of Surfactants. **Oliver Thum**

Thursday, June 18, 2009, 2:00 PM - 4:40 PM

Interfacial Rheology III

Rm. 700, Fairchild Bldg.

Organizers: Gerald G. Fuller and Reinhard Miller

Presider: Dominique Langevin

2:00 1076 Combining Interfacial Rheology And Atomic Force Microscopy: a New Perspective On Human Digestion of Emulsions. **Julia Maldonado-Valderrama (Keynote)**

2:30 1077 Interfacial Rheology of Protein-Surfactant Interactions In Immunoassay Reagents. **Shyam V. Vaidya**

2:50 1078 Linear Viscoelastic Model for Interfaces and Membranes. **Alejandro Rey**

3:10 1079 Experimental Measurement of Interfacial Rheology. **Anne M. Grillet**

3:40 1080 Interfacial Rheology at the Water/Supercritical Carbon Dioxide Interface. **Frank Boury**

4:00 1081 Interfacial Rheology And Mass Transfer Kinetics In Complex Flow. **Jeffrey D. Martin**

4:20 1082 Marangoni Flow Revisited. **Rafael Tadmor**

Thursday, June 18, 2009, 2:00 PM - 4:40 PM

Surfactants and Supramolecular Assemblies: Micelles and Microemulsions

Rm. 1127, Mudd Bldg.

Organizer: Charles Maldarelli

Presiders: Alexander Couzis and Isabel Sole

2:00 1083 A Monte Carlo Study of Self-Assembling of Bolaform Amphiphiles Into Associates with Helical Superstructure. **H.-J. Mögel**

2:20 1084 Structure of Ethoxylated Nonyl Phenol Micelles. Simulation of the Ethoxy Corona. **Szabolcs Vass**

2:40 1085 Evidence of Premicellization Phenomena for Short Length Ionic Surfactants. **Gaëlle M. Roger**

3:00 1086 Thermal Behaviour of Hierarchical Self Assembly Processes. **Ger JM Koper**

3:20 1087 Control Over Microemulsions with Solvent Blends. **Olesya Myakonkaya**

3:40 1088 Structure And Dynamics of Balanced Supercritical CO₂-Microemulsions. **Thomas Sottmann**

4:00 1089 Reverse Microemulsion Characterization for a Better Understanding of Nanoparticle Synthesis. **Jean-Luc Lemyre**

4:20 1090 Simultaneous Effect of Microemulsions and Phase-Transfer Agents On Organic Reactivity. **Moises Perez-Lorenzo**

Thursday, June 18, 2009, 2:00 PM - 4:40 PM

Theory and Computer Simulations in Interfacial and Colloidal Systems II

Rm. 834, Mudd Bldg.

Presiders: Ramanathan Nagarajan and Shyam Vyas

2:00 1091 MOMA: Multiscale Molecular Modeling of Nanocomposite Materials. the Self-Assembly of Nanoparticles in Diblock Polymeric Matrices. **Sabrina Pricl (Keynote)**

2:30 1092 Multiscale Modeling of Supported Bilayers. **Roland Faller**

2:50 1093 Van Der Waals Interactions Between Nanoparticles. **Kirill A. Emelyanenko**

3:10 1094 Colloidal Silica Gelation Dynamics: Simulation And Experiment. **Xiujuan Cao**

3:30 1095 Computer Simulations of the Translocation Mechanism of Arginine Rich Cell Penetrating Peptides. **Angel E. Garcia**

4:00 1096 Computational Studies of Colloidal Dynamics In Entropic Fields. **Bryce D. Sturtevant**

4:20 1097 Surface Interactions Mediated by Polyelectrolyte Solutions. **Martin Turesson**

Thursday, June 18, 2009, 2:00 PM - 5:10 PM

Tribology and Adhesion II

Rm. 900, Fairchild Bldg.

Organizer: Anil N. Netravali

Presider: Girma Biresaw

2:00 1098 Mechanical Stability of Solid Surfaces in Surface-Active Media. **Eugene D. Shchukin (Keynote)**

2:30 1099 Effects of Organic Vapor Adsorption on Friction and Wear of Silicon Oxide Surfaces – from Fundamentals to MEMS Applications. **Seong Han Kim**

2:50 1100 The Lateral Force Between a Particle And a Substrate In Atmospheric Systems. **Hyojin Kweon**

3:10 1101 Adhesion of Highly Fluorinated Rubbers with the Aid of UV-Curable Resins. **Roberta Bongiovanni**

3:30 1102 Mechanisms of Synovial Fluid Lubrication in Artificial Hip Joints. **Rowena Crockett**

3:50 1103 Cellular Probe Force Microscopy and the Pathogenesis of Pneumothorax. **Scott C. Brown**

4:10 1104 The Tribological Performance of Nano-Diamond Added Polymer Coatings. **Dae-Soon Lim**

4:30 1105 Surface and Tribological Properties of Seed Proteins. **Girma Biresaw**

4:50 1106 Nanolubrication for Microsystems. **Sujeet K. Sinha**

Thursday, June 18, 2009, 5:15 PM - 6:15 PM

Victor K. LaMer Award Presentation & Lecture

Auditorium, Lerner Hall

Organizer: Michael A. Bevan

5:15 1107 Nanoparticles, Polymers, and Phospholipids. **Liangfang Zhang**

Thursday, June 18, 2009, 6:15 PM - 7:15 PM

Award Reception

Auditorium North Lobby, Lerner Hall

Thursday, June 18, 2009, 7:30 PM - 10:00 PM

Banquet

Library, Low Bldg.

Friday, June 19, 2009

Friday, June 19, 2009, 8:00 AM - 9:05 AM

Plenary Lecture

Auditorium, Lerner Hall

Presider: Björn Lindman

8:00 1108 Microgels: From Fundamentals to Applications. **Brian Vincent**

Friday, June 19, 2009, 9:05 AM - 9:30 AM
Coffee Break
Auditorium North Lobby, Lerner Hall

Friday, June 19, 2009, 8:00 AM – 4:00 PM
Coffee Break
Carleton Lounge, Mudd Bldg.

Friday, June 19, 2009, 9:30 AM - 11:50 AM
Advances in Cellulose Based Technology I
Rm. 227, Mudd Bldg.

Organizers: Scott Rosencrance and Steven J. Severtson

9:30 1109 Patterning of Superhydrophobic Paper Surfaces to Control the Mobility of Liquid Drops for Microfluidic Applications. Balamurali Balu, Dennis W. Hess and **Victor Breedveld**

9:50 1110 Functionalization of Cellulose Fibers by Adsorption of Organic Polymers Nanoparticles. **Pierre Sarrazin**

10:10 1111 Modification of Cellulose by UV-Grafting. **Roberta Bongiovanni**

10:30 1112 Thin Film Patterns in High-Molecular Poly(styrene-maleic anhydride) Copolymers. **Pieter Samyn**

10:50 1113 Characterization of Poly(3,4-ethylenedioxythiophene)-Poly(styrene sulfonate) (PEDOT:PSS) Adsorption On Cellulosic Materials. **Elson Montibon**

11:10 1114 Interactive Nano Fibrils. **Simon Utsel**

11:30 1115 Ordering and Gelation of Anionic and Cationic Cellulose Nanocrystal Aqueous Suspensions. **Derek G. Gray**

Friday, June 19, 2009, 9:30 AM - 12:00 PM
Biointerfaces VII: Proteins at Interfaces
Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Ka Yee Lee

Presider: Adam Cohen Simonsen

9:30 1116 "Proteins and Interfaces: Stability and Function (Keynote)". **Georges Belfort (Keynote)**

10:00 1117 Diffusing Nanoparticle Measurements of Protein-Carbohydrate Interactions. **Shannon L. Eichmann**

10:20 1118 Alternatives to the Use of Biomolecules for Cell-Level Binding Selectivity. **Surachate Kalasin**

10:40 1119 Interaction Forces Between Hydrophilic Surfaces Adsorbed with Apolipoprotein AII Alpha Helices. **José Campos-Terán**

11:00 Break.

11:20 1120 Anti-Thrombogenic Properties of Blended Poly(vinyl alcohol)/Chitosan Film. **Rodrigo Silveira Vieira**

11:40 1121 Interaction of Short Peptides with TiO₂ in Aqueous Solutions: A Liquid Chromatography

Study. **Golan Gertler**

Friday, June 19, 2009, 9:30 AM - 11:30 AM

Biology and Health Sciences I

Rm. 924, Mudd Bldg.

Organizer: Martin Malmsten

Presider: Kyriakos Papadopoulos

9:30 1122 Designer Nanoparticles for Quantitative Bionano Interactions. **Iseult Lynch**

9:50 1123 In Situ Raman Monitoring of the Thermo-Optical Effect of Gold Spec Silica Particles On Cancer Cells (A549). **Georgios Pyrgiotakis**

10:10 1124 Toxicity of Nano Aluminum Particles: Impact of Thorough Characterization. **Maria Palazuelos**

10:30 1125 Protein Screening And Bacterial Detection Using Lipid/Polymer Chromatic Films. **Raz Jelinek**

10:50 1126 Immunoglobulin Affinity Adsorption On Silica Surfaces Modified with Peptide Ligands. **Fei Shen**

11:10 1127 Combinatorial Micro-/Nanoarrays of Microenvironmental Signals Regulating Stem Cell Fate. **Ki-Bum Lee**

Friday, June 19, 2009, 9:30 AM - 11:50 AM

Capillary and Wetting Phenomena IV

Rm. 337, Mudd Bldg.

Organizers: S. S. Dukhin and Mohamed E. Labib

Presiders: Yakov I. Rabinovich and Rafael Tadmor

9:30 1128 Diffusion Kinetics and the Development of Capillary Forces. **Yakov I. Rabinovich**

9:50 1129 Imbibition and Dissolution of a Multi Scale Porous Active Medium. **Olivier Mondain-Monval**

10:10 1130 Surfactant Influence On the Onset of Annular Film Flow, Rivulet-Droplet Flow, And Rivulet Fragmentation In Mini-Tubes And Capillaries. **Mohamed E. Labib**

10:30 1131 Meniscus Interaction In the Vicinity of a Moving Three-Phase Contact Line with Micron or Sub-Micron Particles Attached to a Solid Surface. **S. S. Dukhin**

10:50 1132 Drop Retention Force as a Function of Resting Time. **Rafael Tadmor**

11:10 1133 Marangoni Driven Spreading of Aqueous Surfactant Solutions On Entangled Polyacrylamide and Mucin Solutions. **Stephen Garoff**

11:30 1134 Thermodynamic Stability Analysis for Capillary Condensation. **Janet A. W. Elliott**

Friday, June 19, 2009, 9:30 AM - 11:40 AM

Colloid and Surface Interactions in Water III

Sineband East 415, Schapiro Bldg.

Organizers: Ludmila Boinovich and John Y. Walz

Presider: Gerold Willing

9:30 1135 The Peculiarities of Interaction of Lyophobic Nanoparticles In Liquid Media. **Ludmila Boinovich (Keynote)**

10:00 1136 Attraction Between Patterned Surfaces: Going beyond the Van Der Waals Interaction. **Ionel Popa**

10:20 1137 Microstructure of State Behavior of Polymer Suspension. **So Youn Kim**

10:40 1138 Effects of Electrostatic Repulsion On the Drying of Colloidal Dispersions. **Alexander M. König**

11:00 1139 Accounting for Counterion Association In Prediction of Colloidal Stability. **Marco Lattuada**

11:20 1140 Particle Interactions Between Colloids at Liquid-Liquid Interfaces. **Jan Vermant**

Friday, June 19, 2009, 9:30 AM - 11:40 AM

Engineering at the Nano-Scale and Nano-Technology IV
Rm. 1024, Mudd Bldg.

Organizers: Yunfeng Lu and B. M. Moudgil

9:30 1141 Sol-Gel Electrospinning for Nanowire Synthesis. **Arijit Bose (Keynote)**

10:00 1142 Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. **Sung Gap Im**

10:20 Break.

10:30 1143 Nanoscale Multifunctional Materials for Targeting and Remediation of Environmental Contaminants. **Vijay T. John**

11:00 1144 Nanopatterned Biomimetic Surfaces: Protein Nanoarrays for Cell Adhesion Studies. **Matteo Palma**

11:20 1145 Impacts of Nanoparticle Properties and Interfacial Polymerization Conditions on Thin Film Nanocomposite Membranes. **Mary Laura Lind**

Friday, June 19, 2009, 9:30 AM - 12:05 PM

Environmental Colloid and Interfacial Processes VII
Davis Auditorium, Schapiro Bldg.

Organizers: V. Faye McNeill and Helen Nguyen

Presider: Qilin Li

9:30 Welcoming Remarks.

9:35 1146 Interfacial Forces in Membrane Fouling: Past, Present, and Future. **Eric MV Hoek (Keynote)**

10:15 1147 Fundamental Mechanism of Three-Component Combined Fouling of Membranes with Experimental Verification. **Albert Kim**

10:35 Break.

10:45 1148 A TEM Study of the Combined Fouling Layers Formed During Nanofiltration and Reverse Osmosis of Colloidal and Organic Solutions. **Alison E. Contreras**

11:05 1149 Investigating Membrane Organic Fouling and Chemical Cleaning Using Model Functionalized Surfaces and QCMD. **Alison E. Contreras**

11:25 1150 Effect of Polymer Flocculants On Microfiltration Membrane Flux. **Sen Wang**

11:45 1151 Sorption and Abiotic Transformation Behavior of Sulfadiazine on Soil Components. **Erwin**

Klumpp

Friday, June 19, 2009, 9:30 AM - 12:10 PM

Fabrication of Colloidal Assemblies and Devices VII: Fundamentals of Colloidal Assembly
Rm. 633, Mudd Bldg.

Organizers: Darrell Velezog and Orlin D. Velev
Presider: Valeria T. Milam

9:30 1152 Electric Field and Depletion Attraction Mediated Colloidal Crystal Assembly. **Michael A. Bevan**

9:50 1153 Protected Peptide Nanoparticles: Experiments And Brownian Dynamics Simulations of the Energetics of Assembly. **Suzanne M. D'Addio**

10:10 1154 Fabrication of Gold-Silicon-Silver Colloidal Trimers. **Joseph J. McDermott**

10:30 1155 Reinventing Chemistry: Bond Strength And Steric Hindrance at the Nanoscale. **Kyle J. M. Bishop**

10:50 1156 Controlled Association of Colloidal-Particle Mixtures Using pH-Dependent Hydrogen Bonding. **Pierre Starck**

11:10 1157 Dynamically Controlling All Degrees of Freedom of Freely Suspended Spherical Particles. **Randall Erb**

11:30 1158 Stability of DNA-Linked Magnetic Colloidal Chains. **Dichuan Li**

11:50 1159 High Refractive Index Nanocomposite Fluids for Immersion Lithography. **Remco Tuinier**

Friday, June 19, 2009, 9:30 AM - 12:00 PM

Future Directions in Colloid and Surface Science II

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizers: K. P. Ananthapadmanabhan and Nikolai D. Denkov

Presider: Eugene Pashkovski

9:30 1160 A Tale of Two Surfactants: Combining Light And Neutron Scattering with Rheology to Understand Shear Banding And Shear Induced Phase Transitions In Wormlike Micellar Solutions. **Norman J. Wagner**

9:55 1161 Biomimetic Membranes to Investigate the Interplay Between Specific Proteins And Lipids with Actin. **Laurence Ramos**

10:20 1162 Membrane Interactions with Detergents, Surfaces, And Proteins. **P. D. Olmsted**

10:45 1163 Model Stratum Corneum Lipid Membranes: Water Dynamics, Permeability, and Interactions with Surfactants and Particles. **Eugene Pashkovski**

11:10 1164 Lateral Adhesion Balance (LAB) – a Novel Surface Characterization Technique. **Rafael Tadmor**

11:35 1165 Imaging Interfacial Stresses In Colloidal Coatings. **Eric R. Dufresne**

Friday, June 19, 2009, 9:30 AM - 11:10 AM

General Papers I

Rm. 700, Fairchild Bldg.

Organizer: S. A. Ravishankar

Presider: Fernando Galembeck

9:30 1166 Nanoparticles And Nanostructures for Environmental Remediation of MTBE And 4-Chlorophenol. **Alexander Orlov**

9:50 1167 Investigation Into Behaviour And Use of Hydrophobically Modified Polymers as Reactive Dispersants. **Alexander Lincoln**

10:10 1168 Multifunctional Nanocolloids for Environmental Remediation of Cholorinated Hydrocarbons. **Jingjing Zhan**

10:30 1169 Comparative Study of Cr (III) Removal by the Cation Exchangers. **Khizar Hussain Shah Sr.**

10:50 1170 Interfacial Phenomena In the Sulfur-PTFE-Water System Under Hydrothermal Conditions. **Reuben John Mathew**

Friday, June 19, 2009, 9:30 AM - 11:30 AM

R. L. Rowell Symposium I

Rm. 825, Mudd Bldg.

Organizers: Raymond S. Farinato and A. Morfesis

9:30 1171 Antimicrobial Poly(arylene ethynylene) Polyelectrolytes: Interactions with Model Phospholipid Membrane Systems and Biocidal Activity. **David G. Whitten (Keynote)**

9:50 1172 Capillary Electrophoresis for Elucidating the Role of Charge Heterogeneity in Protein-Glycosaminoglycan Recognition. **Paul L. Dubin**

10:10 1173 Dynamic Electrophoretic Mobility Studies in the Development of Charge-Based Strategies to Combat HIV. **David Fairhurst**

10:30 1174 The Deviant Behavior of Labile Polyelectrolytes – Do We Need a New Theory? **Robert Pelton**

10:50 1175 Scattering Tools in the Study of Telechelic Hydrophobically-Modified Polymers. **Françoise M. Winnik**

11:10 1176 Measurement of Bulk Viscosity, Longitudinal Viscosity and Compressibility by Means of Acoustic Spectroscopy. "How Prof. Rowell Helped Us to Bring Ultrasound as a Tool for Colloid Science". **Andrei Dukhin**

Friday, June 19, 2009, 9:30 AM - 12:30 PM

Surfactants and Supermolecular Assemblies: Complexes of Peptides and Proteins with Amphiphiles

Rm. 1127, Mudd Bldg.

Organizer: Alexander Couzis

Presiders: Charles Maldarelli and Shahab Shojaei-Zadeh

9:30 1177 Adsorption of "Block Copolymers" Prepared by Grafting Poly(Ethylene Glycol) to Compact Globular Proteins. **Robert D. Tilton (Keynote)**

10:10 1178 Enzymes Wrapped in Polymeric Micelles. **Saskia Lindhoud**

10:30 1179 A Peptide Nanotube Nematic Phase. **Seyda Bucak**

10:50 1180 DNA-Separation by Rationally Designed Self-Assembling α -Helical Peptide. **Vikas Jain**

11:10 1181 Biocompatible Surfactant Mixtures. **Jian Lu**

11:30 1182 Sonolytic Decomposition of Oxalate by Ozone at Cavitation Bubble Interfaces. **Michael R. Hoffmann**

11:50 1183 Influence of Surfactants And Water-Soluble Polymers On Stability of Water-Coal Suspensions. **Kuanyshbek Musabekov**

12:10 1184 Self-Assembled Soft Materials From Biobased Surfactants. **George John**

Friday, June 19, 2009, 9:30 AM - 12:10 PM

Theory and Computer Simulations in Interfacial and Colloidal Systems III

Rm. 834, Mudd Bldg.

Presiders: Ramanathan Nagarajan and Shyam Vyas

9:30 1185 Electro-Optical Properties of DNA Fragments In Aqueous Solutions. **Jorge A. Bertolotto Sr.**

9:50 1186 Molecular Dynamics Simulations of Water Droplets On Hydrophilic Silica Surfaces. **Jens H. Walther**

10:10 1187 Ion-Ion Correlations And Charge Reversal at Titrating Solid Interfaces. **Christophe Labbez**

10:30 1188 Charge Inversion Induced by Specific Ion-Interface Interactions. **Carles Calero**

10:50 1189 A Thermodynamically Consistent Description of Ions In Bulk and at Interfaces. **Dominik Horinek**

11:10 1190 Interactions Between Surfaces Immersed In a Macroionic Solution. **Martin Trulsson**

11:30 1191 Modeling Salt-Specific Colloidal Interactions. **Dusan Bratko**

11:50 1192 A Mean Field Model of Polymer A - Polymer B - Diblock Copolymer XY Microemulsion. **Ramanathan Nagarajan**

Friday, June 19, 2009, 9:30 AM - 11:50 AM

Thermodynamics & Adsorption I

Rm. 233, Mudd Bldg.

Organizer: Lei Zhang

Presider: Renliang Xu

9:30 1193 Adsorption of Zinc Ion on Single-Walled Carbon Nanotubes by Atomic Absorption Spectroscopy. **O. Moradi**

9:50 1194 Comparison of Different Methods for the PZC Determination of NiO. **Muhammad Tahir Saddique**

10:10 1195 Effect of pH and Temperature on Sorption of Ni²⁺ Ions Onto SiO₂. **Dilara Begum**

10:30 1196 Local Equilibrium of the Surface at Non-Equilibrium Conditions. **Kirill Glavatskiy**

10:50 1197 Surface Induced First Order Phase Transitions. Ludmila Boinovich and **Alexandre Emelyanenko**

11:10 1198 Broadening of Solid-Liquid Phase Transitions Due to Interfacial Pre-Melting. **Hans Riegler**

11:30 1199 Interfacial Characteristics of Polymeric Coatings for Archeological Stones Conservation. **S. E. El-Mofty**

Friday, June 19, 2009, 9:30 AM - 12:30 PM

Tribology and Adhesion III

Rm. 900, Fairchild Bldg.

Organizers: Girma Biresaw and Anil Netravali

Presider: Ko Higashitani

9:30 1200 Adhesion and Friction of Aromatic Self-Assembled Monolayers. **Marina Ruths**

9:50 1201 Photochemical Surface Functionalization of Polyolefins. **Klaus Opwis**

10:10 1202 Effect of Common Lubricant Additives on the Properties of Surface/ Liquid and Air/Liquid Interfaces. **Mark T. Devlin**

10:30 1203 Formation of Surfactant-Stabilised Silica Organosols. **Rico Tabor**

10:50 1204 Characterization of Interparticle Forces in Aqueous and Nonaqueous Dispersions Using Multisample Analytical Centrifugation. **Dietmar Lerche**

11:10 1205 Time-Resolved Small-Angle Neutron Scattering. **Julian Eastoe**

11:30 1206 Surface Force Measurements of Superhydrophobicity by Atomic Force Colloidal Probe Microscopy and Influence of Surfactant on the Long-Range Interaction. **Agne Swerin**

11:50 1207 Effect of Protein Content In Soy Protein Resins On Their Interfacial Shear Strength with Ramie Fibers. **JunTae Kim**

12:10 1208 The Improvement In the Tribology of Self-Assembled Layers Via Intermolecular Hydrogen Bonding Construction. **Junyan Zhang**

Friday, June 19, 2009, 2:00 PM - 4:20 PM

Advances in Cellulose-Based Technology II

Rm. 227, Mudd Bldg.

Organizers: Scott Rosencrance and Steven J. Severtson

2:00 1209 Cellulose Nanocrystals In Nanocomposites. **Orlando J. Rojas**

2:20 1210 Adsorption Behavior, Structural and Adhesive Properties of Cationic/Anionic Microfibrillated Cellulose Multilayers. **Christian Aulin**

2:40 1211 Deswelling of Nanometer Thin Films of Cellulose upon Polyelectrolyte Adsorption. **Lars-Erik Enarsson**

3:00 1212 Effect of Stability of Colloidal Pigments On the Strength of Wet Paper. **Alvaro Tejado**

3:20 1213 Characterization of Cellulose Degradation by Second Harmonic Generation Microscopy. **Garth J. Simpson**

3:40 1214 Visualizing the Location of Polymeric And Colloidal Retention Aids In a Paper Sheet Using Confocal Fluorescence Microscopy. **Tiffany E. Bohnsack**

4:00 1215 Contact Angle Hysteresis and Surface Free Energy of Smooth Nanocrystalline Cellulose (I) Thin Films. **Theresa Dankovich**

Friday, June 19, 2009, 2:00 PM - 4:50 PM

Biointerfaces VIII: DNA at Interfaces

Rm. 833, Mudd Bldg.

Organizers: Marjorie Longo and Davis, Ka Yee Lee

Presiders: Kalle M. Levon and Yan Geng

2:00 1216 Interactions Of DNA With Cationic Surfactants And Proteins: Gels, Gel Nano-Particles, Microstructure And Phase Separation. **Björn Lindman (Keynote)**

2:30 1217 Surface Hybridization with Charge-Neutral DNA Analogues. **Ping Gong**

2:50 1218 Self-Protected Interactions in DNA-Functionalized Colloids: Nano Contact Glue. **Mirjam E. Leunissen**

3:10 1219 DNA Condensation And Packaging Via Combinative Self-Assembly. **Yan Geng**

3:30 Break.

3:50 1220 Morpholino Monolayers: Platforms for Label-Free Detection of DNA Molecules. **Napoleon E. Tercero**

4:10 1221 Oligonucleotide Hybridization at Electrolyte/Semiconducting Polymer Interface. **Kalle Levon**

4:30 1222 Compactation Mechanism of DNA by Cationic Vesicles: An Experimental And Theoretical Approach. **Alberto Martin-Molina**

Friday, June 19, 2009, 2:00 PM - 4:00 PM

Biology and Health Sciences II
Rm. 924, Mudd Bldg.

Organizer: Martin Malmsten
Presider: Kyriakos Papadopoulos

2:00 1223 A Novel Screening Method of Endocrine Disrupting Chemicals (EDCs) Based on Their Interaction to Small Uni-Lamellar Liposome. **Izumi Kubo**

2:20 1224 Detailed Study of Mixed DPPC/DPPG Films at Very High Film Compression. **Sameh M. I. Saad**

2:40 1225 Key Mechanism Triggering Cell-Penetrating Peptide to Cross Membrane. **Kazutami Sakamoto**

3:00 1226 Skin Lipid Conformation Changes In Porcine Skin with Prolonged Hydration. **Grace Tan**

3:20 1227 Interfacial Dissolution of Inhaled NO₂. **Shinichi Enami**

3:40 1228 Rheology of Dense Bacterial Biofilms. **James N. Wilking**

Friday, June 19, 2009, 2:00 PM - 4:40 PM

Capillary and Wetting Phenomena V
Rm. 337, Mudd Bldg.

Organizers: S. S. Dukhin and Mohamed E. Labib
Presider: Benilde Saramago

2:00 1229 Steric Effects of Ions in the Charge-Related Wetting Phenomena. **In Seok Kang**

2:20 1230 AC Electrowetting And Nanodrop Ejection On Parallel Conducting Electrodes. **Lu Zhang**

2:40 1231 Analysis of Electrowetting-Driven Spreading and Switching Time of Electrowetting-Based Devices. **Kwan Hyoung Kang**

3:00 1232 Electrowetting of Ionic Liquids: Contact Angle Saturation and Irreversibility. **Benilde Saramago**

3:20 1233 Experimental Evidence On Contact Angle Saturation by Trapping of Charge In Electrowetting. **Jeongeun Ryu**

3:40 1234 Jumping of a Droplet On a Superhydrophobic Surface In AC Electrowetting. **Seung Jun Lee**

4:00 1235 Capillary Condensation and Nanoscale Electrowetting. **Rohini Gupta and Joelle Frechette**

4:20 1236 Infiltration Kinetics of Polymers Into Porous Agglomerates. **Edith Peuvrel-Disdier**

Friday, June 19, 2009, 2:00 PM - 4:20 PM

Colloid and Surface Interactions in Water IV

Sineband East 415, Schapiro Bldg.

Organizers: Ludmila Boinovich and John Y. Walz

Presider: John Y. Walz

2:00 1237 Adsorption of Submicrometer-Sized Cationic Sterically-Stabilized Polystyrene Latex at the Air-Water Interface: Foam Behavior And Contact Angle Determination by Ellipsometry. **Damien Dupin**

2:20 1238 Non-Amphiphilic Assembly in Water: Thermodynamic Incompatibility of Water-Soluble Molecules. **Karen Simon**

2:40 1239 Formulation And Stability of Itraconazole And Odanacatib Nanoparticles: Governing Physical Parameters. **Varun Kumar**

3:00 1240 Quantitative Analysis of Platelet Exfoliation In Water And Platelet Aspect Ratio Distribution. **Harry J. Ploehn**

3:20 1241 Chain End of the Core Block Influences Colloidal Stability In Poly(ethylene oxide)-Block-Poly(caprolactone) Micelles. **Georgios Rizis**

3:40 1242 Interaction of Paclitaxel-Loaded Nanoparticles with Lipid Monolayer at Air/Water Interface as Model Biomembrane: Effect of Emulsifier and Coating Components. **Lingyun Zhao**

4:00 1243 Breakup of Colloidal Aggregates In Turbulent Flows. **Matthäus U. Bäbler**

Friday, June 19, 2009, 2:00 PM - 4:10 PM

Engineering at the Nano-Scale and Nano-Technology V

Rm. 1024, Mudd Bldg.

Organizers: Yunfeng Lu and B. M. Moudgi

2:00 1244 Structure and Colloidal Stability of Nanosized Zeolite Beta Precursors. **Nathan D. Hould**

2:20 1245 Synthesis and Characterization of Surface-Functionalized Inorganic-Organic Multilayer Particles. **Camille Dagallier**

2:40 1246 Organic-Inorganic Functional Microcapsules – Preparation and Characterization. **Yue Long**

3:00 1247 Synthesis And Characterization of Various Porous Silica Materials through Self-Assembly of Surfactants In Strong Acid Condition. **Seong-Geun Oh**

3:20 Break.

3:30 1248 A Novel Oil-In-Water Microemulsion Reaction Method for the Synthesis of Nanocrystalline CeO₂. **Margarita Sanchez-Dominguez**

3:50 1249 Latex-Vesicle Templated Synthesis of Hollow Inorganic Nanoparticles. **Spyros Monastiriotis**

Friday, June 19, 2009, 2:00 PM - 3:20 PM

Environmental Colloid and Interfacial Processes VIII

Davis Auditorium, Schapiro Bldg.

Organizer: V. Faye McNeill

Presiders: Qilin Li and Helen Nguyen

2:00 1250 Non-Uniform Particle Size Explains Reduction in Filtration Rates with Transport Distance in Porous Media. **Gaurav Saini**

2:20 1251 In Situ Measurement of the Fractal Dimension of Colloid Deposits In Porous Media. **David C. Mays**

2:40 Break.

3:00 1252 Removal of Aqueous Phase Pollutants through Entrapment In Surfactant Assemblies Followed by Encapsulation In Templated Mesoporous Materials. **Vijay T. John**

Friday, June 19, 2009, 2:00 PM - 4:30 PM

Fabrication of Colloidal Assemblies and Devices VIII: Templated and Biological Assembly

Rm. 633, Mudd Bldg.

Organizers: Darrell Velegol and Orlin D. Velev

Presider: Kyle J.M. Bishop

2:00 1253 Programming the Isothermal Disassembly of DNA-Linked Colloidal Particles. **Valeria T. Milam (Keynote)**

2:30 1254 Particles with Hierarchical Porosity Derived by Microemulsion Templating. **Dimitter N. Petsev**

2:50 1255 Synthesis of Microcapsules through Layer by Layer Assembly of Polyelectrolytes In Oil-In-Water Emulsions. **Sachin Khapli**

3:10 1256 Closed Nanoconstructs Assembled by Step-by-Step Ss-DNA Coupling Assisted by Phospholipid Membranes. **Debora Berti**

3:30 1257 Packing Efficiency of Small Silica Particles On Large Latex Particles. **Jennifer A. Balmer**

3:50 1258 Formation of Colloidosomes From Particle-Covered Bubbles Exposed to Surfactants. **Anand B. Subramaniam**

4:10 1259 Using Double-Stranded DNA Probes In Nucleic Acid Target Detection And Colloidal Satellite Assembly. **Bryan A. Baker**

Friday, June 19, 2009, 2:00 PM - 4:05 PM

Future Directions in Colloid and Surface Science III

InterSchool Lab Rm. 750, Schapiro Bldg.

Organizer: K. P. Ananthapadmanabhan

Presider: Nikolai D. Denkov

2:00 1260 Conservation of Cultural Heritage: There Is a Plenty of Room for Colloids Science. **Piero Baglioni (Keynote)**

2:25 1261 Solid Phase Organocatalysis. **Finn K. Hansen**

2:50 1262 Molecular Diagnostics, Opportunities for Colloid and Surface Science. **Darby Kozak**

3:15 1263 Remote Controlled and Feedback Systems of Polymer/ Nanoparticle Composites. **Helmut**

Moehwald

3:40 1264 Colloidal Ag Nanocrystals: Single Molecule Raman Scattering, Photovoltage, and Light Driven Nanocrystal Growth. **Louis Brus**

Friday, June 19, 2009, 2:00 PM - 4:00 PM

General Papers II

Rm. 700, Fairchild Bldg.

Organizer: Fernando Galembeck

Presider: S. A. Ravishankar

2:00 1265 Bioremoval of Arsenite Ions by Acidithiobacillus Ferrooxidans. **M. N. Chandraprabha**

2:20 1266 Cactus Mucilage: Using a Natural Hydrocolloid to Remove Arsenic from Drinking Water. **Dawn I. Fox**

2:40 1267 Colloidal Characterisation of Melbourne's Drinking Water. **Ian H. Harding**

3:00 1268 Molecular Interactions at the Ionic Liquid – Alcohol Interface. **Peixi Zhu**

3:20 1269 Dislocation Interactions In Crystals of Colloidal Dimers. **Sharon J. Gerbode**

3:40 1270 Microparticle Analysis by Applying Magnetic Field and Nano-Gap Device. **Hitoshi Watarai**

Friday, June 19, 2009, 2:00 PM - 4:00 PM

R. L. Rowell Symposium II

Rm. 825, Mudd Bldg.

Organizers: A. Morfesis and Raymond S. Farinato

2:00 1271 Graft Copolymer-Liposome Complexes Enhance Delivery of Antisense Oligonucleotides. **David Devore**

2:20 1272 Supramolecular Amphiphiles for Controlled Self-Assembly. **Xi Zhang**

2:40 1273 Supracrystals of Inorganic Nanocrystals: a New Class of Material. **Marie-Paule Pilani**

3:00 1274 Automatic Continuous Online Monitoring of Late-Stage Polycondensation Reactions in Polyamine Synthesis. **Raymond S. Farinato**

3:20 1275 New Advances In the Treatment of Storm Water Runoff. **Stephen R. Vasconcellos**

3:40 1276 Role of Zeta Potential In Water Production Optimization. **A. Morfesis**

Friday, June 19, 2009, 2:00 PM - 4:20 PM

Surfactants and Supramolecular Assemblies: Manipulating Supramolecular Structures

Rm. 1127, Mudd Bldg.

Presiders: Alexander Couzis and Charles Maldarelli

2:00 1277 Manipulation And Assembly of Functional Molecules And Macromolecules In AC-Electric Fields. **Y. Elaine Zhu (Keynote)**

2:40 1278 Facile Alignment of Non-Ionic Lyotropic Lamellar and Hexagonal Mesophases Using Magnetic Fields. **Chinedum O. Osuji**

3:00 1279 Tuning the Microstructure And Understanding Structure/ Rheology Relationship of Alkyl Poly-

Oxyethylene Sulfate Surfactant Micelles. **Travis K. Hodgdon**

3:20 1280 Modifying the Properties of Liquid CO₂. **Kieran Trickett**

3:40 1281 Probing Association Colloids Properties Using the Chemical Trapping Method—What Has Been Learned. **Laurence S. Romsted**

4:00 1282 Dielectrophoresis And AC-Field Induced Encapsulate Release of Micelles In Aqueous Suspensions. **Victoria E. Froude**

Friday, June 19, 2009, 2:00 PM - 4:40 PM

Theory and Computer Simulations in Interfacial and Colloidal Systems IV

Rm. 834, Mudd Bldg.

Presiders: Ramanathan Nagarajan and Shyam Vyas

2:00 1283 Modeling of Adhesive Colloidal System Deformation. **Robert Botet**

2:20 1284 Computational Study of Lubrication Forces Between Colloidal Particles and Planar Surfaces. **Bryce D. Sturtevant**

2:40 1285 Evaluation of a Discrete Sedimentation Model of Monodisperse Suspensions with An Exponential Decay Drag Force Function. **Herley Casanova**

3:00 1286 Mechanism Identification of Metal Nano Particle Precipitation. **Roberto Irizarry**

3:20 1287 Modelling of the Precipitation of Zinc Oxide Semiconductor Nanoparticles. **Doris Segets**

3:40 1288 Using STM to Identify Chemical Species Via a Novel Contrast Mechanism. **Na Guo**

4:00 1289 Speciation of Adsorbed Species On Oxide Hematite Nanoparticles In Water Using FTIR Spectroscopy and Quantum Chemistry Modeling. **Irina Chernyshova**

4:20 1290 Pattern Formation During the Evaporation of a Colloidal Nanoliter Drop: a Numerical and Experimental Study. **Daniel Attinge**

Friday, June 19, 2009, 2:00 PM - 4:00 PM

Thermodynamics & Adsorption II

Rm. 233, Mudd Bldg.

Organizer: Lei Zhang

Presider: Renliang Xu

2:00 1291 Adsorption Properties of Mixed b-Lactoglobulin – Alkytrimethylammonium Bromide Layers at the Water/Oil Interface. **Vincent Pradines**

2:20 1292 The Effect of Micromilled Features On the Adsorption of Serum Proteins to Polystyrene. **William Hum**

2:40 1293 Investigations of Kinetic And Thermodynamic Factors Regulating the Properties of Organic Doped Aqueous Aerosol Droplets. **Adele Laurain**

3:00 1294 Determination of the Surface Tension of Polycrystalline Cu, Au, And Ni Surfaces. **Charles A. Ward**

3:20 1295 Adsorption of Bt Toxin Monomer And Oligomers On Mica And Glass Studied by Scanning Confocal Fluorescence. **Philippe Déjardin**

3:40 1296 Heterogeneous Adsorption of An Anionic Surfactant On Surface of Functionalized Nanoparticles and Correlation to Particle Stability. **Paolo Arosio**

Friday, June 19, 2009, 2:00 PM - 5:00 PM

Tribology and Adhesion IV

Rm. 900, Fairchild Bldg.

Organizers: Girma Biresaw and Anil N. Netravali

Presider: Rowena Crockett

2:00 1297 Tribological Behavior of Polyelectrolyte Brushes in Aqueous Media. **Atsushi Takahara**

2:20 1298 Control of Surface Properties of Nanostructured Polymer Thin Films. **Suzanne Giasson**

2:40 1299 Frictional Properties of Physisorbed Layers of Self-Organized Phthalocyanine Derivatives. **Koji Miyake**

3:00 1300 Chain Mobility and Functional Group Effects in Micro-Scale Friction. **Steven G. Vilt**

3:20 1301 Friction and Wearing of Silica Surfaces in Electrolyte Solutions. **Ko Higashitani**

3:40 1302 Nanomechanical Properties of Water and Lipid Membranes. **Mathew Goertz**

4:00 1303 Improving Organic Friction Modifier and Anti-Wear Additive Technology for Automotive Applications. **Frank J. DeBlase, Sr.**

4:20 1304 Design of Surfactants and Properties of Colloidal Nanoparticles Used In Lubricant Additive Formulations. **Peter J. Dowding**

4:40 1305 Characterization of Interface Properties of Clay Nanoplatelets Filled Epoxy Resin and Carbon Fiber by Single Fiber Composite Technique. **Hanumanthaiah Kumar**