

**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**

**Biom mineralization I**

Rm. 633, Mudd Bldg.

Presiders: George Nancollas and John H. Harding

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

**10:00 11** Biological Controls in Biom mineralization. **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 Biom mineralization 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 Catanionic 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. Zelenev**

**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-C<sub>8</sub>H<sub>17</sub>OH/H<sub>2</sub>O. **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. Schwendemann**

**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 Lysosyme 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 C<sub>12</sub> TAB / C<sub>12</sub> 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 Nanocolloial 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. **Il 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 BaCO<sub>3</sub> 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 Microfluidically 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** Evanesence 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<sup>+</sup> Versus K<sup>+</sup> 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. **Vinothan 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@Pnlpam 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: Dimitar 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 Roij**

**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. Shrout**
- 11:00 267** Adsorption of Corynebacterium-Diphtheriae-Intermedius (CDI) Bacteria Onto Phosphate Mineral. **S.E. El-Mofly**
- 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. Eisenhal 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 O<sub>3</sub> on Deliquesced KI Particles Coated with Fatty Acids and SDS. **Aur lie Rouvi re**
- 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 O<sub>3</sub>, NO<sub>2</sub>, And H<sub>2</sub>O 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 TiO<sub>2</sub> 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 Stabilized 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** TiO<sub>2</sub> 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 Lefevvre**

**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 Supermolecular 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 CaCO<sub>3</sub> 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. Arêas**
- 422 Emergent Structures And Dynamics In Biomacromolecular Systems: Synergic Effects of Amylose On Lysozyme Gelation In Dimethylsulfoxide/Water. **Elizabeth P. G. Arêas**
- 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 C<sub>60</sub> 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 Vyhnaalkova**
- 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 Adsorption 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) Redox 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 Ramanarivo**
- 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 Organization 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 SiO<sub>2</sub> 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 Eletrokinetic 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. **Jhonny A. Rodrigues**

**10:20 598** Porous Materials and Capsules From Particle-Stabilized Emulsions. **I Ike 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  $\alpha$ -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 Velegol and Orlin D. Velev

Presider: Chekesha 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-TiO<sub>2</sub> 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 TiO<sub>2</sub> 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. Eisenhal 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 PLA<sub>2</sub> 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 CeO<sub>2</sub> Nanoparticles in a CO<sub>2</sub> 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 Velegol and Orlin D. Velev

Presider: Ilona Kretzschmar

2:00 722 Confinement Induced Photonic Structures of Nonspherical Colloidal Building Blocks. **Chekesh 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. **Shoeleh 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 Attractions to Assemble Colloidal Particles. **Kun Zhao**

**2:50 739** Interparticle Forces at the Nanoscale. **Darrell Velegol**

**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 Ramanarivo**  
**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 Supermolecular 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. **Carne 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/H<sub>2</sub>O 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 Hosseinidoust**
- 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-Modified 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 C<sub>60</sub> Encapsulation. **Illa 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 HfO<sub>2</sub> 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 Lefeuvre**
- 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. **Hiroto 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. **Bokyoung 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 $\alpha$  (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 Velegol (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 TiO<sub>2</sub>/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. Klott**

**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-Mofly**

**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/TiO<sub>2</sub> 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 Fe<sub>0</sub> Nanoparticles In Heterogeneous Saturated Sand: Effects of Particle Concentration, Excess Polymer, Fe<sub>0</sub> 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 Velegol and Orlin D. Velev

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. **Siyong Q. Choi**

**Thursday, June 18, 2009, 9:30 AM - 12:10 PM**

**Surfactants and Supermolecular 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. Ruso**
- 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 Imura**

**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 Prici**
- 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. **Yasuhisa 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 Deasphalted 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 II**

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 Templated 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 CO<sub>2</sub> 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 TiO<sub>2</sub> 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/TiO<sub>2</sub> 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-C<sub>60</sub> Interactions And Its Impact On C<sub>60</sub> 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 Velegol 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 Supermolecular 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 CO<sub>2</sub>-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 TiO<sub>2</sub> 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 Velegol 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 Chlorinated 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  $\alpha$ -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 Ni<sup>2+</sup> Ions Onto SiO<sub>2</sub>. **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** Compaction 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 NO<sub>2</sub>. **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 CeO<sub>2</sub>. **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. **Dimitar 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. **Helmuth**

## 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. Chandrababha**

**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 Pileni**

**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 CO<sub>2</sub>. **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 – Alkyltrimethylammonium 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**