

COLL

DIVISION OF COLLOID AND SURFACE CHEMISTRY

R. Nagarajan, *Program Chair*

SUNDAY MORNING

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers, Presiding*

8:30 1. Controlled self-assembly of polymeric amphiphiles driven by crystallization. **I. Manners**

9:00 2. Rod-like block copolymer micelles for delivery of drugs and radionuclides to tumors. **M. Winnik**

9:30 3. Polypeptide, RNA, and protein co-assemblies as delivery systems. **P.T. Hammond**

10:00 4. DNA is not merely the secret of life: Semantomorphic science. **N.C. Seeman**

10:30 Intermission.

10:45 5. Coupling self-assembly of one-dimensional DNA fibers and fiber networks to regulating chemical reactions. **R. Schulman**

11:15 6. Beyond Watson-Crick base pairing: DNA polymer hybrid self-assemblies. **A. Herrmann**

11:45 7. Supramolecular polymerization of DNA origami nanostructures with peptides, proteins, and small molecules. **N. Stephanopoulos**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*
J. C. Conboy, C. Naumann, *Presiding*

8:30 8. New strategies for stimuli-responsive liposomes. **M. Best**, J. Lou, x. Zhang

8:55 9. Modulated phases on spherical membranes and in strongly-driven systems. **M.O. Lavrentovich**

9:20 10. Chemical activation of mechanosensitive channels in living bacteria. **M.J. Wilhelm**, M. Sharifian, H. Dai

9:45 11. Cooperative adsorption: Environmental and biological consequences of organic enrichment by lipid films. **R.A. Walker**, K. Link, G. Spurzem

10:10 12. Direct visualization of platelet integrins using anti-transmembrane domain peptides containing a blue fluorescent amino acid. **J.S. Bennett**, K.P. Fong, I.A. Ahmed, M. Mravic, H. Jo, W.F. DeGrado, F. Gai

10:35 13. Structural origin of cholesterol induced phosphoinositide clustering. **A. Gericke**, K. Han, A. Bryant, R. Pastor

11:00 14. Universal dynamics in liposomes. S. Gupta, J. De Mel, **G.J. Schneider**

11:25 15. Exploring the properties and dynamics of multi-MAC support structures for lipid bilayer membranes. **D. Burden**, A.J. Smith, T. Larsen, S. Virolainen, H. Zimmerman, L. Keranen Burden

11:50 16. Supported biomimetic hybrid bilayers: pH-mediated interactions between glass and lipid-polymer vesicles. **W. Paxton**, K. Willes, J. Genchev

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Interfacing Nanomaterials & Biology

J. A. Hollingsworth, R. Nagarajan, *Organizers*
J. R. McBride, *Organizer, Presiding*

8:30 17. Nanomaterial-based contrast agents for spectral X-ray imaging. S. Tafazoli, G. Wang, **M. Gkikas**

8:50 18. Gadolinium oxide nanoplates as T₁ MRI contrast agents. N. Taheri, **J. Villanova**, G. Stinnett, A. Bohloul, C. Avendano, P. Decuzzi, R. Pautler, V.L. Colvin

9:10 19. Morphology control and SERS application of gold nanostars. **C. Jiang**

9:30 20. Room temperature green synthesis of reduced Ti₃C₂T_x MXene nanosheets with enhanced conductivity and SERS activity. **T.B. Limbu**, M.Y. Garcia Cervantes, J. Orlando, B. chitara, Y. Tang, F. Yan

9:50 21. Intracellular activation of bioorthogonal nanozymes through endosomal proteolysis of the protein corona. **X. Zhang**, Y. Liu, S. Gopalakrishnan, L. Castellanos-Garcia, M. Malassiné, I. Uddin, G. Li, R. Huang, D.C. Luther, R.W. Vachet, V.M. Rotello

10:10 22. Toxicity and degradation of copper indium sulfide quantum dots *in vivo*. **J. Kays**, A. Saeboe, R. Toufanian, A.M. Dennis

10:30 23. Soluble, multi-valent nano-self peptides increase phagocytosis of antibody-opsonized targets. **D.E. Discher**

11:00 24. Peptide engineering for targeted, intracellular delivery of siRNA and proteins. **M.O. Sullivan**

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, H. Fan, *Organizers, Presiding*

8:30 25. Colloidal synthesis of light-emitting carbon dots and rods. **A. Rogach**

9:00 26. Self-assembly of gold nanocrystals. **P. Mulvaney**

9:30 27. Rational construction of complex heterostructured nanoparticles using sequential partial cation exchange reactions. **R.E. Schaak**

10:00 Intermission.

10:10 28. Design of multifunctional nanomaterials and devices through nanocrystal self-assembly. **C.B. Murray**

10:40 29. Fabrication of intelligent colloidal photonic crystal hydrogels for sensing trace metal in seawater. J. Qin, B. Dong, L. Cao, **W. Wang**

11:10 30. Massively-parallel tip-directed synthesis of complex polyelemental nanoparticle arrays. **A. Ivankin**, P. Chen, J. Du, L. Huang, E.J. Kluender, C.A. Mirkin

11:40 31. Atomistic modeling of nanoparticles lattices formed at surfaces and bulks of liquids. **P. Kral**

Section E

Pennsylvania Convention Center
119B

Surface Chemistry

Surface Chemistry of Solid Surfaces

S. L. Tait, *Organizer*

C. Barroo, S. Crawford, A. Mukhopadhyay, S. Simpson, *Presiding*

8:30 32. First-principles calculations on IrO₃ desorbability at high temperatures. **I. Seo**, S. Yokota, Y. Imai, Y. Gohda

8:50 33. Understanding wet chemical etching mechanisms for selective functionalization of graphitic surfaces. **M. Trought**, I. Wentworth, T.R. Leftwich, K.A. Perrine

9:10 34. Covalent functionalization of Si(111) surfaces with ferrocene and naphthalene diimide: Molecular strategies to control the electrochemical properties of hybrid interfaces. **A. Mukhopadhyay**, B. Bernard, K. Liu, V. Paulino, C. Liu, C.L. Donley, O. Jean-Hubert

9:30 35. Scalable preparation of chiral metal surfaces for enantioselective processes. **N. Shukla**, A.J. Gellman

9:50 36. Cycloalkane adsorption on symmetry compatible and frustrated surfaces. **C.A. Crain**, J.Z. Larese

10:10 37. Adsorption of butadiene and butene isomers on Cu(111): Insights from DFT. **S. Simpson**

10:30 38. Thermodynamic, modeling, and neutron scattering investigation on the adsorption of rigid linear hydrocarbons on graphite and MgO (1 0 0). **A. Pedersen**, J.Z. Larese

10:50 39. Nanoscale surface chemistry during N₂O hydrogenation on Au-Ag model catalysts. L. Jacobs, T. Visart de Bocarmé, **C. Barroo**

11:10 40. Directed collision of F or CF₂ with CF₃ gives umbrella inversion of CF₃ followed by collinear ejection of F or CF₂. **M.J. Timm**, L. Leung, K. Anggara, J.C. Polanyi

11:30 41. Multi-electron reduction capacity and complexity in metal-organic redox assembly at surfaces. **S.L. Tait**

11:50 42. Rapid, selective, ambient growth and optimization of copper benzene-1,3,5-tricarboxylate (Cu-BTC) metal-organic framework thin films on a conductive metal oxide. **S. Crawford**, K. Kim, P. Ohodnicki

12:10 43. Intrinsic thermal framework stability of UiO-67 metal-organic frameworks. **I. Goodenough**, V. Devulapalli, M. Boyanich, T. Luo, M.L. De Souza, M. Richard, N.L. Rosi, E. Borguet

Section F

Pennsylvania Convention Center
121A

Basic Research in Colloids, Surfactants & Interfaces

Colloidal Systems

R. Nagarajan, *Organizer*

L. Pan, C. L. Wirth, *Presiding*

8:30 44. NMR relaxation, powder wettability and Hansen solubility parameters applied to colloidal materials. **D. Fairhurst**, R. Sharma, S. Takeda

8:50 45. Antiferromagnetic to ferromagnetic transition in geometrically frustrated quasi-two-dimensional colloidal crystals. **A. Hill**, X. Ma, C. Mishra, A.G. Yodh

9:10 46. Stabilization of cationic aluminum hydroxide clusters in high pH environments with a CaCl₂/L-arginine matrix. S. Smart, V. Dubovoy, **L. Pan**

9:30 47. Characterization of Colloidal, Mechanical and Electrochemical Properties of Nanobubbles in Water. **X. Shi**, T. Marhaba, W. Zhang

9:50 48. Generation of anisotropic gold and gold-palladium bimetallic nanoparticles on functionalized surfaces. **V.L. Gerios**, I.M. Smith, K. Bandyopadhyay

- 10:10 49.** Stabilization of STRIPs bijels with mixtures of hydrophilic and hydrophobic nanoparticles. **G. Di Vitantonio**, D. Lee, K.J. Stebe
- 10:30 50.** Influence of nanoparticles on the dynamics and clustering of active colloids proximate to a boundary. M.A. Kalil, M.W. Issa, N.R. Baumgartner, S.D. Ryan, **C.L. Wirth**
- 10:50 51.** Three dimensional multiphasic structures via vaporization induced phase separation (VIPS). **T. Wang**, G. Vitantonio, K.J. Stebe, D. Lee
- 11:10 52.** Symmetry-based discovery of multicomponent, two-dimensional colloidal crystals. **N. Mahynski**, E. Pretti, V. Shen, J. Mittal
- 11:30 53.** Engineering crystal morphology using an additive: Case study of stearic acid. **H. Goswami**, G. Pauchet, J.R. Seth
- 11:50 54.** Computational modeling of colloidal nanocrystals: Equilibrium and far-from-equilibrium self-assembly. **L. Padilla Salas**, A. Ramirez-Hernandez
- 12:10 55.** AFM study of colloidal forces between asymmetric hydrophobic bodies in aqueous solution. **K. Li**, Z. Yu, Y. Ge, W. Wang, J. Gong

Section G

Pennsylvania Convention Center
121B

Amphiphilic Per- & Poly-fluoroalkyl Substances: Solution & Interfacial Phenomena

D. Bedrov, D. D. Dionysiou, *Organizers*
P. Alexandridis, M. Tsianou, *Organizers, Presiding*

- 8:30 56.** Efficient trapping of fluorinated therapeutics at the air/water interface using fluorous interactions: Implications for medical microbubble design. **M. Krafft**
- 9:00 57.** Tuning morphology of low fluorine-content reverse micelles in supercritical carbon dioxide by pressure, water content, and UV-light irradiation. **M. Sagisaka**, A. Yoshizawa, A. Mohamed, S. Alexander, J. Eastoe
- 9:30 58.** Perfluorinated surfactant micelle formation and structure in aqueous media. S. Kancharla, D. Bedrov, M. Tsianou, **P. Alexandridis**
- 9:50 59.** Influence of Co-solvents on the structure of perfluorooctanoic acid micelles in water: Molecular dynamics simulation study. **D. Dong**, D. Bedrov

10:10 60. Investigation of PFOA and PFOS enrichment mechanisms in sea spray aerosol proxy systems. **M. Fiamingo**, K.A. Carter-Fenk, H. Allen

10:30 61. Perfluorinated amphipolar polymers at interfaces. **M. Klapper**, K. Kluthe, T. Schuster

10:50 62. Fuel for firefighting foam evaluations: Gasoline vs heptane. **A. Snow**, S. Giles, K. Hinnant, J. Farley, R. Ananth

11:20 63. Novel cyclodextrin-based adsorbents to remove per- and polyfluorinated alkyl substances from water. M. Klemes, Y. Ling, C. Ching, L. Xiao, D.E. Helbling, **W.R. Dichtel**

11:50 64. Particulate clay with a polyamine fluorocarbon polymer stationary phase as an adsorbent for the removal of perfluorinated chemicals from water. **R. Xie**, A.E. Smith, J. Berberich, **N.D. Danielson**

Section H

Pennsylvania Convention Center
103C

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

Methods

E. Borguet, H. Dai, *Organizers*

J. I. Siepmann, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 65. Visualizing chemistry: Atomic sizes and molecular shapes from the classical turning surface of the Kohn-Sham potential. E. Ospadov, V.N. Staroverov, J. Tao, **J. Perdew**

9:05 66. Path collective variables for exploring free energy landscapes of molecular transitions. A. Pérez de Alba Ortíz, A. Tiwari, R. Puthenkalathil, **B. Ensing**

9:35 67. Coarse-grained molecular dynamics of lipid self-assembly: Membranes, vesicles, lipid nanoparticles. **W. Shinoda**

10:05 Intermission.

10:20 68. Accelerating first-principles based molecular dynamics simulations with machine learning. **U. Roethlisberger**

10:50 69. Discovering design principles for anion exchange membranes and deep eutectic solvents using first-principles molecular dynamics. **M.E. Tuckerman**, T. Zelovich, B. Doherty

11:20 70. Novel evaluation scheme of adhesion strength at the interface between liquid and polymer-grafted substrate. **M. Uranagase**, S. Ogata

11:40 71. Boosting *ab-initio* molecular dynamics with machine learning. **R. Car**

Section I

Pennsylvania Convention Center
113B

Semiconductor Surfaces: From Chemistry & Function to Applications

Dynamic Processes & Charge Transport

S. Schofield, *Organizer*

A. V. Teplyakov, *Organizer, Presiding*

8:30 72. Ultrafast charge carrier dynamics at molecule-semiconductor interfaces. **L. Gundlach**

9:00 73. 1D chains: On-surface synthesis and transport properties. **P. Jelinek**

9:30 74. Electron-attachment gives unidirectional in-plane molecular rotation of *para*-chlorostyrene on Si(100). **S. Guo**, M.J. Timm, K. Huang, J.C. Polanyi

10:00 75. Excited states and rapid electron exchange at polymer-metal and molecule-metal interfaces. **P.G. Piotrowiak**

10:30 Intermission.

10:50 76. Relaxation rates of charge carriers response to chemical composition in PbX/CdX, X = S or Se, core/shell quantum dots. **L. Lystrom**, P.K. Tamukong, S. Kilina

11:10 77. Dynamics of *para*-methyl red on surfaces. **S. Doble**, J.P. Avenoso, H. Yan, L.G. Rego, L. Gundlach

11:30 78. Ultrafast dynamics of plasmon-induced hot-hole transfer in Au/p-Cu₂O heterostructures. **M. Jia**, Z. Li, H. Yan, J.P. Avenoso, S. Doble, L. Gundlach

11:50 79. Enhanced transport and carrier selectivity at silicon/perovskite interfaces enabled by ordered perylene monolayers. **A. Carl**

Section J

Pennsylvania Convention Center
115A

Bioconjugation of Colloids

N. Feliu Torres, W. J. Parak, *Organizers*

L. Liz Marzan, *Organizer, Presiding*

8:30 80. Avoiding the endosomal trap: Direct cytosolic delivery of biologic (and CRISPR-Cas9) through membrane fusion processes. **V.M. Rotello**

9:00 81. Non-covalent attachment of peptide drugs to gold nanoparticles for intracellular delivery utilizing host-guest chemistry. **K. King**, J.A. McCune, S. Sonzini, C. van der Walle, O.A. Scherman

9:15 82. Assessing micrometastases as a target for nanoparticles using 3D microscopy and machine learning. **W. Chan**, B. Kingston, A. Syed, J. Ngai, S. Sindhvani

9:45 Intermission.

10:00 83. Dual-function of lipoic acid groups as surface anchors and sulfhydryl reactive sites on polymer-stabilized nanocolloids. Z. Jin, A. Kapur, W. Wang, **H.M. Mattoussi**

10:30 84. Click chemistry-ready zwitterionic quantum dots exhibiting high DNA grafting efficiency. **C. Ortiz**, C. Grazon, M. Chern, V. Kong, K. Ward, S. Lecommandoux, M.W. Grinstaff, A.M. Dennis

10:45 85. Investigating thermodynamics and kinetic control mechanism for competitive protein adsorption to a nanoparticle surface. **R. Hill**, S. Claxton, K. Boulet, R. Perera, T. South, R. Yadav, N. Fitzkee

11:00 Intermission.

11:15 86. Assemblies of highly efficient iron oxide nanocubes for magnetic hyperthermia to treat tumors. **T. Pellegrino**

11:45 87. Lymphoid targeting of peptide antigen and TLR agonists by lipid nanoparticles. **D. Van Lysebetten**, B. De Geest

12:00 88. Nanoparticle-biomolecule interface in paper based immunoassays and rapid diagnostics. **K. Hamad-Schifferli**

Polymer Colloids: Synthesis, Analysis, Modeling & Application

Sponsored by POLY, Cosponsored by ANYL, COLL and PMSE

SUNDAY AFTERNOON

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

R. Nagarajan, M. V. Tirrell, *Organizers*

S. Förster, *Organizer, Presiding*

Y. G. Yingling, *Presiding*

1:30 89. Programming lifecycles and dynamics in chemically powered out-of-equilibrium self-assemblies. **A. Walther**

2:00 90. Programming materials with classical conditioning algorithm. **O.T. Ikkala**, H. Zhang, H. Zeng, A. Priimagi

2:30 91. Assembly of atomically defined nanostructures from sequence-defined peptoid polymers. S. Xuan, A.I. Nguyen, **R.N. Zuckermann**

3:00 92. Elastin-like protein-globular protein fusion constructs as a method for high-throughput self-assembly of functional nanostructures. **B.D. Olsen**, C. Mills, E. Ding

3:30 Intermission.

3:40 93. Sonic design of self-assembling hierarchical biopolymers. **M.J. Buehler**

4:10 94. Prediction of polyelectrolyte block copolymer morphologies. **Y.G. Yingling**

4:40 95. Self-assembly in block copolymer systems. **U.B. Wiesner**

5:10 96. Dynamics of a polymer network at intermediate distances. **H. Diamant**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*

M. L. Longo, *Organizer, Presiding*

A. Subramaniam, *Presiding*

1:30 97. Lipid chain entropy and exchange in the vicinity of G-protein coupled receptors. **A. Leonard**, A. Sodt, E. Lyman

1:55 98. Elastic and structural interactions of eCAPs WLBU2 and D8 with bacterial lipid membrane mimics. **S.A. Tristram-Nagle**, F. Heinrich, A. Kumagai, F. Dupuy, R. Ernst, B. Deslouches, P. Di

2:20 99. Polymer gel-tethered lipid bilayer: Cell surface mimetic of tunable viscoelasticity. **C. Naumann**, K. Shils

2:45 100. Exquisite sensitivity of PhD peptide activity to bilayer lipid composition. S.Y. Kim, W.C. Wimley, **K.A. Hristova**

3:10 101. Effect of very long chain polyunsaturated fatty acids on membrane structure and lipid flip-flop studied in model membranes. **J.C. Conboy**

3:35 102. Microfluidic development of giant unilamellar vesicles encapsulating drugs for oral administration. **J. Fan**

4:00 103. Model plasma membrane exhibits a microemulsion in both leaves providing a foundation for "RAFTS". **M. Schick**, D. Allender, H. Giang

4:25 104. Domains of synaptotagmin 1 are structurally disordered, coupled and are allosterically modulated by synaptic vesicle lipids: Each modulates the calcium ion sensing capabilities of synaptotagmin 1. **A. Hinderliter**

4:50 105. Molecular modeling of lipid-lipid interactions coupling to curvature: Cholesterol and gangliosides. A. Beaven, K. Sapp, M. Dorrell, **A. Sodt**

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Designing Nanomaterials for Optoelectronic Properties

J. R. McBride, R. Nagarajan, *Organizers*

J. A. Hollingsworth, *Organizer, Presiding*

1:30 106. Structure and dynamics in perovskite nanomaterials. **W.A. Tisdale**

2:00 107. Controlling the optical and electronic properties of colloidal quantum dots using surface ligand chemistry. **M.C. Beard**

2:30 108. Making nanoparticles more efficient than bulk: Lessons from upconversion. **B.E. Cohen**, B. Tian, D. Garfield, A. Fernandez-Bravo, E. Chan, P. Schuck

2:50 109. Revealing the impact of shell composition and defects on colloidal quantum dot performance. **J.R. McBride**, S.M. Click, N. Freymeyer, M.F. Chisholm, J.A. Hollingsworth, S.J. Rosenthal

3:10 110. Accelerated solid-state diffusion during cation exchange in PbS-CdS nanocrystals. **R.D. Robinson**

3:30 111. Synthesis of Cu_{2-x}S/PbS core/shell nanocrystals for infrared exciton-plasmon coupling. **J.E. Boercker**, S. Brittman, R. Stround, M. Stewart, C. Ellis, P.D. Cunningham, J. Tischler

3:50 112. Alternative plasmonic nanomaterials as building blocks for purcell-enhanced emission in the infrared. **E.A. Dolgoplova**, Y. Kim, J. Watt, G. Pilania, R. Bose, A. Malko, H. Htoon, J.A. Hollingsworth

4:10 113. Dimensional confinement to control perovskite crystallographic phase. **A.T. Fafarman**, R. Yang, L.Z. Tan

4:30 114. Mercury chalcogenide nanoplatelets with tunable shortwave infrared defect emission. **J.R. Caram**, S. Tenney, T. Atallah

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, H. Fan, *Organizers, Presiding*

1:30 115. Synthesis of self-assembled nanoparticles from various types of precursors in aerosol droplets. **P. Biswas**, S. Dhawan, H. Zhou

2:00 116. Hyperspectral imaging of nanoparticle attachment and growth. **D.S. Ginger**

2:30 117. Anisotropic chemistry on gold nanorods. **C.J. Murphy**

3:00 Intermission.

3:10 118. Light-triggered changes in the solvation and interactions of metallic nanoparticles. **N.L. Abbott**

3:40 119. Structure determination of colloidal crystals in solution using small angle X-ray scattering. **B. Lee**

4:10 120. Nanostructures synthesized using non-native block copolymer morphologies. **K.G. Yager**

4:40 121. New insight into the role of Ag in the seed-mediated gold nanorods synthesis. **J. Zhu, R. Lennox**

Section E

Pennsylvania Convention Center
119B

Surface Chemistry

Molecular Assembly at Surfaces & in Films

S. L. Tait, *Organizer*

E. C. Landis, Y. Lu, C. Pfeiffer, *Presiding*

1:30 122. Long-range order and templated deposition of alkoxy-pyrenes in monolayers of discrete oligoethylene-naphthalenediimide at the liquid/solid interface. **J. Berrocal**, B.F. de Waal, H. Heideman, E.W. Meijer, B. Feringa

1:50 123. Surface molecular assemblies of amino acids on Cu(111). **C. Pfeiffer**, N. Guisinger

2:10 124. Using EC-STM to obtain an understanding of amino acid interaction on Au(111). **K.P. Boyd**, J.A. Phillips, I. Baljak, L.K. Harville, E.V. Iski

2:30 125. Surface-mediated crystal growth of aurous cyanide from molecular self-assembled monolayers. **K.K. Barr**, N. Chiang, G. Vinnacombe, A.I. Guttentag, P.S. Weiss

2:50 126. Infrared nanospectroscopy at the graphene–electrolyte interface. **Y. Lu**, M. Salmeron

3:10 127. Molecular layers as functional interfaces to nanoporous gold. **E.C. Landis**

3:30 128. Reversible self-assembled monolayers as a multivalent platform for virus detection and inhibition. **Y.N. Sergeeva**, S. Yeung, T. Janssens, T. Dam, P. Jönsson, V. Chaturvedi, B. Sellergren

3:50 129. Quantifying nanoparticle surface chemistries' effect on association with biological models. **D.N. Williams**, Z. Rosenzweig

4:10 130. Rapid optimization of surface chemistry in a novel photochemical printer: Surface-initiated thiol-acrylate photopolymerizations. **A.B. Braunschweig**

4:30 131. Smooth and transparent hybrid films showing statically hydrophilic but dynamically hydrophobic behavior. **A. Hozumi**, T. Sato, C. Urata, S. Nakamura, R. Archer

4:50 132. Atmospheric aging increases rigidity in sea spray aerosol proxy films. **K.A. Carter Fenk**, H.C. Allen

5:10 133. Methodology to enhance absorption of thin films on ice using reflection-absorption infrared spectroscopy (RAIRS). **J. Maurais**, P. Ayotte

Section F

Pennsylvania Convention Center
121A

Basic Research in Colloids, Surfactants & Interfaces

Biomolecular Systems

R. Nagarajan, *Organizer*

S. (. Das, *Presiding*

1:30 134. Monitoring cellular trafficking of therapeutic nucleic acids in the real-time. **M. Arifuzzaman**, J.L. Rouge

1:50 135. Self-assembly of bacterial quorum sensing signals in aqueous media: Integrated experimental and molecular dynamics study. **C. Gahan**, S.J. Patel, M.E. Boursier, K.E. Nyffeler, N.L. Abbott, H.E. Blackwell, R. Van Lehn, D.M. Lynn

2:10 136. Micromotors for temporal control of signaling in bacterial cells. **S.(. Das**

2:30 137. Dynamic behavior of molecules on the lipid membranes studied with second harmonic generation and fluorescence. **W. GAN**, S. Chen, Y. Hou, J. Li

2:50 138. Liposomes encapsulating methotrexate: Methods for production and quantification. **D. Guimarães**, J. Noro, A. Cavaco-Paulo, E. Nogueira

3:10 139. Mapping the hydrophobicity and amino-acid affinities of monolayer-protected gold nanoparticles using molecular simulations. **A.K. Chew**, B.C. Dallin, R. Van Lehn

3:30 140. Characterization of oligo-peptide/nucleotide-based coacervates in various pH and salt concentration. **S. Choi**, C.D. Keating

3:50 141. Computationally designed coiled coil peptides as model charge-patterned colloidal particles. **N. Sinha**, R. Misra, R. Guo, C.J. Kloxin, J.G. Saven, G.V. Jensen, D.J. Pochan

4:10 142. Microfluidic production of biomimetic water-in-oil emulsion droplets utilizing aqueous phase separation. **C. Crowe**, C.D. Keating

4:30 143. Penetration mechanism through the stratum corneum depending on the structure of microemulsions. **M. Sakuragi**, K. Hamamatsu, S.B. Hasnol, S. Tsutsumi, K. Kusakabe

4:50 144. Application of sophorolipid butyl ester as an antimicrobial surfactant. **X. Wang**, R.J. Lin, R.A. Gross

Section G

Pennsylvania Convention Center
121B

ACS Award for Research at an Undergraduate Institution: Symposium in honor of Kerry Karukstis

Cosponsored by PROF
R. Nagarajan, *Organizer*
M. R. Mackiewicz, L. Tribe, *Presiding*

1:30 Introductory Remarks.

1:35 145. Langmuir monolayers of membrane lipids as model systems for investigating the mechanisms behind the healing properties of commercial natural products. **A.L. Sostarecz**

2:00 146. Studies of surface chemistry of hybrid porous materials for tuning drug delivery efficacy and efficiency. A. Bui, T. Nguyen, G. Alfarhat, A. Sua, H. Pham, S. Guillen, K. Ramos, L. Carachure, **F. Tian**

2:25 147. Solving the mystery between silver and silver nanoparticles: Who's toxic?. **M.R. Mackiewicz**

2:50 148. Changes without exchanges: On-particle ligand chemistry with purpose-designed, as-synthesized ligands. **J.S. Niezgoda**

3:15 149. Reverse Micelles as simple model systems to investigate photophysical properties of probe molecules and biomolecule dynamics. **R. Nayak**

3:40 Intermission.

3:50 150. Synthesis and characterization of “responsive” supramolecular nanocomposite materials for health and bio-inspired energy applications. **J.J. Keleher**

4:15 151. Bottom-up assembly of surface-anchored metal-organic framework thin films. **M.E. Anderson**

4:40 152. Self-assembly, mechanical and thermal properties of molecular gels derived from simply structured molecules as low molecular mass gelators. **A. Mallia**

5:05 153. Investigating novel colloidal sol-gel feedstocks for fabricating 3D-printed functional glass materials. **J.F. Destino**, P.S. Palencia, A.C. Vahle, C.J. Jayson, S.T. Fernandez, B.T. Nguyen

Section H

Pennsylvania Convention Center
103C

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

Interfaces

H. Dai, J. I. Siepmann, *Organizers*

E. Borguet, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 154. Modeling of interfaces involved in sustainable energy technologies. **E.A. Carter**

2:05 155. Domain formation in charged polymer vesicles. K. Chakraborty, **S. Loverde**

2:35 156. Ionic liquid mixtures at polar and apolar interfaces. **W.V. Karunaratne**, C.J. Margulis

2:55 157. Hydrophilic/hydrophobic hydration at mineral-water and semi conductor-water interfaces revealed by DFT-MD simulations coupled to sum frequency generation vibrational spectroscopies. **M.P. Gaigeot**

3:25 Intermission.

3:40 158. Electron traps, screening, and transport at liquid-solid interfaces. **R.C. Remsing**

4:10 159. Structure and chemistry of aqueous TiO₂: Insights from simulations. **A. Selloni**

4:40 160. Investigation of α -alumina(0001)/water interface in acidic or basic solutions using SCAN functional. **R. Wang**, M. DelloStritto, V. Carnevale, M.L. Klein, E. Borguet

5:00 161. Atomistic and spectroscopic studies of aqueous:solid interfaces. **F. Geiger**

Section I

Pennsylvania Convention Center
113B

Semiconductor Surfaces: From Chemistry & Function to Applications

Surface Functionalization

S. Schofield, A. V. Teplyakov, *Organizers*
L. Gundlach, *Presiding*

1:30 162. Semiconductor surface functionalization: From self-assembly to photoinitiated film growth. **S.F. Bent**

2:00 163. Semiconductor surface chemistry beyond thermal activation: Surface reactions on Si(001) controlled by electronic and vibrational excitation. **M. Durr**, G. Mette, A. Adamkiewicz, M. Reutzel, U. Koert, U. Höfer

2:30 164. Gram-scale synthesis of functionalized crystalline silicon nanoparticles. A. Van den Boom, S. Pujari, **H. Zuilhof**

3:00 Intermission.

3:20 165. Versatile, scalable monolayer functionalization of carbon-based materials by radical-initiated grafting. Y. Zhang, A. Abbaspour Tamijani, B. Zhi, C.L. Haynes, S.E. Mason, **R.J. Hamers**

3:50 166. Physical passivation of silicon surfaces. **R.L. Opila**, M. Chen, J. Hack

4:20 167. One, two, many: From mono- and bifunctional molecules to multilayer structures on semiconductor surfaces by electronic structure theory. **R. Tonner**

Section J

Pennsylvania Convention Center
115A

Bioconjugation of Colloids

L. Liz Marzan, W. J. Parak, *Organizers*
N. Feliu Torres, *Organizer, Presiding*

1:30 168. Proximity-driven cell surface conjugation of nanoparticle by a combination of metabolic labeling and SPAAC. **B. De Geest**, A. Lamoot

2:00 169. Development of polyzwitterion that responds to tumorous pH for effective delivery of nanomaterials to the deeper site in the tumor tissue. **H. Takemoto**, A. Awaad, T. Nomoto, M. Matsui, N. Nishiyama

2:15 170. Nanobiosensors for disease biomarker detection. **J. Budhathoki-Uprety**

2:30 Intermission.

2:45 171. Lateral flow assays with CdSe nanocrystals. **P. Mulvaney**

3:15 172. Promotion or prevention of protein corona around nanocolloids: Role of the surface coating. W. Perng, G. Palui, W. Wang, **H.M. Mattoussi**

3:30 173. Polymer-based bioorthogonal nanocatalysts for the treatment of bacterial biofilms. **R. Huang**, C. Li, J.M. Makabenta, V.M. Rotello

3:45 Intermission.

4:00 174. Self-Assembly of biomimetic nanoparticles with amyloid peptides. **N. Kotov**, J. VanEpps, A. Violi, P. Elvati, Y. Wang, J. Soukar

4:30 175. Spectroscopic investigation of gold nanoparticle-protein interactions. **K.D. McConnell**, O.C. Williams, E.R. Chappell, R.G. Manns, N. Fitzkee

4:45 176. Novel approaches for quantum dot sensing. **H. Weller**

Polymer Colloids: Synthesis, Analysis, Modeling & Application

Sponsored by POLY, Cosponsored by ANYL, COLL and PMSE

SUNDAY EVENING

Section A

Pennsylvania Convention Center
Exhibit Hall A

Acoustically-Active Colloids for Imaging & Therapy

A. P. Goodwin, J. V. Jokerst, E. P. Kharlampieva, *Organizers*

5:30 - 7:30

177. PET-guided drug delivery from ultrasound-sensitive multilayer microcapsules. **C.R. Caviedes**, A. Alford, M. Ducharme, V.A. Kozlovskaya, S. Lapi, E.P. Kharlampieva

178. Investigating the behavior of charged liposomal encapsulation on acoustically active colloidal particles. **T.C. Kinard**, S.P. Wrenn

Section A

Pennsylvania Convention Center
Exhibit Hall A

Amphiphilic Per- & Poly-fluoroalkyl Substances: Solution & Interfacial Phenomena

P. Alexandridis, D. Bedrov, D. D. Dionysiou, M. Tsianou, *Organizers*

5:30 - 7:30

179. Langmuir trough studies of the interactions between per- and polyfluoroalkyl substances (PFAS) and a model cell membrane. **H. Paneth**, E.J. Robertson, L. MacManus-Spencer

Section A

Pennsylvania Convention Center
Exhibit Hall A

Bacterial Interactions with Soft Materials

D. D. Bendejacq, D. Lee, M. M. Santore, *Organizers*

5:30 - 7:30

180. Polyacrylate microgels as antimicrobial agents. **B. Sharma**, C. Clem, S. Striegler

181. Bacterial adhesion and cell-envelope deformation during early-stage *S. aureus* biofilm formation. J. Gu, T. Chou, **M. Libera**

182. Investigation of bacterial oxidative stress induced by lithium cobalt oxide nanosheets. **M. Gari**, P. Lemke, H.K. Lu, T. Pho, E. Laudadio, R.J. Hamers, V. Feng

183. Engineering polymeric surfaces to combat bacterial adhesion with tunable nanostructure and stiffness. **R. Tan**, N.R. Marzolini, Y. Jang

Section A

Pennsylvania Convention Center
Exhibit Hall A

Basic Research in Colloids, Surfactants & Interfaces

R. Nagarajan, *Organizer*

5:30 - 7:30

184. Understanding the roles of hollow silica in methane hydrate formation close to room temperature. **P. Rangsunvigit**

185. Designing phase diagrams of two-dimensional colloids. **L. Padilla Salas**, A. Ramirez-Hernandez, A. Benavides Obregon, J. Perez Armas, J. Quintana Hinojosa

186. Gold-polymer nanocomposites as highly reactive catalysts in homocoupling reactions. **J.A. Lartey**, P.N. Eyimegwu, W. Jang, H. Byun, **J. Kim**

187. Unique method for the phase transfer of aqueous gold nanoparticles to organic solvents. **E. Cook**, G.K. Longia, G.K. Longia, Q.R. Johnson, B.P. Chauhan

188. HPLC analysis of mono-, di-, and triglycine as a solvent for life. **A. Lee**

189. Interaction of β -lactoglobulin with lauryldimethylamine oxide and binary surfactant mixtures. **K. Thompson**, **E. Danielson**, **E. Caraballo-Torrealba**, J.T. Boock, J. Berberich

190. Effects of characteristic of CO₂ flooding crude oil on foaming and defoaming behaviour. **Q. Zhang**, L. Zuo, C. Wu, C. Sun

191. Absorption IR spectroscopy tracks the effect of gold nanoparticles on the ordering of phospholipids. K. Kalloo, S. Finn, N. Escoffery, Q. Lu, **R. Helburn**

192. Two dimensional surfactants and porous composite foams: Graphene and boron nitride. **S.P. Ward**

193. Microstructure design of CTAC:FA and BTAC:FA lamellar gels for optimized rheological performance utilizing automated formulation platform. **A. Davies**, S. Amin

- 194.** Engineering surface activity and bulk rheological performance through controlled interactions of biopolymers with biosurfactants. **A.M. Benhur**, s. pingali, S. Amin
- 195.** Investigating the influence of polysorbate 20/80 and poloxamer P188 on bovine serum albumin and lysozyme aggregation, rheology & interfacial properties. **F. Begum**, S. Amin
- 196.** Progressive approach on inactivation of bacteria using nanostructured composites. J.L. Liu, **Y. Olaseni**, **S. Brock**, L. Zhang, S. Bashir
- 197.** Snowball-like sweeping removal of dropwise condensation propelled by gradient electric field. **z. chenglin**
- 198.** Aggregation of gold nanoparticles induced by amino acids: Enhancement of colorimetric response by Cu^{2+} . **O.A. Han**, T. Nguyen, M.O. Adenusi, E. Lim, S. Lee, J. Park
- 199.** Salt-induced diffusiophoresis of a neutral micelle. **E. Cruz**, O. Annunziata
- 200.** Withdrawn
- 201.** Targeting of invading pathogenic bacteria using biorthogonal nanozymes. **A. GUPTA**, J. Hardie, J.V. Makabenta, R. Huang, R. Milan, R. Goswami, M.E. Farkas, V.M. Rotello
- 202.** Controlling optical properties of complex emulsions via γ -cyclodextrin degradation for colorimetric sensing applications. **A.P. Saunders**, L.D. Zarzar
- 203.** Exploring the impact of β -cyclodextrin infused cellulose-based composites for the remediation of persistent organic pollutants. **F.M. Byrne**, **A. Caridi**, J.J. Keleher
- 204.** Impact of formamide osmolytes on water in confinement: pH at the nanoscale. **L. Brake**, B.L. Gourley
- 205.** Nanoparticle-enabled, waveguide-based, mid-infrared sensor for selective detection of gases. **D. Al Hussein**, J. Zhou, S.A. Sukhishvili, P. Lin, R. Gutierrez-Osuna
- 206.** Functionalizing fabrics and textiles with giant polymer and lipid vesicles. **V. Girish**, A. Subramaniam
- 207.** Preparation, gelation and DNA binding studies of N-(acridin-9-yl)alkanamides as low molecular mass gelators. **S. Ndiaye**, N.Y. Forlemu, A. Mallia
- 208.** Synthesis, self-assembly, gelation studies of anthraquinonylalkanamides based low molecular mass gelators. **E. Lee**, T. Dairo, A. Mallia

Pennsylvania Convention Center
Exhibit Hall A

Bioconjugation of Colloids

N. Feliu Torres, L. Liz Marzan, W. J. Parak, *Organizers*

5:30 - 7:30

209. Development of gold nanorod-peptide nanocomposites for phototriggered drug release to tumor cells. **R.E. Daso**, I.A. Banerjee

210. Investigating position-dependent coupling between a fluorescent molecule and plasmonic nanoparticle in super-resolution imaging. **B. Paranzino**, K. Willets

211. Using defocused images to investigate fluorophore-plasmon coupling interactions and their relation to localization accuracy in super-resolution imaging. **A. Crawford**, K.A. Willets

212. Investigating the reversibility of protein adsorption on gold nanoparticles and the role of free sulfhydryl. **A.O. Awotunde**, S. Okyem, J.D. Driskell

213. Antimicrobial-loaded nanosponges for synergistic treatment of multidrug-resistant bacterial biofilms. **A. Nabawy**, C. Li, J.M. Makabenta, V.M. Rotello

214. Nanoparticles for surface enhanced Raman scattering detection of cell surface proteins. **C. Pao**, C.M. Maclaughlin, **G.C. Walker**

Section A

Pennsylvania Convention Center
Exhibit Hall A

Biomaterials & Biointerfaces

J. Kaar, J. D. Schiffman, *Organizers*

5:30 - 7:30

215. Exploring the interactions of ionic-liquid-peptide nanofiber gels and their potential biological applications. **R.E. Daso**, M. Whalen, M.F. Thomas, I.A. Banerjee

216. Elucidating design principles of ionic liquids for transdermal drug delivery. **E. Tanner**, S. Mitragotri

- 217.** Quantifying of gold nanoparticle based cytotoxicity induced by ionizing and visible radiation. **S.V. Jenkins**, S. Jung, R.P. Dings, R.J. Griffin
- 218.** Directional liquid transportation control on biomimetic surface. **Z. Dong**
- 219.** Kinetics of lipid monolayer assembly in the presence of MUS:OT amphiphilic nanoparticles. **C.M. Basham**, S. Sarles
- 220.** Peptoid microsphere coatings: Effects of helicity, temperature, pH, and ionic strength. **J. Roberts**, G.R. Perez-Bakovic, S.L. Servoss, K. Brinza, B. Colford, M. Joyce
- 221.** Poly(oxonorborene)-coated CdTe quantum dots as antibacterial agents. **D.N. Williams**, J. Saar, V. Bleicher, S. Rau, K. Lienkamp, Z. Rosenzweig
- 222.** Investigating colloidal transport in biological polymer solutions under shear and the ensuing CaOS. **J.A. Ott**, T. Bhattacharjee, D. Amchin, C.A. Browne, S.S. Datta
- 223.** Enzyme encapsulation in porous silica nanoparticles for potential therapeutic applications. **A.Y. Heble**, K.A. Nasr, A. Mulgaonkar, A.M. Armstrong, X. Sun, R.F. Mattrey, J. Lux
- 224.** Understanding the wicking of blood in paper-based diagnostics. **M. Hertaeg**, J. Berry, R.F. Tabor, G. Garnier
- 225.** Hydrazide-modified hyaluronic acid enables the safe-by-design engineering of antimicrobial metal-based nanomaterials. **G. Ferreres Cabanes**, S. Pérez-Rafael, K. Ivanova, J. Torrent-Burgués, T. Tzanov
- 226.** One-step ultrasound assisted synthesis of farnesol nanoparticles for bacterial eradication and disruption of drug-resistant biofilms. **A. Ivanova**, K. Ivanova, L. Fiandra, P. Mantecca, T. Catelani, T. Tzanov
- 227.** Grafting hyperbranched polyester on the energetic crystals: Enhanced mechanical properties in highly-loaded polymer based composites. **C. Zeng**, F. Gong, Z. Yang
- 228.** Lignin-mediated sonochemical synthesis of biocompatible tellurium nanoparticles with antimicrobial properties. **A. Morena**, A. Bassegoda, T. Tzanov
- 229.** Multilayered enzyme/antimicrobial peptide decorated silica nanoparticles for controlling bacterial infection. **A. Morena**, A. Ivanova, K. Ivanova, T. Tzanov
- 230.** Machine-learning and wavelet transform assisted on-chip electrical monitoring of real-time “soft” and “hard” protein corona formation in carbon nanoparticles. **I. Srivastava**, M. Khan, K. Dighe, K.Y. Wang, M.M. ALAFEEF, T. Banerjee, T. Ghonge, L. Grove, R. Bashir, D. Pan
- 231.** Modulating nanoparticle size to understand factors affecting hemostatic efficacy and maximize survival. **C. Hong**, N. Kokoroskos, Y. He, W. Joo, B.D. Olsen, P.T. Hammond

- 232.** Self-assembled microsphere-on-microgel array for nucleic acid detection. **F. Teng**, X. Wu, M. Libera
- 233.** Polymer modification of bioprosthetic heart valves to mitigate structural degeneration. **A. Zakharchenko**, S. Keeney, S. Stachelek, I. Alferiev, R. Levy
- 234.** "Smart" zero-valent iron delivery nanosystem for MRI guided cancer therapy. **X. Sun**
- 235.** Monitoring drug loading and releasing in MIL-88B(Fe) films modified gold substrates using surface plasmon methods. **T. Nguyen**, F. Tian
- 236.** Synthesis and targeting of ubiquicidin linked Ag-Cu nanoparticles to *S. aureus* in osteoblast infection. **T. Abdulrehman**, S.M. Qadri, Y. Haik
- 237.** Nano-size dependent aggregation of Amyloid beta 1-40 peptide-coated gold colloid. **A. Ichiki**, K. Yokoyama
- 238.** Hypersonic-assisted thermodynamic re-organization of silica microparticles on inkjet-printed protein films. **S. Gopalakrishnan**, S. Pan, A. Fernandez, J. Lee, L. Wang, S. Thayumanavan, X. Duan, V.M. Rotello
- 239.** Sharkskin mimicked polymeric membranes. S. Rostami, U. Ercan, I. Tekkesin, **B. Garipcan**
- 240.** Surface modification of silk fibroin to control protein deposition. **D.L. Heichel**, N.H. Vy, D.H. Adamson, K.A. Burke
- 241.** Using iron-containing metal-organic frameworks as drug-eluting stent coating. **A. Bui**, F. Tian
- 242.** Measuring the interaction of polyglutamine peptides with lipid membranes. **J. Trilleras**, S.L. Frey
- 243.** Functionalized polystyrene nanoparticles alter the structure and stability of model cell membranes. **P. Ashe**, D. Van Doren, S.L. Frey
- 244.** Effect of biomimetic additives on pore structure modulation in alginate-based hydrogels for applications in wound management materials. **H.R. Lange**, A.L. Dudek, A.N. Linhart, W.E. Chura, J.J. Keleher

Section A

Pennsylvania Convention Center
Exhibit Hall A

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*

5:30 - 7:30

245. Elastic moduli and collective dynamics of phospholipids are revealed by solid-state ^2H NMR spectroscopy. T.R. Molugu, S. Chakraborty, R. Ashkar, H.I. Petrache, **M.F. Brown**

246. A_{2A} adenosine receptor activation studied by all-atom simulation. **L. Chen, E. Lyman**

247. Complex coacervation as a model for membraneless organelles: Effects of macromolecular crowding on the formation and behaviors of polypeptide coacervates. **S.E. Chapman**, A. Marianelli, B. Miller, C.D. Keating

248. Comparison of antipsychotic drug and peptoid adsorption to lipid membranes using second harmonic generation. **J. Dayton**, G.E. Gadbois, A. Krishnamurthy, C. Read, G.Y. Stokes

249. Carbon accumulation at model biological interfaces: Changes to lipid film structure and organization. **N. Shaikh**, R.A. Walker

250. Designing self-assembled high-efficiency lipid nanodiscs for the encapsulation of graphene family materials. **D. Hoy**, M. Nieh

251. Development of minimal actin cortices (MACs) on lipid bilayers for ion channel electrophysiological recordings. **T. Larsen**, A.J. Smith, D. Burden

252. Novel lipids based on cyanuric chloride for drug, gene, and vaccine delivery. **D. Nardo**, V. Venditto

Section A

Pennsylvania Convention Center
Exhibit Hall A

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

5:30 - 7:30

253. Copper cluster nanoparticles protected using glutathione. **A.V. Rubio**, G.P. Villa, M. Alvarez, G. Baghdasarian

254. Formation of wormlike micelles with tetradecyltrimethylammonium bromide and 4-halogenbenzoates. **M.Z. Jora**, R.N. de Souza, E. Sabadini

- 255.** General approach to the synthesis of hetero-dimers of metal nanoparticles through site-selected protection and growth. **J. Qiu, Y. Xia**
- 256.** Lead-free, zero-dimensional perovskite-analogue nanocrystals with rich post-synthetic transformation reactions. **H. Yang, T. Cai, E. Liu, K. Hills-Kimball, J. Gao, O. Chen**
- 257.** Use of digestive ripening to synthesize quantum dot alloy nano particles. **S.F. Ehsan, D. Khon, M. Zamkov**
- 258.** Submicrometer nitridated titania spheres with extraordinary plasmonic photothermal conversion efficiencies for solar seawater desalination. **X. Cheng, X. Bai, J. Wang**
- 259.** *In vivo* editing of macrophages through systemic delivery of CRISPR/Cas9 RNP-nanoparticle nanoassemblies. **Y. Lee, D.C. Luther, R. Mout, Y. Liu, L. Castellanos-Garcia, A. Burnside, G. Tonga, J. Hardie, R.W. Vachet, V.M. Rotello**
- 260.** Spatially-confined CdSe nanowires in mesopores. **R. Cai, Y. Chang, K. Tsai, Y. Liu**
- 261.** Platinum recycling for synthesis of Pt-based electrocatalysts. **T. Nakamoto, R. Seki, S. Yokoyama, H. Takahashi**
- 262.** One pot route to functionalized gold nanogels. **B.P. Chauhan, G.K. Longia, A. Patel, L. Pech**
- 263.** Morphology- and size-dependence of pressure-induced phase transition in semiconductor nanocrystals and their self-assembled arrays. **L. Meng, H. Fan, M.J. Lane, T. Ao, B. Stoltzfus, M. Knudson, D. Morgan, A. Kevin, Y. Qin**
- 264.** Magnetic iron oxide nanocubes: Effect of annealing on the formation of a monolayer. **A. Chinniah, H. Jayathilake**
- 265.** Controlling atom arrangement in ternary metal chalcogenide nanoparticles using precursor oxidation state. **E.A. Eikey, X. Gan, D. Kaseman, C. Murphey, S. Crawford, K. Johnston, S. Yazdi, J. Millstone**
- 266.** Bottom-up assembly of DNA: Silica nanocomposites into micrometer-sized hollow spheres. **Y. Hu**
- 267.** Size mapping of PLGA nanoparticles as a function of organic and water compositions. **M. De Guzman, N. Baluyot-Reyes, Y. Ba**
- 268.** Synthesis of colloidal gold nanoplates and their plasmon coupling with gold nanospheres. **R. Ai, X. Cui, J. Wang**
- 269.** Stability limits of biologically relevant nanoparticle coatings under varying chemical environments. **C.J. Munro, N. Rizk, M.N. Martin**

- 270.** Colloidal nanostructures through polyol synthesis and their functional assemblies for SERS sensing applications. **F. Khatoon, N.R. Visaveliya, K. McCoy, J. Xu, D.M. Eisele**
- 271.** Determine growth kinetics of colloidal nanoparticles by a fully quantitative model. **S. Wu, Y. Sun**
- 272.** Synthesis of heterostructured nanoparticles in ionic liquids. **L. Hill, A. Antle, A. Jaybhaye**
- 273.** Formation of non-noble metals in organic liquids via laser ablation. **C. Trout, P. Kumpf, J.C. Griepenburg, S.M. O'Malley**
- 274.** Synthesis and characterization of functionalized nanocomposite abrasive particles for chemical mechanical planarization (CMP) applications. **C. Saucedo, A. Mikos, J.J. Keleher**
- 275.** *In situ* monitoring of retrograde crystallization of perovskite-phase MAPbI₃. **R.F. Barrett, A.T. Fafarman**
- 276.** Amphiphilic polymeric micelles for delivery of docetaxel and carbonic anhydrase inhibitors. **B. Alshahrouri, L. Lam, M.A. Ilies**
- 277.** Electrochemical controllable preparation of preferentially oriented porphyrin MOF films and their electrocatalytic properties. **Q. Li, F. Bai**

Section A

Pennsylvania Convention Center
Exhibit Hall A

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

E. Borguet, H. Dai, J. I. Siepmann, *Organizers*

5:30 - 7:30

- 278.** Molecular dynamics study of fiber-epoxy interphase with monolayer silane. **S. Chowdhury, R. Prosser, T.W. Sirk, J. Gillespie**
- 279.** Evaluation of adsorption characteristics of alpha olefin sulfonate and internal olefin sulfonates at oil–water interfaces: Molecular dynamics simulation study. **J. Li, J. Jia**
- 280.** Computational investigation of CO₂/CH₄ separation in novel mechanically robust 3D graphene-supported ionic liquid membranes. **F. Rahmani, s. Nouranian, Y. Chiew**

281. Modelling patterns in dried blood drops for diagnostics. **M. Hertaeg**, A.F. Routh, R.F. Tabor, G. Garnier

282. Field-aware interfaces in continuum solvation. **M. Truscott**

283. Molecular dynamics simulations of CO₂ foam film stabilized by different kind of surfactants. **C. Fan**, B. Peng, J. Jia

284. Molecular dynamics study on the micellization of carboxylate surfactants. **X. Zhang**, M. Zhu, J. Kindt

Section A

Pennsylvania Convention Center
Exhibit Hall A

Fundamental Research in Colloids, Surfaces & Nanomaterials

R. Nagarajan, *Organizer*

5:30 - 7:30

285. Particle size distribution characterization conditions for metatitanic acid by photon correlation spectroscopy. **C. Tian**

286. Synthesis and characterization of L₁₀ bimetallic and trimetallic nanocrystal catalysts for electrocatalytic oxygen reduction reaction. **J. Lee**, D. Jishkariani, A. Koul, Y. Zhao, S. Najmr, D. Rosen, J.M. Kikkawa, E. Stach, C.B. Murray

287. Docetaxel nanomedicine based on biologic-responsive polymers for glioblastoma chemotherapy. **C. Martins**, M. Araújo, J. Aylott, B. Sarmento

288. Influence of chemically-functionalized gold nanoparticles on emulsions of thermotropic liquid crystals. **K.J. Zabala Rodriguez**, D. Lynn, C. Acevedo

289. Speciating Ag(I) and AgNPs in the leachate of AgNP-impregnated fibers. **Z.J. O'Dell**, D.J. Boehmler, L. Ezra, K.R. Riley

290. Interactions of β -cyclodextrin modified gold nanoparticles with human serum albumin at single molecule level. N.M. González, R. Oyola, **N.V. Falcon**

291. Self-organization and swarm behavior in active matter: Combined computational-experimental analysis of the intelligence-information interplay. **C. Desgranges**, S. Sacanna, M.E. Tuckerman, P.M. Chaikin, J. Delhommelle

- 292.** Quasi-spherical gold nanoparticles synthesis and applications. L. Fanua, **K. Langford**, K. Meyers, S. Blama, **M. Devadas**
- 293.** Photolysis of organic dyes at the polymeric colloidal-aqueous interface. **P. Skelly**, M. Alsarrani, **Z. Lewis**, **L. Kaylor**, M. Subir
- 294.** Investigating lattice strain impact on the alloyed surface of small Au@PdPt core-shell nanoparticles. **B. Williams**, M. Yaguchi, W. Lo, C. Kao, L. Lamontagne, B. Sneed, C. Brodsky, L. Chou, C. Kuo, C. Tsung
- 295.** Solid-phase synthesis as a strategy to investigate protein adsorption to gold nanoparticles. **E.T. Strandquist**, K. Tripathi, J.D. Driskell
- 296.** Durable lubricant-infused ZnO nanowire surfaces *via* capillary rise infiltration (CaRI). **H. Tran**, D. Lee, **D. Riassetto**
- 297.** Higher-order molecular and alignment control of self-assembling donor-acceptor columnar liquid crystals (DACLCs). **H. Wallace**, J.J. Reczek
- 298.** Metal mediated polymerization of various rhodanines to create new morphologies. **G.K. Longia**, M. Chauhan, S. Jaser, B.P. Chauhan
- 299.** Rapid phenotyping of cancer stem cells using multichannel nanosensor arrays. **A. Chattopadhyay**, Y. Geng, H.L. Goel, A. Mercurio, V.M. Rotello
- 300.** Closer look at confined water: Use of Overhauser Dynamic Nuclear Polarization to study nanoscale water dynamics in aerosol-OT reverse micelle model systems. **A.A. Beaton**, A. Guinness, S.V. Rhodes, E.R. Hard, J.M. Franck
- 301.** Ligand substitution on colloidal quantum dots: Mechanistic study. **S. Rolland**, E. Reasoner, N. Campbell, M. Wilker
- 302.** Optimization of polydopamine adhesiveness during thin film fabrication. **K.R. Kolozsvari**, W. Chen
- 303.** Atomic force microscopy (AFM) characterizations of semiconductor nanomaterials and solar cell electrodes. **K. Goshinsky**, Z.J. Li, C. Leason
- 304.** Elucidation of conditions for metastable poly(vinyl alcohol) thin films on polydimethylsiloxane substrates. **Y. Jiang**, W. Chen
- 305.** Preparation of stable poly(vinyl alcohol) thin films from aqueous solution on silicon wafer. **M. Minett**, W. Chen
- 306.** Optimizing AgGaS₂ nanocrystal thin films for photoelectrochemical hydrogen generation. **H. Worster**, S. Hughes

- 307.** Producing steam at room temperature with solar radiation and metal nanoparticles. **L. Huff, A. Weidner, J.J. Peterson**
- 308.** Ultrafast photo-induced processes in perovskite nanocrystals. **G. Ghosh, A. Patra**
- 309.** Impact of chemically functionalized gold nanoparticles on oil-water emulsion stability. **G. Sanchez, L. Capre, C. Acevedo**
- 310.** Air-stable n-type Fe-doped ZnO colloidal nanocrystals. **E. BUZ, D. Zhou, K.R. Kittilstved**
- 311.** Development of catalytic chromia-based aerogels. **F.T. Fitzgerald, M.K. Carroll, A.M. Anderson, B.A. Bruno**
- 312.** Investigation of structural changes in mixed-metal catalytic aerogels at elevated temperatures. **T.F. Andre, M.K. Carroll, A.M. Anderson**
- 313.** Nanostructured covalent organometallic polyhedron (COP) agents used to detect fingerprints from the non-porous surfaces. **P. Villarreal, J. Ocheltree, H. Zhang, S. Bashir, J.L. Liu**
- 314.** Characterizing optical transitions in inverted core/shell ZnSe/CdSe quantum dots. **E. Nagasing, J.J. Peterson**
- 315.** Removal of organic contaminants from water by using the polypropylene-based monoliths. **N. Baig, T.A. Saleh**
- 316.** Synthesis and characterization of conductive mesoporous silica. **E. Koh, C. Nguyen**
- 317.** Anchoring transitions induced by stimuli-responsive amphiphiles at the liquid crystal-water interface. **M. Shivrayan, M. Tsuei, N.L. Abbott, S. Thayumanavan**
- 318.** Electron-beam-induced orthogonal functionality in biotinylated poly(ethylene glycol) thin films. **X. Wu, F. Teng, M. Libera**
- 319.** Nickel-palladium phosphide catalysts for the selective hydrogenation of alkynes. **R.P. Lynch, M.E. Bussell**
- 320.** Surface modification of gold nanorods to enhance the detection of Hg^{2+} . **J. Crockett, T. Luan, J.E. Doebler, Y. Bao**
- 321.** Surface initiated atom transfer radical polymerization (SI-ATRP) for corrosion resistant surfaces on stainless steel 316L. **A.J. Rupprecht, E. Allego, E.S. Gawalt**
- 322.** Reservoir on a chip: Microfluidics for rapid study of viscosity of N_2 foams with brines of different ions content. **A. Gizzatov, Z. Yousif, S. Ayirala, A. Abdel-Fattah**

- 323.** Photocatalytic activity of hybrid metal/semiconductor nanostructures with varied morphologies. **R.M. Kosko, C.M. McGinn, V.M. Riveria,** R. Alam
- 324.** Eradication of cancer cells through combination therapy using bioorthogonal nanozymes and pro-drug. **A. GUPTA,** S. Fedeli, X. Zhang, R. Huang, V.M. Rotello
- 325.** Synthesis of InSe nanosheets and nanoparticles by semi bottom-up method and exposing them to human health relevant organisms. **S. Sengupta,** Z. Zheng, A. Davydov, Z. Rosenzweig
- 326.** Thermal treatment of collagen films in fluoruous media for enhancement of mechanical and enzymatic stability. **S. Gopalakrishnan,** L. Zhang, K. Li, L. Wang, Y. Han, V.M. Rotello
- 327.** Supported Ni-Au colloid precursors for active, selective, and stable alkyne partial hydrogenation catalysts. **E. Hand,** B.D. Chandler, J. Bruno, R.M. Rioux
- 328.** Aggregation and photophysical properties of cyanine dyes in confined reverse micellar environments. **M. Opolz,** N. Meaux, R. Nayak
- 329.** Plasmonic monitoring of DOTAP liposome fusion. **R. Beardsley,** I. Bruzas, W. Lum, R.M. Cary, L. Sagle
- 330.** Direct cytosolic protein delivery using versatile nano-carrier platform. **R. Goswami,** R. Mout, M. Ray, Y. Lee, G. Yesilbag Tonga, D.C. Luther, V.M. Rotello
- 331.** Investigating the interparticle spatial properties and phase behavior of DNA-mediated nanoparticle assemblies with incorporated temperature sensitive co-polymers. **B.C. Vithanage,** M.M. Maye
- 332.** Integration of nanofillers into 3D conducting polymer nanocomposites for enhanced mechanical and electrochemical properties: Applications in energy storage and conversion. **P. Doshi,** K.J. McDonald, D. Bahaghighat, P.L. Sheehan, P.C. Haney, H.L. Moore, E.A. Nagelli
- 333.** Influence of lipid composition on physicochemical properties, stability, loading and interaction with amphiphilic proteins in phospholipid-based liposomes. **S.A. Khan,** R. Nguyen, M.A. Ilies
- 334.** Electronic and hydrodynamic properties of Texas red dyes in confined reverse micellar environments. **S. McBride,** R. Nayak

Section A

Pennsylvania Convention Center
Exhibit Hall A

Metal Oxides, Metal Organic Frameworks (MOFs) & Polyoxometalates: Heterogeneous Reactivity & Catalysis under Environmentally Relevant Conditions

G. Peterson, B. T. Rasley, J. H. Wynne, *Organizers*

5:30 - 7:30

335. Enhancing enzyme immobilization on graphene oxide surface using metal-organic frameworks for large-substrate biocatalysis. **J. Farmakes, I. Schuster**, Y. Choi, B. Chen, Z. Yang

336. Combining experiment and density functional theory to understand transition metal oxide reduction mechanisms in chemical-looping combustion. **L.J. Augustine**, B.G. Hudson, H.A. Alalwan, D.M. Cwiertny, E.G. Gillan, S.E. Mason

337. Hammett studies on supported Au nanoparticle catalysts. **M. Bajomo**, J. Sample, T.N. Whittaker, B.D. Chandler

338. Effect of thermal activation on analyte uptake capacity of zirconium-based metal organic framework. **R. McDonnell**, V. Devulapalli, I. Goodenough, T. Luo, M.L. De Souza, N.L. Rosi, E. Borguet

339. Confined fabrication of double perovskite quantum dots in metal-organic framework: Applications in solar photovoltaics. **N. Das**

340. Understanding the role of intrinsic and extrinsic defects on acetone interactions with isorecticular zirconium metal-organic frameworks. **C.R. Harris**, I. Goodenough, V. Devulapalli, P. Svitak, M. Boyanich, R. McDonnell, M.L. De Souza, T. Luo, N.L. Rosi, E. Borguet

341. Thermal analysis of metal-organic frameworks and their interactions with simple molecules. **P. Svitak**

Section A

Pennsylvania Convention Center
Exhibit Hall A

Nanomaterials

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, *Organizers*

5:30 - 7:30

342. Highly sensitive colorimetric immunoassay utilizing enzyme-catalyzed Ag growth on surface of Au nanoparticle-assembly SiO₂ structure. **E. Hahm**, B. Jun

- 343.** All-natural crosslinked nanosponges for the topical treatment of wound biofilms. **J.V. Makabenta**, A. Nabawy, C. Li, R. Landis, D. Archambault, Y. Liu, A. Gupta, S. Schmidt-Malan, R. Patel, V.M. Rotello
- 344.** Deposition and characterization of peptoid-gold nanoparticle composite films assembled at fluid interfaces. **A.K. Mahony**, E.J. Robertson
- 345.** Investigation of nanomaterial's safety through transpiration study in plants. **S.H. GARCIA**, K. Yeung, **T.N. Dy**
- 346.** Furthering understanding of the impact of ligand composition on protein corona formation around Au nanoparticles. **S. Hoff**, D. Di Silvio, S. Moya, R.F. Ziolo, H. Heinz
- 347.** Biomimetic 2D template mediated recognition and stabilization of peptide form super α -helices. **S. PANDIT**
- 348.** Impact of hydrophobicity/hydrophilicity on PAMAM dendrimer-lipid bilayer interactions. **L.K. Chong**, J. Giancaspro, P. Scollan, J. Rosario, E. Perez, A. Liles, C.A. Dougherty, S. Lee
- 349.** Custom PLA/PLGA nanoparticles for bio-applications. **D. Jishkariani**
- 350.** Effect of peptoid monolayers on functionalized gold nanoparticle film assembly at the oil-water interface. **E.V. Whitney**, E.J. Robertson
- 351.** Optimizing gold nanoparticle-fluorophore interactions to minimize fluorescence quenching. **F. Zhou**, A. Caldwell, M.R. Mackiewicz
- 352.** Novel near infrared molecular probe provides rapid *in vivo* readout of thrombin activation. **K. Ha**, J.R. McCarthy, K. Nagi, S. Wah, J. Schoenecker, S. Moore
- 353.** Comparative assessment of different lipoplex pegylation strategies. **M.A. Sufian**, M.A. Ilies
- 354.** Competition of organic ligands on gold nanostars. **A.J. Trowbridge**, C. Jiang, Y. Huo
- 355.** Magneto-optical characterization of magnetic nanoparticles confined in a lyotropic liquid crystalline matrix. **M.E. Tousley**, N. Fried, W. Li, M. Syed
- 356.** Mesoporous organosilica nanotubes templated by judiciously selected Pluronic surfactants. **S. Zhang**, O. Oredipe, G. Farid, M. Kruk
- 357.** Tuning sol-gel GeO₂ and core-shell GeO₂-SiO₂ reaction conditions to optimize particle properties for use in 3D printing glass optics. **P.S. Palencia**, A.C. Vahle, C.J. Jayson, J.F. Destino
- 358.** Direct functionalization of graphene nanoplatelets and their effect on dispersion and mechanical properties. **M. Wunch**, S. Mahmood, D. Yang

- 359.** Large-scale patterned plasmonic nanoparticle assemblies. **N. Chiang**, L. Scarabelli, G. Vinnacombe, T.D. Young, S.J. Jonas, P.S. Weiss
- 360.** Controlled synthesis and transfer of Ti₃C₂T_x MXene nanosheets with SERS performance. **M. Garcia Cervantes**, L. Tej, S. Huang, F. Yan
- 361.** Synthesis of colloidal quantum dot-based heterostructures for photon upconversion. **T. Welsch**, J. Cleveland, E. Chen, C.C. Milleville, K. Lennon, J. Zhang, J. Bork, J. Zide, M. Doty
- 362.** Thermodynamic stability of perovskite-phase CsPbI₃ enforced by nanotemplating. **A. Chakrabarti**, A. Fafarman
- 363.** Amine functionalization and *in situ* reduction of carbon nanotubes nanonetworks for solar electrode applications. **Y. Zhu**, J.D. Kehlbeck, M.E. Hagerman
- 364.** Computationally guided synthesis of manganese substituted ferrites. **Z. Yan**, S. Spence, A. Chaluvadi, E. Brandberg, S. Fitzgerald, T. Crawford, R.B. Getman, O.T. Mefford
- 365.** Atomic-scale imaging of a free-standing monolayer clay mineral nanosheet by aberration-corrected scanning transmission electron microscopy. **I. Akita**, Y. Ishida, T. Yonezawa
- 366.** Chemically deposited and photodeposited Ag nanoparticles on rutile TiO₂. **Y. Zou**, T. Maxson, T.S. Zubkov
- 367.** Metal nanocluster modify the band gap and maintain the ultrathin nature of semiconducting two-dimensional materials. F. Yan, **C. Liao**, G. Wu, S.B. Bach, M.A. Mahmoud
- 368.** Efficiency of Ni-Mo-P nanoalloys catalysts with various compositions and crystal structures towards hydrogen evolution reactions. **E. Eladgham**, D. Rodene, R.B. Gupta, I.U. Arachchige
- 369.** Microwave assisted synthesis of cesium lead halide nanoplatelets. **H. Zamani**, M.M. Maye
- 370.** Comparative study of the environmental exposure of common lithium ion cathode materials coated with iron oxide. **E. Haberland-Ervin**, E. Laudadio, R.J. Hamers

Section A

Pennsylvania Convention Center
Exhibit Hall A

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*

5:30 - 7:30

- 371.** Stimuli-responsive poly(4-vinylpyridine) hydrogel structure and hydration via neutron reflectometry. **W.T. Higgins**, V.A. Kozlovskaya, J. Ankner, E.P. Kharlampieva
- 372.** Toward sequential assembly of finite 1-D origami arrays of sensing nanostructures. **N. Shin**, S. Jafarvand, D. Neff, **M.L. Norton**
- 373.** Two dimensional structures from cobaltocenium-containing block copolymers by crystallization-driven self-assembly. **Y. Cha**, C. Tang
- 374.** Polymersome drug nanocarriers from temperature-sensitive poly(N-vinylcaprolactam) block copolymers. **V.A. Kozlovskaya**, Y. Yang, E.P. Kharlampieva
- 375.** Aggregation of amphiphilic naphthalene and perylene bisimides in water: Thermodynamic analysis. **T. Schlossarek**, P.P. Syamala, F. Wuerthner

Section A

Pennsylvania Convention Center
Exhibit Hall A

Semiconductor Surfaces: From Chemistry & Function to Applications

S. Schofield, A. V. Teplyakov, *Organizers*

5:30 - 7:30

- 376.** Molecular doping of Si(100). **E. Frederick**, I. Kolesnichenko, D.R. Wheeler, T.N. Lambert, A. Benavidez, S. Misra, G.T. Wang
- 377.** Reactions of boron- and nitrogen-containing compounds with Cl-terminated Si(100) surface. **D.R. Silva Quinones**, C. He, R.E. Butera, G.T. Wang, A.V. Teplyakov
- 378.** Functionalization of silicon with photo-sensitive carbene precursors for patterning monomolecular phosphorus-based dopant species. **P.R. Raffaele**, A. Shestopalov, G.T. Wang, E. Frederick
- 379.** Conducting polymer based potentiometric affinity biosensor. **L. Papammagari**, S.K. Manohar
- 380.** Understanding the mechanism of atomic layer etching of CoFeB alloy thin films using diketones. **M. Konh**, H. Chen, J. Xiao, A.V. Teplyakov
- 381.** Structure-function properties of WO₃ nanosheets. **M. Acikgoz**, Q. Li, H. He, M. Pavanello

Section A

Pennsylvania Convention Center
Exhibit Hall A

Surface Chemistry

S. L. Tait, *Organizer*

5:30 - 7:30

382. Building a budget friendly drop shape analysis system to be used on nanoparticle treated surfaces.

M. West, B. Veldman

383. Protein adsorption on grafted zwitterionic polymer thin films. **S.T. Ahmed**, D.E. Leckband

384. Investigation of 2-cyclohexenylcyclohexanone corrosion inhibitor as surfactant. **G. Ostapenko**

385. Temperature dependent investigation of thiolated DNA on gold nanoparticle arrays. **P.A. Reinhardt**, C.A. West, D.J. Masiello, K.A. Willets

386. Single-molecule optical imaging of electrochemical reactions on the surface of plasmonic nanoparticle electrodes. **N. Molina**, K.A. Willets

387. Simultaneous sonochemical functionalization of urinary catheters with biofilm matrix degrading amylase and antibacterial zinc oxide nanoparticles for prevention of bacterial infections. **A. Ivanova**, K. Ivanova, I. Perelshtein, A. Gedanken, T. Tzanov

388. Unusual behavior of a polymer bearing a guanidium analog. **S. Lteif**, J.B. Schlenoff

389. VSFS studies of glyoxal and its surface-active oligomers at the air-water interface. **B. Gordon**, L.F. Scatena, F. Moore, G.L. Richmond

390. Nanoscale chemical and mechanical imaging via peak force infrared microscopy. **L. Wang**, H. Wang, D. Jakob, X. Xu

391. Interactions between nanoparticles and extreme pressure additives: Toward high performance low viscosity lubricants. **M.B. Elinski**, P. LaMascus, L. Zheng, A. Jackson, R. Wiacek, R. Carpick

392. Modification of inorganic oxides with poly(hydridomethyl)siloxanes as a scaffold for mixed functional surfaces. **G. Fardella**, J.W. Krumpfer

393. Hydrophobization and acid resistance of silica surfaces through reaction with alternating carbosiloxane polymers. **J.W. Krumpfer**, C. Martin

394. Study of insulin interactions with lipids and the effects of pH on insulin aggregation using student-made Brewster angle microscope. **K.G. McLaughlin, S. Croslow**, A.L. Sostarecz, D.C. Crans

395. Determination of point of zero charge of perovskites and oxides using second harmonic generation. **K.T. Hoang, C.T. Rolleston**, T. Marshall, D. Louaas, E. Borguet

396. Calorimetric study of oxalate and citrate adsorption on hematite nanoparticles under different pH and ionic strength values. **E. Stroeve**, C. Clarke, H.A. Al-Abadleh, N. Kabengi

397. Surface chirality study of a manganese salen complex via internal heterodyne doubly-resonant sum-frequency generation spectroscopy. **J.L. Cartagena**, D. Miller, L.A. Velarde

MONDAY MORNING

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

R. Nagarajan, *Organizer*

S. Förster, M. V. Tirrell, *Organizers, Presiding*

R. Verduzco, *Presiding*

8:00 398. Hierarchical nanoparticle assemblies in thin films: Study kinetic effects. **T. Xu**

8:30 399. Nanoscale thin oxide films for nanoelectronics. **M.A. Morris**

9:00 400. Self-assembled stimuli-responsive copolymer colloids. **M.W. Urban**

9:30 401. Supramolecular polymorphism in aggregates of tetra-bay-acyloxy functionalized perylene bisimides. M. Hecht, L. Pawaret, T. Gerlach, **F. Wuerthner**

10:00 Intermission.

10:15 402. Self-assembly and interaction in polymer nanocarriers for drug delivery applications. **D. Lombardo**

10:45 403. Development of bottlebrush copolymers as surface-active additives. H. Mei, T. Laws, K. Miyagi, J.P. Mahalik, R. Kumar, G. Stein, **R. Verduzco**

11:15 404. Self-assembly of block copolymers to photonic crystals. **G. Miyake**

11:45 405. Pathway selection in metallosupramolecular polymers. **G. Fernández**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*
K. Gawrisch, K. Morigaki, *Presiding*

8:00 406. Contiguous nanostructured cellulose substrates produce quantitatively high yields of giant vesicles in low and high salt solutions. **A. Subramaniam**, J. Pazzi

8:25 407. Lipid/protein nano-assemblies entrapped within mesoporous gels. **M.L. Longo**

8:50 408. Single-molecule imaging of cells detecting nutrients in their local environment. **J.S. Biteen**

9:15 409. High content imaging to identify novel pharmacological modulators of membrane rafts. **A.K. Kenworthy**

9:40 410. Development of easy, fast, and stable cell imaging methods. F. Wu, **Z. Chen**

10:05 411. Loss of smooth muscle alpha-actin impairs cellular mechanosensing. B.C. Bywaters, M.P. Massett, S. Padgham, J. Chen, G.M. Rivera, J.P. Trzeciakowski, D.M. Milewicz, **A. Trache**

10:30 412. Biomolecular and particle interactions with curve model membranes. K. Mothander, L. Caselli, C. Montis, A. Ridolfi, E. Gustafsson, N. Steinke, D. Berti, A. Rennie, **T. Nylander**

10:55 413. Nanoplastic interactions with biomembranes: Effects of surface charge and protein corona passivation. L. Wang, **N. Malmstadt**

11:20 414. Can we dispense with sphingolipids?. **F.M. Goni**, B.G. Monasterio, N. Jimenez-Rojo, A.B. Garcia-Arribas, H. Riezman, A. Alonso

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Designing Nanomaterials for Catalysis, Energy Storage & Charge Transfer Processes

J. A. Hollingsworth, J. R. McBride, *Organizers*

R. Nagarajan, *Organizer, Presiding*

8:00 415. Oxidation resistant copper nanowires with sustained electrical and electro-chemical properties. **T. Zhang**, M. Zhao, F. Daneshvar, S. Wang, F. Xia, H. Sue

8:20 416. Encapsulation of gold nanoparticles into controlled homopolymer particles for catalytic applications. **J. Kim**, J. Lartey, P. Eyimegwu, L. Ludwig

8:40 417. Robust nickel nanoparticles shielded from surface oxidation. **K. Paulin**, A.M. Engstrom, M.R. Mackiewicz

9:00 418. Elucidating the stability of ligand-protected Au Nanoclusters under electrochemical reduction of CO₂. **A. Nagarajan**, R. Juarez-Mosqueda, M. Cowan, G. Mpourmpakis

9:20 419. Manipulating energy transfer at the surface of PbS nanocrystals. **I. Lee**, E. Raulerson, S.T. Roberts

9:40 420. Pseudocarbynes: Polyynes stabilized by metal clusters. H. Kim, P. Tarakeshwar, A.K. Jones, M. Meneghetti, P. Buseck, **S.G. Sayres**

10:00 421. Elucidating how photoexcited semiconductor nanocrystals drive redox enzyme catalysis. **G. Dukovic**

10:30 422. Nanoscale photoinduced charge transfer with individual quantum dots: Tunability through synthesis, interface design, and interaction with charge traps. **M. Cotlet**

11:00 423. Designing inorganic nanomaterials for energy applications. **T. Hyeon**

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, H. Fan, *Organizers, Presiding*

8:00 424. Molten inorganic salts as solvents and reactive media for colloidal chemistry. **D. Talapin**

8:30 425. DNA-programmed interfacial nanoparticle assembly. **R. Macfarlane**

9:00 426. Designing Au nanocrystal assemblies for optical metamaterials. **C.R. Kagan**

9:30 Intermission.

9:40 427. Shape regulation of high-index facet nanoparticles by dealloying. **C.A. Mirkin**

10:10 428. New developments in chiral inorganic nanostructures. **N. Kotov**

10:40 429. Colloidal synthesis of germanium nanocrystal quantum dots with size-tunable near-infrared photoluminescence. J. Noh, H. Kim, T. Shah, **B.A. Korgel**

11:10 430. Controlled self-assembly of water-soluble, “hairy”, inorganic nanoparticles (HINPs) into supracolloids with defined valence. **K. Webb**, Z. Nie

Section E

Pennsylvania Convention Center
119B

ACS Award in Colloid Chemistry: Symposium in honor of Molly Stevens

Cosponsored by PROF

L. Liz Marzan, *Organizer*

N. Kotov, P. S. Weiss, *Organizers, Presiding*

8:00 431. Plasmonic colloids and biosensing. **L. Liz Marzan**

8:30 432. Probing bioconjugation chemistry in colloidal materials. **C.D. Spicer**

8:50 433. Encoding high bioactivity in supramolecular nanostructures. **S.I. Stupp**

9:20 434. Novel antivirals. **F. Stellacci**

9:50 Intermission.

10:10 435. Glucose-responsive smart insulin patch. **Z. Gu**

10:40 436. Multicompartmental protein nanoparticles for targeted drug delivery. **J. Lahann**

11:10 437. Zinc oxide particles release nitric oxide from endogenous and exogenous nitric oxide prodrugs. **R. Chandrawati**

11:30 438. Assembly and degradation of inorganic nanoparticle in biological environment. **W.J. Parak**

Section F

Pennsylvania Convention Center
121A

ACS Award in Surface Chemistry: Symposium in honor of Teri Odom

Cosponsored by PROF
C. A. Mirkin, *Organizer, Presiding*

8:00 Introductory Remarks.

8:15 439. Rapid, large-volume, thermally controlled 3D printing using a mobile liquid interface.
C.A. Mirkin

8:45 440. Inverse-opal structures for photonic, catalytic, and sensing applications. **J. Aizenberg**

9:15 441. Nanolaminated multiresonant plasmonics for multimodal nano-bio interface. **w. zhou**

9:45 442. Tuning biomolecular display on nanostructured surfaces for high-performance sensing.
S.O. Kelley

10:15 443. Exploring chemical dynamics at the soft-hard interfaces. **B. Tian**

10:45 444. What do ligands look like on gold nanocrystals?. **C.J. Murphy**

Section G

Pennsylvania Convention Center
121B

ACS Award for Research at an Undergraduate Institution: Symposium in honor of Kerry Karukstis

Cosponsored by PROF
R. Nagarajan, *Organizer*
W. Chen, K. R. Riley, *Presiding*

8:00 445. Investigating the stability and orientation of antibody adsorbed onto gold nanoparticles. **J.D. Driskell**, G. Ruiz, K. Tripathi, N. Ryan, K. Rutschke, S. Okyem, O. Awotunde

8:25 446. Biomimetic self-assembly: Nanoliter aqueous microdroplet. **S. Lee**

8:50 447. Development of a novel analytical method for the *in situ* quantification and speciation of Ag(I) and AgNPs released from nano-enabled textiles. Z.J. O'Dell, L. Ezra, D. Boehmler, **K.R. Riley**

9:15 448. Tuning the dimensionality of polyaniline nanomaterials using Laponite™ hydrogels. **M.E. Hagerman**

9:40 449. Hydrogenation reactions over metal phosphide catalysts. **M.E. Bussell**, R.P. Lynch, R.H. Hagmann, J.R. Schare, J.D. Springer

10:05 Intermission.

10:15 450. Polymer thin-film stability studies using spin coating. **W. Chen**

10:40 451. Characterization of electrogenerated hexacyanoferrate thin films. **J.R. Hampton**

11:05 452. Nano engineering of rhodanine stabilized metallic nanostructures. **B.P. Chauhan**, M. Chauhan, G.K. Longia, M. Gheri

11:30 453. Enzyme-based *in situ* synthesis, stabilization and activity of gold nanoparticles for biological applications. **A. Wanekaya**, C. Garcia-Hernandez, A. Freese, M. Rodriguez-Mendez

11:55 454. Super atom gold clusters: Optical and electrochemical properties. **M. Devadas**

Section H

Pennsylvania Convention Center
103C

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

Materials

E. Borguet, H. Dai, J. I. Siepmann, *Organizers*
V. Carnevale, *Presiding*

8:00 Introductory Remarks.

8:05 455. Computational modeling of light-modulated ligands bound to their neuronal receptor targets. A. Nin Hill, G. Maleeva, A. Gomila-Juaneda, D. Wutz, K. Rustler, A. Bautista-Barrufet, X. Rovira, M. Bosch, P. Scholze, F. Peiretti, C. Rovira, B. König, P. Gorostiza, P. Bregestovski, **M. Alfonso-Prieto**

8:35 456. New functions based on sequence-defined and mixed-ligand strategies. **V. Percec**

9:05 457. Ions in solution: From intrinsic to collective properties. **C.J. Mundy**, E. Fetisov, T. Duignan, G.K. Schenter, J. Fulton, S. Kathmann

9:35 Intermission.

9:50 458. Monolayer protected gold nanoparticles, on the move!. **M. Devivo**, F. Rastrelli, F. Mancin

10:20 459. Photo- and mechano-sensitive lipids: Properties and applications. **S.O. Nielsen**, Z. Qin, K. Alberto

10:50 460. How is electronic energy converted to heat in semiconductor nanocrystals?. **B.G. Levine**, M.P. Esch, B.S. Fales, D.A. Fedorov, D.T. Hardwick, F. Liang, W. Peng, Y. Shu

11:20 461. Translating the message in spectroscopic probes of conjugated molecular materials. **P.J. Rossky**

Section I

Pennsylvania Convention Center
113B

Semiconductor Surfaces: From Chemistry & Function to Applications

Atomically precise surface manipulation

S. Schofield, A. V. Teplyakov, *Organizers*
M. Durr, *Presiding*

8:00 462. Atomistic arsine-silicon surface chemistry studies for atomic-scale semiconductor device fabrication. **T. Stock**, O. Warschkow, S. Schofield, N. Curson

8:30 463. Atomically precise control and understanding of each dissociative adsorption event of multiatomic molecules on single, paired, and arrays of reactive sites on the Si(100) surface. **D. Lin**

9:00 464. Halogen-based chemistry for atomic-precision device fabrication. **R.E. Butera**

9:30 465. (H,OH)-Si(001)-2x1 as a model surface for the study of ammonia adsorption on hydroxylated surfaces with real-time XPS. **F. Rochet**, L. Perez-Ramirez, J. Gallet, F. Bournel, S. Carniato, E. Magnano, F. Bondino, A. Pasquarello, O. Yazyev

10:00 Intermission.

10:20 466. Surface chemistries for atomic precision advanced manufacturing. **G.T. Wang**, E. Frederick, I. Kolesnichenko, D.R. Wheeler, T.N. Lambert, E. Bussmann, A.M. Katzenmeyer, S. Misra, R.E. Butera, K.J. Dwyer, A.V. Teplyakov, C. He, D.R. Silva Quiñones, A. Shestopalov, P.R. Raffaele

10:50 467. From single molecule to molecular devices: Silicon surface as a study platform. **d. riedel**

11:20 468. Hydrogenic states in silicon and black phosphorus. **S.R. Schofield**

Section J

Pennsylvania Convention Center
113C

Bioconjugation of Colloids

N. Feliu Torres, L. Liz Marzan, *Organizers*

W. J. Parak, *Organizer, Presiding*

8:00 469. Colloidal plasmonic metal nanoplates and nanocups. **J. Wang**

8:30 470. Nanoparticle carriers of Notch-1 antibodies and ABT-737 inhibit triple-negative breast cancer tumor growth *in vivo* to extend survival. D.M. Valcourt, M.N. Dang, M.A. Scully, **E. Day**

8:45 471. Biodegradation of bi-labelled polymer-coated rare-earth nanoparticles in adherent cell cultures. **N. Feliu**, W.J. Parak

9:00 Intermission.

9:15 472. Supramolecular self-assembly and bioconjugation of gold nanoparticles. P. Natale, I. Lopez Montero, **A. Guerrero-Martinez**

9:45 473. Polymer brush topology and core size control formation of protein corona and functionalized nanoparticle avidity. **E. Reimhult**, A. Lundgren, E. Benetti

10:00 474. Bioconjugation of nanoparticles with controlled ligand density. N. Feliu, **W.J. Parak**

10:15 Intermission.

10:30 475. Exploring dynamic confinement based on molecular recognition for sensing and biomedicine. **O.A. Scherman**

11:00 476. Site-specific nanobody conjugation for targeted drug delivery to protumoral tumor-associated macrophages. M. Scherger, E. Bolli, J. Van Ginderachter, **L. Nuhn**

11:15 477. Dipole-modulated downconversion colloidal nanoparticles as label-free biological sensors. K. R. Bajgiran, J. Dorman, **A.T. Melvin**

Functionalization of Nanocelluloses for Electrical, Optical, Magnetic, Barrier & Topochemical Properties

Sponsored by CELL, Cosponsored by COLL

Nanotechnology, Single Molecule & Single Cell Imaging in Biology & Medicine

Sponsored by ANYL, Cosponsored by BIOL, BIOT, COLL, MPPG and PHYS

MONDAY AFTERNOON

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*
B. Brettmann, J. Schlenoff, *Presiding*

1:30 478. Self-assembly of genetically encoded stimulus responsive polymers into nanoparticles.
A. Chilkoti

2:00 479. Modulating fibrillar assembly processes of proteins and peptides by polymers and folding elements. **W.H. Binder**, Z. Evgrafova, M. Canalp, B. Voigt, J. Balbach

2:30 480. Self-assembly of biomimetic polypeptide and protein based copolymers: From conformational control to functional biomaterials. E. Garanger, C. Bonduelle, **S. Lecommandoux**

3:00 481. Amphiphilic block copolymers to tailor the biology-materials interface. A. Leonardi, **C.K. Ober**, H. Papananou, R.A. Segalman

3:30 Intermission.

3:45 482. Assembly of polymers with nanocellulose: Polyelectrolyte complexes to CNC surface modification. N. Khan, M. Banerjee, **B. Brettmann**

4:15 483. Density control in receptor-functionalized surfaces. **J. Huskens**, J. Movilli, D. Di Iorio

4:45 484. Origin of saloplasticity in complexed polyelectrolytes. **J.B. Schlenoff**, M. Yang, Z. Digby, K. Akkaoui

5:15 485. Patterning charges and complex coacervation. L. Chang, T. Lytle, J. Madinya, C.E. Sing, **S.L. Perry**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*

J. D. Nickels, R. Tero, *Presiding*

1:30 486. Principles of tension- and curvature-controlled solid domain interactions on vesicle membranes: From biomolecular constructs to responsive materials. **M.M. Santore**

1:55 487. Molecular insight into the potential cytotoxicity of hydrophobic nanosheets. Z. Li, Y. Zhang, X. Zhu, **J. Fan**

2:20 488. Unbiased identification of the liposome protein corona using photoaffinity based chemoproteomics. **A. Kros**

2:45 489. Physical properties of membranes and membrane mimics: Potential impact on membrane protein structure. **L.M. Columbus**

3:10 490. Regulation of phospholipase C β activity at the membrane. **A. Lyon**, B.N. Hudson, R.E. Jessup, K.K. Prahalad

3:35 491. Structure and shape transitions in PEGylated paclitaxel-loaded cationic liposomes enhances delivery and cytotoxicity to human cancer cells. **C.R. Safinya**, V.M. Steffes, E.A. Wonder, K.K. Ewert

4:00 492. Solid-state deuterium NMR spectroscopy reveals emergent bending energies of lipid membranes. **M.F. Brown**, T.R. Molugu, S. Chakraborty, H.I. Petrache, R. Ashkar

4:25 493. Mechanism of cholesterol-induced shifts of GPCR activation. O. Soubias, W. Teague Jr, K. Hines, **K. Gawrisch**

4:50 494. Efficacious bicelle/PNA nanodisc for antisense. A.T. Rad, S. Malik, R. Bahal, **M. Nieh**

Pennsylvania Convention Center
118C

Nanomaterials

Multidimensional Nanomaterials Assembly, Characterization & Additive Manufacturing

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, *Organizers*
M. Cotlet, *Presiding*

1:30 495. 4D printed nanoparticle hydrogel composites. **M.A. Firestone**, S. Diouf, D. Williams, S. Seifert

2:00 496. Stress induced mesoscale assembly of nanoparticles for active nanostructures. **H. Fan**

2:30 497. Order and transport in 3D epitaxially-connected colloidal quantum dot superlattices. **M. Law**

3:00 498. High resolution electron microscopy imaging of metallic helical nanowires. **A. Bruefach**, A. Satariano, A. von Raesfeld, A. Talignani, H. DeVyldere, M. Scott

3:20 499. Detailed structural engineering of copper fine particles for conductive materials. **T. Yonezawa**, H. Tsukamoto, M.T. Nguyen

3:40 500. 3D self-replication of DNA nanostructures. **F. Zhou**, R. Sha, N.C. Seeman, P.M. Chaikin

4:00 501. Semiconducting nanosurfactants for additive printing of colloidal particles. **M. Zeng**, W. Kuang, Y. Du, M. Saeidi Javash, Y. Zhang

4:20 502. Capturing structural transitions in surfactant adsorption isotherms at solid/solution interfaces. **Z.W. Ulissi**, J. Yoon

4:40 503. Immersion and clustering of cylindrical nanoparticles at liquid-air interfaces. **T.A. Nitka**, P. Kral, L. Vukovic

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

Y. Qin, X. Zhang, *Presiding*

1:30 504. Bottom-up approaches for precisely nanostructuring hybrid organic/inorganic multi-component composites for organic photovoltaics. **Y. Qin**, L. Meng, H. Fan, M.J. Lane

2:00 505. Introducing *JPhys Materials*: New open access journal from IOP Publishing for leading interdisciplinary research in materials science. **K. Porter**, d. jopling

2:30 506. Designed synthesis and assembly of inorganic nanomaterials for medical applications. **T. Hyeon**

3:00 Intermission.

3:10 507. Directly correlating synthesis parameters with nanostructure and optical properties in advanced colloidal quantum dots. **J.A. Hollingsworth**

3:40 508. Cluster assembly pathways to gibbsite nucleation and crystal growth. **X. Zhang**

4:10 509. Self-assembled optical and energy materials. **U. Steiner**

4:30 510. Nanoparticle self-assembly: From oligomers to mesoscale structures. **A. Kanaras**

4:50 511. Development of surface composition and ordering during reverse-emulsion assembly of binary colloidal particle mixtures. **C. Heil**, T.E. Gartner, A. Jayaraman

Section E

Pennsylvania Convention Center
119B

ACS Award in Colloid Chemistry: Symposium in honor of Molly Stevens

Cosponsored by PROF

N. Kotov, *Organizer*

L. Liz Marzan, P. S. Weiss, *Organizers, Presiding*

1:30 512. Biomimetic nanomaterials for neuroprosthetic devices. **N. Kotov**

2:00 513. Taking cyclodextrin metal-organic frameworks from the research laboratory to the market place. **J.F. Stoddart**

2:30 514. Programming medical treatment one nanolayer at a time. **P.T. Hammond**

3:00 515. Automation and machine learning: Big data tools to engineer biofunctional polymers.
A.J. Gormley

3:20 Intermission.

3:40 516. Disarming bacteria the natural way. **L.L. Kiessling**

4:10 517. Granular hydrogels for biomedical applications. **J.A. Burdick**

4:40 518. Nano-enabled immunotherapy for cancer and the treatment of allergic and autoimmune disease. **A. Nel**

Section F

Pennsylvania Convention Center
121A

ACS Award in Surface Chemistry: Symposium in honor of Teri Odom

Cosponsored by PROF
C. A. Mirkin, *Organizer*
H. Gao, *Presiding*

1:30 519. Bringing the digital revolution to polymer manufacturing. **J.M. DeSimone**

2:00 520. Light-harvesting applications of nanoparticles. **N.J. Halas**

2:30 521. Could composite halide perovskites provide a stable solution?. **H. Gao**

3:00 522. Integrating catalysis-critical transport functions within nanoarchitected platforms.
D.R. Rolison

3:30 523. Deterministic routes to assembly of functional materials into complex, three dimensional architectures. **J.A. Rogers**

Section G

Pennsylvania Convention Center
121B

ACS Award for Research at an Undergraduate Institution: Symposium in honor of Kerry Karukstis

Cosponsored by PROF
R. Nagarajan, *Organizer*
R. Alam, M. Wilker, *Presiding*

1:30 524. Programmable synthesis of hybrid inorganic colloids. **M. Zamkov**

1:55 525. Investigation of nanoparticle surface properties that impact interactions with model bacteria. **V. Feng**

2:20 526. *In situ* generated metal nanoparticles as two-dimensional assemblies, core-shell structure and biosensor. **K. Bandyopadhyay**

2:45 527. Charge transfer capabilities of hybrid metal: Semiconductor nanomaterials architectures. **R. Alam**

3:10 528. Aerogels! Engaging undergraduate students in cross-disciplinary research. **M.K. Carroll, A.M. Anderson**

3:35 Intermission.

3:45 529. Characterization of the factors that influence nanocrystal surface ligand exchange dynamics. **M. Wilker**

4:10 530. Siloxanes as useful modification agents for inorganic oxides: Simple techniques and applications towards conformal, multi-functional interfaces. **J.W. Krumpfer**

4:35 531. Tuning acidity of graphene oxide for the reduction of O₂ to H₂O₂ using physical hole defects. C. Noto, H. Gomez, K. Lopez, T. Luong, B. Nguyen, **M. Groves**

5:00 532. Functional approach to solubility parameter computations. **D.S. Boucher**

Section H

Pennsylvania Convention Center
103C

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

Biological Systems

E. Borguet, H. Dai, J. I. Siepmann, *Organizers*
G. Fiorin, *Presiding*

1:30 Introductory Remarks.

1:35 533. Spectroscopic assessment of the conformational dynamics of the M2 proton channel. **F. Gai**

- 2:05 534.** Multilevel modeling of cellular networks in biomedicine. **L. Saiz**
- 2:35 535.** Interfacial ion atmosphere around highly charged surfaces in aqueous solution. **U. Mohanty**
- 2:55 536.** Integrative modeling at the protein-membrane interface. **M. Dal Peraro**
- 3:25** Intermission.
- 3:40 537.** Far from ideal: Specific binding in lipid phases. R. Salari, T. Joseph, R. Lohia, J. Henin, **G. Brannigan**
- 4:10 538.** Computational design of dendronized nanoparticles. **A. Banerjee**, M. Dutt
- 4:30 539.** Principles governing catalytic activity of self-assembled short peptides. **H. Dong**
- 5:00 540.** *De novo* design of functional proteins. **W.F. Degrado**

Section I

Pennsylvania Convention Center
113B

Semiconductor Surfaces: From Chemistry & Function to Applications

Semiconductors & Catalysis

S. Schofield, A. V. Teplyakov, *Organizers*
R. L. Opila, *Presiding*

- 1:30 541.** Pt-Sn clusters on TiO₂: Growth and activity for selective hydrogenation reactions. S. Beniwal, S. Farzandh, K. Metavaryuth, D. Shakya, W. Chai, G.A. Henkelman, **D.A. Chen**
- 2:00 542.** Chemistry of TiO₂ surfaces in aqueous and ambient environments. **M.A. Hines**
- 2:30 543.** Interfacial electron transfer of perylene based chromophores bound to TiO₂. **H. Yan**, J.P. Avenoso, S. Doble, E. Galoppini, L. Gundlach
- 2:50 544.** Carboxylic anchoring dyes do not adsorb directly onto TiO₂ particles in protic solvents. **H. Fang**, J. Ma, M.J. Wilhelm, H. Dai
- 3:10** Intermission.
- 3:30 545.** Well-defined nanographene-based systems for catalytic applications. S. Debnath, M. Che, A. Sengupta, **K. Raghavachari**

4:00 546. Activating single-layer MoS₂ for conversion of syn gas to higher alcohols: Insights from theory. **T.S. Rahman**, D. Le, T. Jiang, T.B. Rawal

4:30 547. Modulating π - π stacking of naphthalene bisimide ligand architectures for electron transfer in nanocrystal hybrid materials. **K.C. Elbert**, M. Taheri, N. Gogotsi, J. Park, J.B. Baxter, C.B. Murray

Section J

Pennsylvania Convention Center
113C

Bioconjugation of Colloids

L. Liz Marzan, W. J. Parak, *Organizers*
N. Feliu Torres, *Organizer, Presiding*

1:30 548. Carbonic anhydrase inhibitors-conjugated colloidal systems for doxorubicin delivery to hypoxic tumors. A. Shabana, U. Satyal, U.K. Mondal, H.H. Hensley, **M.A. Ilies**

2:00 549. Quantitative analysis of targeting ability for glucose decorated polymeric micelle penetrating blood-brain barrier. **N. Nakamura**, Y. Anraku, S. Fukushima, H. Cabral, K. Kataoka

2:15 550. Control of gold nanoparticle growth on ferritin proteins. **E.B. Cerkez**, A.D. Gallo, A. Valentine, D.R. Strongin

2:30 Intermission.

2:45 551. Bioconjugation of nanoparticles and their applications. **A. Kanaras**

3:15 552. Antibody-targeted protein nanoparticles: Selective activation of the antioxidant response element. **J. Gregory**, B. Zhang, A. Berardi, C. Greineder, J. Lahann

3:30 553. Self-assembled bio conjugated silica assembly in the treatment of drug resistance cancer. **N. Thorat**, J. Bauer

3:45 Intermission.

4:00 554. Membrane wrapped plasmonic nanoparticles quantify cell surface receptor clustering and reveal lipid-mediated intracellular fates. **B.M. Reinhard**

4:30 555. Role of EGFR clustering in ROS-mediated signal activation. **S. Zhang**, B.M. Reinhard

4:45 556. SNAP, click, and catch: New strategies for nanocrystal bioconjugation. **B.E. Cohen,** V. Mann, S. Wichner, C. Ajo-Franklin, A. Yildiz

5:00 557. Utilizing meta-analysis to understand the cellular toxicity of cadmium containing quantum dots. **I. Medintz,** E. Oh, J. Breger, S. dean, M. Bilal, Y. Cohen

Functionalization of Nanocelluloses for Electrical, Optical, Magnetic, Barrier & Topochemical Properties

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Nanotechnology, Single Molecule & Single Cell Imaging in Biology & Medicine

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MONDAY EVENING

Section A

Pennsylvania Convention Center
Exhibit Hall A

Sci-Mix

R. Nagarajan, *Organizer*

8:00 - 10:00

177, 178, 183, 187, 188, 192, 193, 195, 196, 197, 199, 200, 203, 205, 208, 212, 213, 214, 236, 237, 241, 244, 245, 247, 249, 250, 254, 255, 258, 261, 263, 265, 266, 268, 269, 271, 272, 273, 274, 276, 285, 286, 287, 288, 289, 292, 294, 296, 300, 308, 310, 313, 317, 318, 321, 325, 328, 331, 333, 336, 343, 345, 346, 347, 350, 352, 353, 356, 357, 358, 359, 361, 362, 365, 367, 368, 369, 371, 372, 373, 376, 377, 378, 379, 381, 383, 384, 390, 391, 392, 397. See Previous Listings.

599, 898. See Subsequent Listings.

TUESDAY MORNING

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*

C. Leal, K. Sakurai, *Presiding*

8:00 558. Bespoke functional polymer colloids via polymerization-induced self-assembly. **S.P. Armes**

8:30 559. Polymerization-induced self-assembly (PISA) of 1,5-cyclooctadiene using ring opening metathesis polymerization (ROMP). O. Torres Rocha, X. Wu, C. Zhu, C.M. Crudden, **M.F. Cunningham**

9:00 560. Kinetic analysis of RAFT-polymerization-induced self-assembly by decoupling chain propagation and micelle formation. **K. Sakurai**, R. Takahashi, J. Brendel, F. Sobotta

9:30 561. Triggering and recycling of nonequilibrium micelles. C. Dähling, A. Steinschulte, J. Houston, A. Radulescu, M. Drechsler, M. Brugnoli, H. Mori, D. Pergushov, **F. Plamper**

10:00 Intermission.

10:15 562. Block copolymer micelles modulated by ionic liquids: Thermodynamics and structure. **P. Alexandridis**, Z. He, Y. Zhang, M. Tsianou

10:45 563. Do we understand the early stages of self-assembly in copolymer materials?. **M. Mueller**

11:15 564. Microfluidics synthesis of drug-loaded hybridosomes. **C. Leal**

11:45 565. Platonic micelles: Molecular packing and thermodynamics. **R. Nagarajan**, Y. Cardona Quintero

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*

R. Ashkar, A. Trache, *Presiding*

- 8:00 566.** Tethered-type lipid bilayer membranes on graphene oxide. **R. Tero**, K. Tsuzumi
- 8:25 567.** Intracellular transport of TiO₂ nanoparticle-containing lysosomes. **C.K. Payne**
- 8:50 568.** Alzheimer's disease amyloid- β peptide and the sphingolipids: From lipid domain pattern to functioning. **M. ANGELOVA**
- 9:15 569.** Membrane curvature underlies topography-induced intracellular signaling. H. Lou, W. Zhao, **B. Cui**
- 9:40 570.** Exploring the behavior of PI(4,5)P₂ using supported lipid bilayers. S. Sun, **P.S. Cremer**
- 10:05 571.** Interactions of cells and cell spheroids with biomimetic polyzwitterions. **F.M. Winnik**, N. Morimoto, B. Qi
- 10:30 572.** Hybrid photosynthetic system of natural plant thylakoids and synthetic lipids reconstituted into a supported microscale membrane array. T. Yoneda, Y. Tanimoto, D. Takagi, **K. Morigaki**
- 10:55 573.** Systemic effects of engineering the cell membrane composition in *Bacillus subtilis*. **J.D. Nickels**
- 11:20 574.** Asymmetric lipid bilayers: Insights from leaflet-specific structural studies. **G. Pabst**

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Nanocrystal Growth Mechanisms: Control & in situ Characterization

J. A. Hollingsworth, R. Nagarajan, *Organizers*
J. R. McBride, *Organizer, Presiding*

- 8:00 575.** Investigating plasmonic nanomaterials via ssNMR. **C. Conti**, G.F. Strouse
- 8:20 576.** Surface chemistry and gel permeation chromatography purification of CsPbBr₃ nanocrystals with high quantum yield and colloidal stability. **S. ABIODUN**, P.J. Pellechia, A.B. Greytak
- 8:40 577.** Chemically reversible isomerization in inorganic magic sized clusters. **R.D. Robinson**

9:00 578. Time resolved x-ray spectroscopy of ZnSe semiconductor nanocrystals: Understanding the role of surface ligands on dynamical properties. A. Khammang, X. Zhang, **R.W. Meulenberg**

9:20 579. Colloidal synthesis of phase-tunable transition metal dichalcogenide nanocrystals. **A.M. Schimpf**, J.Q. Geisenhoff

9:40 580. Deciphering the hidden complexity of heterostructured nanocrystals. **C.M. Gentle**, Y. Wang, T. Haddock, C. Dysktra, R. van der Veen

10:00 581. Non-classical growth mechanism of nanoparticles resolved by liquid phase TEM. **J. Park**

10:30 582. Unraveling the energy landscape of tetrahedral InP nanocrystals. **S. Jeong**

11:00 583. Galvanic replacement with chemically heterogeneous templates. **S.E. Skrabalak**

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, H. Fan, Y. Sun, G. Zou, *Organizers*

T. Li, *Organizer, Presiding*

X. Zhang, *Presiding*

8:00 584. Small gold nanorods and protected small silver nanorods. **L. Liz Marzan**

8:30 585. Importance of unbound ligand in determining nanocrystal superlattice structure and orientation. **S. Winslow**, J.W. Swan, W.A. Tisdale

8:50 586. Unique reshaping behavior of gold nanoprisms in the presence of cetyltrimethylammonium chloride. **Y. Wang**, S. Yang

9:10 587. Understanding the synthesis mechanism of silver-glutathione monolayer-protected clusters. **Y. Zaker**, T.P. Bigioni

9:30 588. Chemical reaction mechanisms of tin telluride nanocrystals. **S.W. O'Neill**, M. Hamilton, T. Krauss

9:50 Intermission.

10:00 589. Sterically encumbered phosphine precursors for InP quantum dot synthesis. H. Chandrasiri, **P.T. Snee**

10:20 590. Crystal engineering to fabricate twin boundary induced highly strained network of Au doped Ag nanorod with excellent catalytic efficiency: Bridging application from catalysis to sensing for early detection of dengue serotype-2 and its related metabolites in human serum. **S.K. De**

10:40 591. Two-dimensional nanoparticle assemblies with atomic-level precision. **N. Nonappa**, P. Engelhardt

11:00 592. Mixing-controlled synthesis of metal halide perovskite nanocrystals. **M. Abolhasani**

Section E

Pennsylvania Convention Center
119B

Industry-Academia Dialog

M. L. Lynch, K. J. Stebe, *Organizers, Presiding*

9:00 593. Industry-academe dialogue. **K.J. Stebe, M.L. Lynch**

Section F

Pennsylvania Convention Center
121A

ACS Award in Surface Chemistry: Symposium in honor of Teri Odom

Cosponsored by PROF
C. A. Mirkin, *Organizer*
G. C. Schatz, *Presiding*

8:00 594. Grand challenges for nanophotonics: Steering and riding light. **H. Atwater**

8:30 595. Electronic, multiplexed neurochemical monitoring. **A.M. Andrews**

9:00 596. Next-generation upconverting nanoparticles for low-threshold micro- and nano-lasing. **P. Schuck**

9:30 597. Organometallic precursors for FEBID and FIBID of nanostructures. **L. McElwee-White**

10:00 598. Optical properties of 2D and 3D plasmonic nanoparticle arrays. **G.C. Schatz**

10:30 Concluding Remarks.

Section G

Pennsylvania Convention Center
121B

Bacterial Interactions with Soft Materials

Bacteria-Surface/Interface Interactions I

D. D. Bendejacq, *Organizer*

D. Lee, M. M. Santore, *Organizers, Presiding*

T. H. Niepa, *Presiding*

8:00 599. Lignin nanoparticles as a sustainable oil dispersant. **A. Pete**, J.G. Lee, B. Bharti, M.G. Benton

8:20 600. How staphylococcal autolysin interacts with surfaces during biofilm formation. **N. Fitzkee**, R. Yadav, R. Perera, T. South

8:40 601. *Staphylococcus aureus* adhesion is mechanosensitive to soft materials. I. Kurtz, K.K. kkolewe@ecs.umass.edu, **J.D. Schiffman**

9:10 602. Bacterial motility and chemotaxis near oil-water interfaces. **R.M. Ford**

9:40 Intermission.

9:50 603. Holography demonstrates force-modulation of fimbriated bacteria adhesion without specific bonds. **E. Reimhult**, A. Lundgren, P. van Oostrum

10:10 604. Controlling bacteria-material interactions via polyelectrolyte microgels. **M. Libera**

10:40 605. Adhesion of bacteria at surfactant-decorated oil/water interfaces. N.K. Dewangan, **J. Conrad**

11:10 606. Fluid motion induced by driven and active colloids at interfaces. **N.G. Chisholm**, M. Molaei, J. Deng, T. Yao, J.C. Crocker, K.J. Stebe

11:30 607. Response of marine bacteria to microplastics. **M. Machado**, T. Oliveira, G. Vimbela, A. Tripathi, A. Bose

Section H

Pennsylvania Convention Center
103C

Computer Simulations of Soft Matter & Interfaces: Symposium in honor of Michael Klein at 80

Liquids

E. Borguet, J. I. Siepmann, *Organizers*
H. Dai, *Organizer, Presiding*

8:00 Introductory Remarks.

8:05 608. Alkali metal-liquid ammonia solutions: From blue electrolytes to bronze metals. **P. Jungwirth**

8:35 609. Path integral approach to a strong coupling solution of a coarse grained electronic structure describes water's properties from ice to the supercritical regime. **G.J. Martyna**

9:05 610. Interphase human chromosome exhibits out of equilibrium glassy dynamics. **D. Thirumalai**

9:35 Intermission.

9:50 611. Rearrangements in supercooled liquids and reconfiguration of liquid crystal oligomer drops. **A.G. Yodh**

10:20 612. Structured solutions and drug delivery. **J. Shelley**

10:50 613. From molecular dissociation to crystal nucleation: Next generation methods for sampling rare events in all-atom resolution. **B.J. Berne, P. Tiwary**

11:20 614. Molecular simulations probing the distribution of molecules: Phases, mesophases, and interfaces. **J.I. Siepmann**

11:50 Concluding Remarks.

Section I

Pennsylvania Convention Center
104B

Semiconductor Surfaces: From Chemistry & Function to Applications

Interface Design & Engineering

A. V. Teplyakov, *Organizer*
S. Schofield, *Organizer, Presiding*

8:00 615. Novel approaches to form organic-inorganic interfaces on metal oxides: Controlling reactivity, concentration of functional groups, and substrate morphology. **A.V. Teplyakov**

8:30 616. Building a new materials toolkit: Using surface chemistry to direct the morphology and deposition of thin films and nanoobjects. **A.V. Walker**

9:00 617. Monolayer assembly, film morphology, and charge transport of organic semiconductor layers and films. **S.L. Tait**

9:30 Intermission.

9:50 618. Unusual electronic structure and surface properties of transparent conducting oxide semiconductors. **C.F. McConville**

10:20 619. Interface engineering for electronic applications: Surface chemistry of 2D materials for doping and contacts and Si anodes for SEI formation on batteries. **C.A. Hacker**, S. Takeuchi, S. Zhang

10:40 620. Organosilane nanostructure fabrication on semiconductor substrates using particle lithography: Influence of solvent and surface water. **T.J. Mullen**

11:00 621. Role of hydroxy-substituted benzenes as rate enhancement additives for shallow trench isolation (STI) chemical mechanical planarization (CMP): Structure activity relationship (SAR). **K. Wortman-Otto**, J.J. Keleher

Section J

Pennsylvania Convention Center
121C

Biomaterials & Biointerfaces

J. Kaar, J. D. Schiffman, *Organizers, Presiding*

8:00 622. Tuning protein interactions with zwitterionic poly(sulfobetaine). **D.E. Leckband**, T.S. Ahmed, L. Kiskeya, D. Guin, K.A. Miller, M. Gruebele

8:20 623. Rapid “hard” serum albumin coronas: towards personalized surfaces. **J.B. Schlenoff**, J. Delgado, R.L. Surmaitis

8:40 624. Interaction of PrP(106-126) with model cell membranes. **J. Markle**, S.L. Frey

9:00 625. Protein toxin sorting on the bacterial cell membrane. **A. Brown**, J.B. Nice

9:20 Intermission.

9:40 626. Bioconjugates: *In silico* perspective. **C.M. Colina**

10:00 627. Optimizing blood-compatible materials: Protein interactions with nanostructured and polymer brush surfaces. **M. Kipper**

10:20 628. Tuning protein interactions with polyions for cellular compartmentalization. V. Yeong, J. Wang, **A. Obermeyer**

10:40 629. From solution behaviour to interaction with lipid bilayers: Building a tool-box for understanding intrinsically disordered proteins. **M. Skepö**

Bridging Surface Science to Catalysis

Sponsored by CATL, Cosponsored by COLL, ENFL and ENVR

Chemistry in Space: Novel Trends

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Nanocellulose: From Fundamentals to Function

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50 Years of Polymer Science & Engineering at Southern Miss

Building the foundation: polymer structure/property/function

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TUESDAY AFTERNOON

Section A

Pennsylvania Convention Center
115C

ACS Award Lectures

Cosponsored by PROF
R. Nagarajan, *Organizer*
K. J. Stebe, *Presiding*

2:00 Introductory Remarks.

2:05 630. Award Address (ACS Award in Colloid Chemistry sponsored by the Colgate-Palmolive Company). Engineering the bio-material interface for biosensing applications. **M. Stevens**

2:50 Introductory Remarks.

2:55 631. Award Address (ACS Award in Surface Chemistry sponsored by The Procter & Gamble Company). Chemistry on three-dimensional surfaces. **T.W. Odom**

3:40 Introductory Remarks.

3:45 632. Award Address (ACS Award for Research at an Undergraduate Institution sponsored by Research Corporation for Science Advancement). Fluorescence delineation of self-assembled aggregates of amphiphilic surfactants and chromonic dyes. **K.K. Karukstis**

4:30 Introductory Remarks.

4:35 633. Dynamic plasmonics. **L. Na-Liu**

Section F

Pennsylvania Convention Center
121A

Basic Research in Colloids, Surfactants & Interfaces

Polymer Systems

R. Nagarajan, *Organizer*

C. E. Mohler, T. P. Pearl, *Presiding*

2:00 634. Incorporation of liquid nanodomains into polymeric films for pharmaceutical applications. **E. Abramov**, N. Garti

2:20 635. Roles of surface wetting and bulk diffusion in the contamination of polymer composite thin films by distilled mustard blister agent, HD. **T.P. Pearl**, D. Boyne, M. Hulet, M. Varady, B.A. Mantooth

2:40 636. Bistability in the flow of polymer solutions in porous media. **C. Browne**, A. Shih, S.S. Datta

3:00 637. Controlled delivery and release for biopolymer degradation. **C.E. Mohler**, L. Qi, C. Hilliard, C. Liu

3:20 638. Phase behaviour of rod-polymer mixtures. **V. Peters**, M. Vis, Á. González García, R. Tuinier

3:40 639. Molecular mechanisms of complex boundary lubrication behavior for multifunctional associative polymer viscosity modifiers. **T.J. Murdoch**, E. Pashkovski, R. Carpick, D. Lee

4:00 640. Role of voids and porosity on the transport of macromolecules through 3D printed materials. **A.M. Zeigler**, J.B. Cabalo, B.K. Ryu, H. Tsang, R.N. Zia

4:20 641. Layer-by-layer deposition and covalent attachment of PEGylated gold nanoparticles (AuNPs) on aminized glass. **Z. Zheng**, **R. Zilberberg**, Z. Rosenzweig

4:40 642. Shear strength enhancement of carbon fiber composite via oxygen plasma treatment. **z. zhang**, J.L. Wilson, B.R. Kitt, D. Flaherty

5:00 643. Functionalization of supramolecular hydrogels via *in-situ* photopolymerization of polyaniline for electrochemical sensing applications. **A.N. Linhart**, M.J. Karunarathna, A. Ostrowski, J.J. Keleher

Section I

Pennsylvania Convention Center
104B

Acoustically-Active Colloids for Imaging & Therapy

Colloids & Nanoparticles for Photoacoustics

A. P. Goodwin, E. P. Kharlampieva, *Organizers*

J. V. Jokerst, *Organizer, Presiding*

2:00 Introduction.

2:10 644. Photoacoustically active colloids for medical imaging. **J.V. Jokerst**

2:40 645. Molecular photoacoustic reporters for early diagnosis of kidney injury. **K. Pu**

3:10 646. Optically modulatable contrast agents for background-free photoacoustic and ultrasound imaging. **S. Emelianov**, R. Dickson

3:40 647. Organic nanoprobe for photoacoustic imaging in biomedical applications. C. Zhang, Y. Li, J. Ni, **K. Li**

4:10 Intermission.

4:30 648. Dynamic optical absorption from antibody-indocyanine green conjugates for specific spectroscopic photoacoustic molecular imaging. **K. Wilson**

5:00 649. Formulating Photoacoustic Agents with High Contrast at 1064 nm. **J.F. Lovell**

5:30 650. Chemical approaches to enhance the photoacoustic properties of stimulus-responsive probes. **J. Chan**

Bridging Surface Science to Catalysis

Sponsored by CATL, Cosponsored by COLL, ENFL and ENVR

Nanotechnology, Single Molecule & Single Cell Imaging in Biology & Medicine

Sponsored by ANYL, Cosponsored by BIOL, BIOT, COLL, MPPG and PHYS

50 Years of Polymer Science & Engineering at Southern Miss

Next-generation multifunctional polymeric materials

Sponsored by POLY, Cosponsored by COLL[†] and PMSE

TUESDAY EVENING

50 Years of Polymer Science & Engineering at Southern Miss

Sponsored by POLY, Cosponsored by COLL[‡] and PMSE

Polymer Colloids: Synthesis, Analysis, Modeling & Application

Sponsored by POLY, Cosponsored by ANYL[‡], COLL and PMSE[‡]

WEDNESDAY MORNING

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*
P. Alexandridis, S. Copp, *Presiding*

8:00 651. Anomalous small angle X-ray scattering study of macroion aggratation and quantitative counterion distribution around macroion. **J. Chen**, M.K. Bera, T. Liu

8:20 652. Kinetic phase diagrams of polystyrene-b-poly(ethylene oxide) in solution. **M. Vena**, D. de Moor, H. Friedrich, R. Tuinier, J. Patterson

8:40 653. Self-assembly of short-chain polyelectrolyte block copolymers into fluid biomimetic membranes. **S. Copp**, S. Arias, R. Hamblin, S. Ivanov, G. Montaña

9:00 654. Heteroepitaxy at metal-organic chalcogenolate coordination polymer interfaces. **J. Hohman**

9:20 655. Internal structure of nanocarriers containing drug hydrophobic ion pairs dictates drug release. **K. Ristroph**, M. Salim, B. Wilson, A. Clulow, B. Boyd, R.K. Prudhomme

9:40 Intermission.

9:55 656. Self-assembly of poloxamer block copolymers: From thermodynamics, to nanostructure, to function, to formulations. **P. Alexandridis**

10:15 657. Furry nanoparticles: Cross-linked nanoparticles prepared via nanoemulsions and their robust stability *in vivo*. **S. Fujii**, K. Sakurai, R. Tanaka, J. Matsuno, J. Lee

10:35 658. Effect of a competitive solvent and chain architecture on binding enthalpy and chain intermixing in hydrogen-bonded assemblies. **S.A. Sukhishvili**, A. Aliakseyeu, J. Ankner

10:55 659. Polymer micelles: Controlling the spatial distribution of guest compounds and the stability using added free polymers. **R. Tuinier**, Á. González García, A. Ianiro

11:15 660. Mediation of co-assembly of peptides with different functionalities via a common peptide backbone. **K. Chan**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, S. Muralidharan, A. N. Parikh, *Organizers*

M. Nieh, *Organizer, Presiding*

N. Malmstadt, *Presiding*

8:00 661. Unravelling protein mediated lipid dynamics using fluorescence correlation spectroscopy and molecular dynamics simulations: Influence of pore formation and crowding. I. I. P., R. Cheerla, **G.K. Ayappa**, J. Basu

8:25 662. Interplay of membrane tension and osmotic pressure in modulating α -synuclein binding. **K.C. Lee**, P. Chung, L. Hwang, B. Slaw, A. Leong, E. Adams

8:50 663. Interaction of a polyarginine peptide with membranes of different mechanical properties. **N. Wilke**, M. Crosio, M. Via, C. Camara, A. Mangiarotti, D. Mario

9:15 664. Cholesterol stiffens saturated and unsaturated phosphocholine membranes. **R. Ashkar**, S. Chakraborty, M. Doktorova, T.R. Molugu, F. Heberle, H. Scott, E.G. Kelley, M. Nagao, L. Stingaciu, B. Dzikovski, R. Standaert, F. Barrera, J. Katsaras, G. Khelashvili, M.F. Brown

9:40 665. Curving in or out: Membrane remodeling and spontaneous curvature generation by ions, (sugar)lipids, polymers and proteins. **R. Dimova**

10:05 666. Motion of objects embedded in lipid bilayer membranes: Diffusion, advection and effective viscosity. **F.L. Brown**

10:30 667. Lipid molecular diffusion and membrane viscosity measured by quasi-elastic neutron scattering. **M. Nagao**, E.G. Kelley, T. Yamada, A. Faraone, K. Shibata, P. Butler

10:55 668. Local enrichment of unsaturated chains around the A_{2A} adenosine receptor. **E. Lyman**

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Nanomaterials for Sensing & Remediation

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, *Organizers*
D. E. Discher, *Presiding*

8:00 669. Amine/acid mixtures: Their nanostructure and its role in extraction processes. **M.N. Kobrak**

8:20 670. New nanostructures for X-ray nanochemistry. **T. Guo**

8:40 671. Development of field-operable quantum dot chemosensors: For gas-phase explosive signatures. D.E. Riegner, **H. Bethune**, M. Curtin, A. Buhr, D. DeNeve, R. Limbocker

9:00 672. Fabrication of core-shell carbon polymer dots with stable fluorescence in polymers and potential applications as a sensor of chromium(VI). **G. Sun**, Y. Yu

9:20 673. Oscillatory microdroplet constituted urea biosensor stimulated by acoustic waves. **S. Thakur**, M. Bhattacharjee, A. Dasmahapatra, D. Bandyopadhyay

9:40 674. Dumbbell-like silica coated gold nanorods and their plasmonic properties. **M. Wang**, A. Hoff, J.E. Doebler, S.R. Emory, Y. Bao

10:00 675. Enzymatically and photolytically inter-switchable carbon dots with near-infrared fluorescence emission. **P. Fathi**, M. McDonald, M. Esch, D. Pan

10:20 676. Oxidation and stabilization of colloidal 2D MXene nanosheets. **X. Zhao**, T. Habib, S. Shah, A. Vashisth, E. Prehn, W. Sun, J.L. Lutkenhaus, M. Radovic, M.J. Green

10:40 677. Detection of bio-analytes by using two-dimensional nano sensor array. **P. BEHERA**

11:00 678. Label-free pathogen detection based on yttrium doped carbon nanoparticles up to single-cell resolution. **M.a. ALAFEEF**, K. Dighe, D. Pan

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, *Organizer, Presiding*

X. Zhang, *Presiding*

8:00 679. Janus heterodimers: Preparation, surface modification, and self-assembly. **D. Jishkariani**, D. Wang, M. Hermes, Y. Wu, A. Van Blaaderen, C.B. Murray

8:20 680. Transforming silver chlorobromide nanocubes into hollow nanostructures. **S.C. Abeyweera**, S. Stewart, Y. Sun

8:40 681. Molecular engineering of semiconductor and plasmonic nanocrystal interfaces through host-guest recognition motifs. **K. Sokolowski**, J. Huang, D. Xu, J. Baumberg, O.A. Scherman

9:00 682. Environmentally stable CsPbBr₃/TiO₂ core/shell nanocrystals with enhanced charge transport properties. **W. Zheng**, Z. Li

9:20 683. Dendrimer directed nanocrystal assembly. **K.C. Elbert**, T. Vo, N.M. Krook, W. Zygmunt, J. Park, K.G. Yager, S.C. Glotzer, C.B. Murray

9:40 684. Synthesis of sub-100 nm Pt-Au nanotube with tunable SPR band and investigation of its photothermal bactericidal activity. **Q. Zhang**

10:00 685. One-pot polymer patch deposition on gold nanoparticles via ligand island formation. **S. Zhou**, A. Kim, L. Yao, S. Ni, B. Luo, C.E. Sing, Q. Chen

10:20 686. Forming libraries of magnetic multicore nanoparticles with tunable dimensions and their biomedical applications. **Z. Xiao**, Q. Zhang, V.L. Colvin

10:40 687. Binary superlattices of plasmonic and excitonic nanocrystals for infrared optical metamaterials. **S. Brittman**, N.A. Mahadik, S.B. Qadri, J. Tischler, J.E. Boercker

11:00 688. Core-shell polyzymes as an approach towards polymeric nanoparticles for intracellular bioorthogonal catalysis. **S. Fedeli**, V.M. Rotello

Section E

Pennsylvania Convention Center
119B

Surface Chemistry

Biofilms, Polymers & Coatings

S. L. Tait, *Organizer*

C. Buechner, P. Uhlmann, L. Zhang, *Presiding*

8:00 689. Chemical model studies of water-membrane interactions. **C. Buechner**, S. Gericke, H. Bluhm

8:20 690. Investigation of insulin conformations and interactions with cell membrane lipids with Langmuir monolayers and Brewster angle microscopy. **S. Croslow**, A.L. Sostarecz

8:40 691. Bioinspired coatings based on naturally occurring chlorophyll. **R. Sharma**, V. Somiseti, F.F. Bruno, E. Kingsley, R. Nagarajan

9:00 692. Adsorption and net structure of polymer-surfactant complexes at the oil/water interface as induced by their specific intermolecular interactions. **R. Altman**, G.L. Richmond

9:20 693. Real-time adsorption of expansin on the surface of cellulose: Effect of pH, temperature and products during enzymatic hydrolysis of lignocellulose. **P. Zhang**, R. Su, W. Thielemans

9:40 694. Genomic DNA coated 3D printed devices for chemotherapy. **D.W. Yee**, R.H. Grubbs, J.R. Greer

10:00 695. Highly-tunable carbon fiber interfaces for high performance thermoplastic prepreg. **Z. Hinton**, N. Alvarez, G.R. Palmese

10:20 696. Molecular rationale of graphene-polymer interactions and the effect of solvent on graphene transfer. **A.J. Carr**, A.R. Head, J.A. Boscoboinik, M. Eisaman, S.R. Bhatia

10:40 697. Control of structure property-relations of multi-functional polymer films based on zwitterionic phosphorylcholines. **P. Uhlmann**, A.S. Münch

11:00 698. Adsorption of rare earth elements (REEs) by DNA functionalized mesoporous carbon. D. Saha, **C.E. Unsworth**

11:20 699. Polyphenol-inspired coatings for membrane surface engineering. **L. Zhang**, X. Xiao, x. tantai, n. yang

11:40 700. From molecular arrangement to macroscopic wetting of solid-confined ionic liquids. **B. Wang**, L. Li

Section F

Pennsylvania Convention Center
121A

Basic Research in Colloids, Surfactants & Interfaces

Basic Research

R. Nagarajan, *Organizer*

J. M. Franck, P. Habdas, *Presiding*

8:00 701. Extract non-thermal fluctuation of active colloid particles in a quadratic potential well by deconvolution. **C. Shen**, L. Li, J. Jiang, H. Ou-Yang

8:20 702. Interplay between wetting and transport in mesoporous thin films. **A. Khalil**, A. Andrieu-Brunsen

8:40 703. Magnetic single- and dual-resonant relaxometry to probe the dynamics of water molecules under confinement. **J.M. Franck**

9:00 704. Experimental and computational VSFS studies on the influence of NaCl on methylglyoxal surface adsorption and hydration state at the air-water interface. **B. Gordon**, S. Wren, G. Lindquist, M.L. Crawford, N.A. Valley, L.F. Scatena, F. Moore, G.L. Richmond

9:20 705. Modeling the impact and bounce of droplets at a horizontal solid plate considering the convection-diffusion behavior of surfactant. **Y. Ge**, **W. Wang**, H. Jin, K. Li, Z. Yu, J. Gong

9:40 706. Single particle motion in dilute colloidal suspensions. **P. Habdas**, R. Zhang

10:00 707. Janus droplet impacting on superamphiphobic surfaces. **f. yu**, X. Deng

10:20 708. Encapsulation of water droplet with silica precursor in o/w emulsions by SPG method. **R. Saito**, H. Kiyosawa

10:40 709. Influence of polyelectrolyte architecture on the electro-kinetics and dewaterability of industrial MBR activated sludge. **M. Nasser**, S. Yousefi, I. Hussein, R. Shawabkeh

11:00 710. Evidence for surface-active pyruvic acid oligomers products at the air-water interface: Combined experimental and computational VSFS study. **B. Gordon**, L.F. Scatena, F. Moore, G.L. Richmond

11:20 711. Aqueous exfoliation of α -zirconium phosphate using mixed tetraalkylammonium hydroxides. **H. Ding**, L. Sun

11:40 712. UV-trained and metal-enhanced fluorescence of tetrapyrroles and tetrapyrrole-based nanoparticles. **P. Fathi**, A. Roslind, K. Mehta, M. Esch, K. Zhang, D. Pan

Pennsylvania Convention Center
121B

Bacterial Interactions with Soft Materials

Antibacterial Surfaces & Agents

D. Lee, M. M. Santore, *Organizers*

D. D. Bendejacq, *Organizer, Presiding*

M. Shave, *Presiding*

8:00 713. Controlled delivery of signaling molecules using magnetic micromotors. **S. Das**

8:20 714. Glycoconjugate-functionalized magnetic nanoparticles: Tool for selective killing of targeted bacteria via magnetically hyperthermia. B.D. Fellows, C. Taylor, A. Samstag, T. Tzeng, **O.T. Mefford**

8:40 715. Bacterial interactions with quaternary ammonium surfactants. **c. burel**, M. Caprioglio-chase, A. Kala, L. Gage

9:10 716. Towards an antimicrobial flexible nanopillar hydrogel film with tunable stiffness. **S. Heedy**, M. Marshall, J. Luo, J. Pineda, E. Pearlman, A.F. Yee

9:30 Intermission.

9:40 717. Enzyme responsive supramolecular approach for strain-selective killing of pathogenic bacteria. **T. Mohammed Koyasseril Yehiya**, A. García-Heredia, F. Anson, P. Rangadurai, S. Siegrist, S. Thayumanavan

10:00 718. Rational design of anti-fouling surfaces to control bacterial biofilms. **D. Ren**

10:30 719. Interactions of motile bacteria with interfaces of liquid crystals. **N.L. Abbott**

11:00 720. Fabrication of oil-infused anti-biofouling coatings on the surfaces of flexible polymer tubing. **H. Agarwal**, K.E. Nyffeler, T.A. Hacker, S.P. Palecek, H.E. Blackwell, D.M. Lynn

11:20 721. Probing bacterial-surface interactions of antimicrobial nanocomposites by utilizing an epi-fluorescence optical tweezer. **D.M. Danhausen**, A.N. Linhart, H.R. Lange, J.J. Keleher

Section H

Pennsylvania Convention Center
103C

Metal Oxides, Metal Organic Frameworks (MOFs) & Polyoxometalates: Heterogeneous Reactivity & Catalysis under Environmentally Relevant Conditions

G. Peterson, J. H. Wynne, *Organizers*

B. T. Rasley, *Organizer, Presiding*

8:00 Introductory Remarks.

8:10 722. Solid and solution based reactivity of polyoxometalate and tungsten peroxo species. **S.L. Giles**, J. Lundin, G. Daniels, B.T. Rasley, J.H. Wynne

8:30 723. Impact of atmospheric contamination on zirconium (hydr)oxide surface chemistry using *operando* infrared spectroscopy. **R. Balow**, S. Jeon

8:50 724. Impact of defect sites in Zr-based MOFs for chemical warfare agent degradation. **B.J. Gibbons**, A.J. Morris

9:10 725. Tuning the photocatalytic activity of metal-organic frameworks toward the oxidation of sulfur mustard in military relevant conditions. **J.B. DeCoste**

9:30 Intermission.

9:45 726. Rapid screening and development of MOFs for degradation of warfare agents. **S. Cohen**, J. Palomba, M. Kalaj

10:05 727. Decomposition of chemical warfare agent simulants by photochemical and chemical mechanisms: New materials and approaches. **S.L. Giles**, A. Purdy, A. Sousa-Castillo, B. Simpkins, A. Govorov, M. Correa-Duarte, O.A. Baturina

10:25 728. Capture and transport of nerve agent simulants within UiO-67 MOFs. **I. Goodenough**, J.P. Ruffley, T. Luo, M. Richard, N.L. Rosi, K. Johnson, E. Borguet

10:45 729. Spectroscopic investigations of sarin adsorption and decomposition on metal oxides, metal hydroxides, and metal organic frameworks under vacuum and ambient conditions. **M.L. McEntee**, E. Durke, W.O. Gordon, A. Balboa, J. Mahle, M. Browe, J.R. Morris, G. Peterson

11:05 730. New *operando* studies of chemical agent interaction with MOFs and POMs at the gas-surface interface, and studies of HD catalysts. **W.O. Gordon**, A. Balboa, M.L. McEntee, J. Navin, C.J. Karwacki

11:25 Concluding Remarks.

Pennsylvania Convention Center
113B

Acoustically-Active Colloids for Imaging & Therapy

Nanoparticles for Phase Change & Cavitation

J. V. Jokerst, E. P. Kharlampieva, *Organizers*

A. P. Goodwin, *Organizer, Presiding*

C. de Gracia Lux, *Presiding*

8:00 731. Design of a “nanoscale boiling chip”: Science behind and applications of functionalized mesoporous silica nanoparticles for acoustic cavitation and nanoparticle propulsion. **A.P. Goodwin**

8:30 732. Acoustically active multifunctional nanomaterials improving stem cells therapy efficacy in myocardial infarcted mice. **F. Chen**, J.V. Jokerst

9:00 733. Surface engineering of mesoporous silica nanoparticles to create highly echogenic nanoscale ultrasound contrast agents. **A. Yildirim**

9:20 734. Perfluorobutane nanoemulsions facilitated transcranial ablation. **C. Peng**, t. sun, C. Power, Y. Zhang, T. Porter, N. Mcdannold

9:50 Intermission.

10:10 735. Cavitation-enhanced drug delivery: Microscale transport from nanoscale particles. **C. Coussios**

10:40 736. Development of pH-sensitive microbubbles for ultrasound cancer detection. **M.W. Burns**, D. Boyd, R.F. Mattrey, J. Lux

11:00 737. Intravenous immunoglobulin aggregation induced by cavitation resulting from mechanical shock: Effect of surface wettability. **S. Movafaghi**, H. Wu, I.F. Urdaniz, T.W. Randolph, A.P. Goodwin

Section J

Pennsylvania Convention Center
113C

Biomaterials & Biointerfaces

J. Kaar, J. D. Schiffman, *Organizers, Presiding*

8:00 738. Mediating enzyme structure and dynamics on polymer brushes by tuning the enzyme-brush interface. J. Weltz, D. Kienle, D.K. Schwartz, **J. Kaar**

8:20 739. Computational investigation and design of the bio/nano interface. **J. Pfaendtner**, J. Sampath, S. Alamdari

8:40 740. Organic matrix-mediated growth and control of a pathologic biomineral. G. Mallam, A. Chakrabarti, **M. Tsianou**

9:00 741. Selected DNA aptamers as mineralization templates and affinity reagents for calcium biomaterials. **A.E. Gerdon**

9:20 Intermission.

9:40 742. Hydroxyapatite nanoparticle-stabilized polyHIPES as osteoinductive bone grafts. **E. Cosgriff-Hernandez**, P. Dhavalikar, D. Jenkins, N. Rosen, M.S. Silverstein

10:00 743. Engineering natural bone matrix to reproduce interface biology at bone and marrow. **J. Lee**

10:20 744. Insights into the binding of all 20 natural amino acids to (hkl) facets of hydroxyapatite as a function of pH. **S. Hoff**, J. Liu, H. Heinz

10:40 745. Disruption of lipid vesicles induced by amphiphilic Janus particles. **J.T. Wiemann**, Z. Shen, H. Ye, Y. Li, Y. Yu

Colloidal Assembly of Renewable Materials

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Bridging Surface Science to Catalysis

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Nanocellulose: From Fundamentals to Function

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Polymer Colloids: Synthesis, Analysis, Modeling & Application

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Polymer Colloids: Synthesis, Analysis, Modeling & Application

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WEDNESDAY AFTERNOON

Section A

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*
R. Chandrawati, C. E. Sing, *Presiding*

1:30 746. Self-assembled organic dye aggregates in polymersomes with high loadings. **K.P. Johnston**, B. Chandalvaie, E. Moaseri, S. Han, M.R. Kawelah, P. Wu, T. Truskett, K. Sokolov

1:50 747. Soft materials synthesis from template-polymerized polyelectrolyte complexes. **K. Choudhuri**, U.K. de Silva, J. Bastian, J. Berger, Y. Lapitsky

2:10 748. Polydiacetylene-based sensors to detect food spoilage. **R. Chandrawati**

2:30 749. Amphiphilic hyperbranched-linear-hyperbranched ABA block copolymers with nanomicellar self-assembly as novel drug solubilization agents. G. Kasza, D. Fecske, G. Gyulai, K. Horváti, M. Szabó, G. Szarka, É. Kiss, A. Domján, S. Bösze, **B. Ivan**

2:50 750. Impact of the wet-dry cycle on polyelectrolyte complex coacervates. **H.M. Fares**, C.D. Keating

3:10 Intermission.

3:25 751. From monomer sequence to self-assembly in polyelectrolyte coacervation. G. Ong, T. Lytle, **C.E. Sing**

3:45 752. Rationally designed polymers for intracellular protein delivery. **D.C. Luther**, Y. Lee, R. Goswami, T. Jeon, V. Clark, S. Gopalakrishnan, J. Elia, V.M. Rotello

4:05 753. From order to disorder: Computational design of triblock amphiphiles that self-assemble with 1-nm domains. **Z. Shen**, V. Vernadskaja, J. Chen, T.P. Lodge, J.I. Siepmann

4:25 754. Peptide controlled assembly of anion exchange ionomer thin films on electrode surfaces for promoting microphase separation and ionic conductivity. **Z. Su**, S. Kole, C.G. Arges, J. Renner

4:45 755. High throughput tools to study the assembly of single-chain polymer nanoparticles. R. Upadhyaya, **A.J. Gormley**

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

M. L. Longo, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*

J. Katsaras, *Organizer, Presiding*

M. Nagao, *Presiding*

1:30 756. Unusual complete unbinding of single-tail tethered lipids. **K. Shih**, G. Leriche, J. Fang, J.C. Yang, M. Nieh

1:55 757. Memory and learning in biomolecular soft materials. **C.P. Collier**, J. Najem, R. Williams, G. Taylor, M. Hasan, R. Weiss, S. Sarles, G. Rose, B. Doughty, A. Belianinov, C. Schuman

2:20 758. Carotenoids promote lateral packing and condensation of lipid membranes. **X. Cheng**

2:45 759. Lipid domain in freestanding bilayer lipid membrane on microwell depending on glycolipids concentration. **A. Oshima**, Y. Kakimoto, Y. Ueno, R. Tero

3:10 760. Dynamical oligomerisation of histidine rich intrinsically disordered proteins is regulated through zinc-histidine interactions. **S. Lenton**, C. Cragnell, L. Staby, B.B. Kragelund, M. Skepö

3:35 761. Membrane fusion studies of liposomes comprised of pure synthetic, Archaea-inspired bipolar lipids. G. Leriche, D. Stengel, D. Onofrei, T. Koyanagi, G.P. Holland, **J.C. Yang**

4:00 762. DNA mechanotechnology shows that integrin receptors apply pN forces in podosomes formed on supported lipid membranes. r. glazier, **K. Salaita**

4:25 763. Uncoupling between the lipid membrane dynamics of differing hierarchical levels. C. Xie, S. Chang, E. Mamontov, L. Stingaciu, **Y. Chen**

4:50 764. Effects of domains on matrix dynamics in phase-separated model membranes. **S. Chakraborty**, J.M. Corriolo, E.G. Kelley, F. Heberle, J. Katsaras, B. Sumpter, M. Tyagi, M. Nagao, R. Ashkar

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Nanomaterial Design & Application

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, *Organizers*
M. A. Firestone, *Presiding*

1:30 765. Biodegradable, photodynamic-responsive, near-infrared fluorescent carbon dot probes for Hypoxia detection. **I. Srivastava**, K. Brent, E. Altun, S. Pandit, D. Pan

1:50 766. Controlled gold nanoparticle (AuNP) aggregation: Aggregate toxicity in NaCl. **C. Vandermeer**, S.E. Lohse

2:10 767. Array-based on differential switchable photoluminescence of macromolecularly “caged” carbon nanoparticles for the discrimination of human cells. **M.M. ALAFEEF**, I. Srivastava, J. Narendran, D. Pan

2:30 768. Encapsulation of low melting point metal nano/micro particle phase change materials for thermal energy storage. **S. Zhu**, T. Yonezawa

2:50 769. Plasmon-enhanced chemical conversion using copper selenide nanoparticles. **X. Gan**, E. Keller, C. Warkentin, S. Crawford, R.R. Frontiera, J. Millstone

3:10 770. Nanoenergetics by plasma processing. **P.P. Agarwal**, T. Matsoukas

3:30 771. Modified surface-limited redox replacement for template-free nanodeposition. S. Budkin, **D.A. McCurry**

3:50 772. Exploiting the physiochemical interactions between single-walled carbon nanotubes and hydrogel microspheres to afford chirally pure nanotubes. **K.C. Tvrdy**, B.P. Watts, C.H. Barbee

4:10 773. Increasing the antimicrobial properties of GO-CS membrane for using in water treatment. **R. Daneshpour**, L.F. Greenlee

4:30 774. Electrophoretic plasmonic ink for dynamic color display. **Z. Jiapeng**, J. Wang, L. Shao

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*
F. Bai, *Organizer, Presiding*
X. Zhang, *Presiding*

1:30 775. Local luminescent probing of nanoparticle surface temperature via Eu^{3+} decay time on Y_2O_3 hosts. **N. da Silva Moura**, E.P. Barbin, K. R. Bajgiran, J. Dorman

1:50 776. Synthesis of core/shell nanoparticles in ionic liquids. **A. Antle**, L. Hill

2:10 777. Seed-mediated continuous synthesis of ferrite nanoparticles with sophisticated designed structures. **Z. Yan**, S. Fitzgerald, T. Crawford, O.T. Mefford

2:30 778. Highly conductive paper electrodes using metallic fusion of multilayered silver nanoparticles at room temperature. **Y. Song**, S. Lee, J. Cho

2:50 779. Synthesis of monodisperse intermetallic nanoparticles via size refocusing. **H. Ashberry**, J.T. Gamler, R.R. Unocic, S.E. Skrabalak

3:10 780. Synthesis of uncapped noble metal nanoparticles by laser reduction in liquid. L. Frias Batista, K. Kunzler, **K. Tibbetts**

3:30 781. Cross-linking approach to stabilizing stimuli-responsive colloidal crystals engineered with DNA. **S. Lee**, C. Zheng, K. Bujold, C.A. Mirkin

3:50 782. Structuring of rod-shaped nanoparticles using Langmuir-Blodgett assembly and investigation of their anisotropic properties. **I. Chae**, Z. Ounaies, S. Kim

4:10 783. Effective softness-dependent self-assembly behavior of polymer-grafted nanocrystals. **H. Yun**, Y. Lee, X. Meng, G. Stein, B. Kim

Section E

Pennsylvania Convention Center
119B

Surface Chemistry

Liquid Interfaces

S. L. Tait, *Organizer*

T. Burgo, T. B. Cavitt, A. Jitianu, *Presiding*

1:30 784. Visualizing the electrochemical impact of sulfide adlayer formation on single silver nanoparticles. **J.W. Monaghan**, K. Willets

1:50 785. Computational study of the brightening of II-IV quantum dots via hydride treatment. **L. Lystrom**, S. Kilina, S. Ivanov

2:10 786. Surface-directed self-assembly of metal-chelated nanoplatelets. **P. Fathi**, A. Roslend, M. Esch, D. Pan

2:30 787. Diversifying solvent selection for thermodynamic surface energy analyses. **T.B. Cavitt**, J.G. Carlisle, R.A. Brooks, L. Scott, P.R. Patel

2:50 788. Molecular polarizability in open ensemble simulations of aqueous nanoconfinements under electric field. **S. Zamfir**, D. Bratko, F. Moucka, A. Luzar

3:10 789. Protic liquid solvents at the hydrophilic mineral/liquid interface probed by sum frequency generation spectroscopy. **T. Bui**, L.A. Velarde

3:30 790. Electro spray deposition of phenyl modified melting gel coatings. A. Gamboa, J.M. Mercado, J. Guzman, L. Lei, L.C. Klein, J.P. Singer, **A. Jitianu**

3:50 791. Spontaneous mosaic of charges and high potential gradients on dielectric surfaces formed by evaporating liquid drops. **T. Burgo**, L. Ferreira

4:10 792. VSFS studies of the synergistic co-adsorption of CTAB and hexanol at the oil-water interface. **B. Gordon**, R. Ciszewski, B. Muller, G.L. Richmond

4:30 793. Molecular investigation of the three phase contact line friction of electrowetted nanodroplet. **D. Chakraborty**, M. Chakraborty

4:50 794. Molecular surface bulk equilibrium in aerosols. **Y. Wu**, Y. Wu, J. Ma, H. Dai

5:10 795. Mechanisms underlying the simultaneous formation of hydrogen peroxide and reducing behavior in microdroplets of water. **A. Gallo Junior**, J. Petry, M. Ibrahim, N. Musskopf, A. Alruwaithi, H. Mishra

Pennsylvania Convention Center
121A

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, *Organizer, Presiding*

X. Zhang, *Presiding*

1:30 796. Tunable aggregation-induced emission as an indicator of intermolecular distance in supramolecular assembly. **X. Sun**, H. Li, S. Zhang, J. Luo, T. Liu, S.Z. Cheng, T. Liu

1:50 797. Dipole-emitting semiconductor nanorods for luminescent solar concentrators. **R.J. Ratnaweera**, N.J. Gripp, S. Kumar, M.T. Sheldon

2:10 798. RF mediated release of fluorophores from magnetic nanoparticles by hysteretic heating. **j.S. casey**, M. Abu-Laban, J. Becca, B. Rose, K. Strickland, J. Bursavich, J. McCann, C.N. Pacheco, A. Attaluri, D.J. Hayes

2:30 799. Crack-induced colloidal rods. **J. Xie**, X. Deng

2:50 800. Continuous production of supramolecular cochleates using facile off-the-shelf flow focusing device. **S. .**, Z. Judeh

3:10 801. Assembly of covalently-linked quantum dot heterostructures: Characterization of excited-state charge-transfer dynamics in dispersed and multilayered systems. **C. McGranahan**, G.E. Wolfe, A. Falca, D. Watson

3:30 802. Effect of duty cycle on self-assembling superparamagnetic colloids in the toggled-field. **H. Kim**, E.M. Furst

3:50 803. Synthesis and characterization of water-soluble phosphine gold nanoclusters. **W. Ndugire**, H. Raviranga, J. Lao, O. Ramstrom, M. Yan

4:10 804. Equilibrium assembly of metal oxide nanocrystals using dynamic covalent chemistry. **M.N. Dominguez**, J. Maier, S. Valenzuela, M. Howard, D.J. Milliron, E.V. Anslyn, T. Truskett

Section G

Pennsylvania Convention Center
121B

Bacterial Interactions with Soft Materials

Bacteria-Surface/Interface Interactions II

D. D. Bendejacq, D. Lee, M. M. Santore, *Organizers*
D. Lee, *Presiding*

1:30 805. Swimming behavior of bacteria increases number and duration of bacterial-surface engagements. **M. Shave**, M.M. Santore

1:50 806. Gallery of trajectories for motile bacteria at fluid interfaces. **J. Deng**, M. Molaei, N. Chisholm, K.J. Stebe

2:10 807. Bacterial mechanosensing upon attachment to gels of different stiffness: Tale of two (or more?) steps. **V.D. Gordon**, L. Wang, J. Blacutt

2:40 808. Reversible attachment, surface sensing, and memory in early bacterial biofilm development. **G. Wong**

3:10 Intermission.

3:20 809. Impact of variations in soft non-adhesive coatings on the swimming character and surface contact of *E. coli*. **M.M. Santore**, M. Shave

3:40 810. Bacterial interactions with soft medical device materials. s. lee, H. Wang, Y. Wang, S. Hainsworth, D. Ren, **k.s. phillips**

4:10 811. Bacteria as living patchy colloids: Phenotypic heterogeneity in surface adhesion. **W. Poon**

4:40 812. Surface energy analyses to inform the inhibition of biofilm formation. **T.B. Cavitt**, J.G. Carlisle, D.S. Oskin, V.N. Ghebraniou, E.B. Henry, W. Wei

5:00 813. Probing interactions between synthetic bilgewater emulsion and biofilms. **X. Yu**, J. Son

Section H

Pennsylvania Convention Center
103C

Metal Oxides, Metal Organic Frameworks (MOFs) & Polyoxometalates: Heterogeneous Reactivity & Catalysis under Environmentally Relevant Conditions

G. Peterson, B. T. Rasley, *Organizers*
J. H. Wynne, *Organizer, Presiding*

1:30 Introductory Remarks.

1:40 814. *In operando* Identification of active catalytic species during hydrolysis of DMNP by zirconium MOFs. **V. Devulapalli**, M. Richard, T. Luo, N.L. Rosi, E. Borguet

2:00 815. Programmable and smart sponges. **O.K. Farha**

2:20 816. Controlling the reactivity of the $[P_8W_{48}O_{184}]^{40-}$ inorganic ring and its assembly into POMZite inorganic frameworks. **L. Cronin**

2:40 817. Advanced functional films from $\{Nb_{24}\}$ polyoxometalates. **T. Rahman**, N. P. Martin, M.D. Nyman

3:00 Intermission.

3:15 818. Metal-organic framework (MOF) structure, ligand dynamics, and electrochemical behavior as supercapacitor electrodes. **B. Dyatkin**, C.A. Klug, C. Hangarter, M.C. Palenik, J.B. Miller, M. Laskoski

3:35 819. Surface and porosity modification of UiO-66 nanostructures using calixarenes. U. Jeong, N. Dogan, M. Garai, T.S. Nguyen, J.F. Stoddart, **C.T. Yavuz**

3:55 820. Surface-catalyzed solvent-free “click” cycloaddition demonstrated for CuO nanowires sensitization. **C. He**

4:15 821. Acetone as a probe for UiO-67 series MOFs. **M. Boyanich**, I. Goodenough, V. Devulapalli, L. Castellana, M. Richard, T. Luo, M.L. De Souza, N.L. Rosi, E. Borguet

4:35 822. Mechanistic study of the secondary cation release from $Li(Ni_{1/3}Mn_{1/3}Co_{1/3})O_2$. **D.T. Jones**, J. Bennett, R.J. Hamers, S.E. Mason

4:55 Concluding Remarks.

Section I

Pennsylvania Convention Center
113B

Acoustically-Active Colloids for Imaging & Therapy

Acoustically-Mediated Delivery & Therapy

A. P. Goodwin, J. V. Jokerst, *Organizers*
E. P. Kharlampieva, *Organizer, Presiding*

1:30 823. Ultrasound-active theranostic microcapsules for imaging guided chemotherapy. **E.P. Kharlampieva**

2:00 824. Imaging the laser-triggered release of therapies from nanodroplets for the treatment of preeclampsia. S. Nwia, M. Escott, D. Lawrence, **C. Bayer**

2:30 825. Development of novel polyplex-conjugated microbubbles as vectors for gene delivery. **S. Khorsandi**, R. Pandey, R.F. Mattrey, J. Lux

2:50 826. Potentiation of cancer therapies with drug-loaded bubbles and droplets: Challenges and opportunities. **N. Matsuura**

3:20 Intermission.

3:35 827. Self-assembled drug-loaded biliverdin nanoparticles for combinatorial cancer therapy and photoacoustic imaging. **P. Fathi**, N.W. Pino, H. Knox, M. Esch, J. Chan, D. Pan

3:55 828. Echogenic xenon microbubbles for ultrasound-mediated theranostic applications. **R. Chattaraj**, M. Hwang, D.A. Hammer, C. Sehgal, D. Lee

4:15 829. Potential side effects and opportunities of co-existence of microbubbles and perfluorocarbon nanodroplets in the circulation. C.J. Brambila, J. Lux, R.F. Mattrey, D. Boyd, M.A. Borden, **C. de Gracia Lux**

Section J

Pennsylvania Convention Center
113C

Biomaterials & Biointerfaces

J. Kaar, J. D. Schiffman, *Organizers, Presiding*

1:30 830. Effect of CaS nanostructures in the proliferation, survival and cell cycle of human adenocarcinoma and normal fibroblast cells *in vitro*. **M. Castro**

1:50 831. Using heparin-coated magnetic nanoparticles to treat neointimal hyperplasia. N. Ghobrial, D. Dean, **O.T. Mefford**

2:10 832. Controlling microbial dynamics with nanomaterials and substrate conductive biointerfaces. **T.H. Niepa**

2:30 833. Super-resolution imaging of nanoscale chemical heterogeneity on zymosan particles. **W. Li**, H. Wang, X. Xu, Y. Yu

2:50 834. Blood-brain barrier penetrating nanoparticle delivery of siRNA for glioblastoma multiforme. **J. Gregory**, P. Kadiyala, R. Doherty, M. Cadena, E. Ruoslahti, P. Lowenstein, M. Castro, J. Lahann

3:10 Intermission.

3:30 835. Ionic liquids for oral monoclonal antibody delivery. **P. Angsantikul**

3:50 836. Caged surfactants: New class of pH dependent surfactants for the delivery of biotherapeutics. **J. Raise**, H. Han, D. Kerr, C. Taing, E. Ruan, N. Murthy

4:10 837. Folate-targeted liposomes for rheumatoid arthritis therapy. **E. Nogueira**, A. Cavaco-Paulo

4:30 838. Photoswitching liposome surface charge to deliver membrane impermeable cargos *in vivo*. **A. Kros**

Colloidal Assembly of Renewable Materials

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Bridging Surface Science to Catalysis

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Nanocellulose: From Fundamentals to Function

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Polymer Colloids: Synthesis, Analysis, Modeling & Application

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Polymer Colloids: Synthesis, Analysis, Modeling & Application

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THURSDAY MORNING

Pennsylvania Convention Center
115C

Self-Assembly in Polymer Systems

S. Förster, R. Nagarajan, M. V. Tirrell, *Organizers*

M. A. Ilies, L. E. Prevette, *Presiding*

8:00 839. Layer-by-layer nanoparticles for antibiotic delivery and biofilm eradication. **E. Deiss-Yehiely**, Y. Rong, S. Thayumanavan, P.T. Hammond

8:20 840. Colloidal stability and biodistribution of polymeric nanocarriers encapsulating peptides and proteins produced by inverse Flash NanoPrecipitation. **C. Markwalter**, R. Pagels, L.Z. Wang, S. Jahangir, P. Padakanti, O. Sharaf, E. Blankemeyer, S. Carlin, R. Mach, A. Alavi, R.K. Prudhomme

8:40 841. Polycation-G-DNA binding thermodynamics and complex stability. **L.E. Prevette**, T.C. Marsh

9:00 842. Layer-by-layer hydrogen-bonded films of synthetic polymers with antioxidant activity. **R. Hlushko**, J. Ankner, S.A. Sukhishvili

9:20 843. Phase behavior and glass transition of polyelectrolyte complexes. **M. Yang**, Z. Digby, J. Schlenoff

9:40 Intermission.

9:55 844. Self-assembled polymeric micelles with tuned interfaces for docetaxel delivery to triple negative breast cancer. U. Satyal, V.D. Sharma, H.H. Hensley, **M.A. Ilies**

10:15 845. Impact of ligand dynamics on thermo-mechanical behavior of self-assembled nanoparticle superlattices. T. Patra, H. Chan, P. Podsiadlo, X. Lin, E. Shevchenko, S. Sankaranarayanan, **B.M. Narayanan**

10:35 846. Kinetically-arrested polymer nanostructures from amphiphilic mikto-grafted bottlebrushes in solution: Simulation study. **B. Gumus**, A. Ramirez-Hernandez

10:55 847. Swelling and aggregation dynamics in Au@PNIPAM colloid systems determined by temperature jump spectroscopy. **B. Tadjell**, E. Ponomareva, M. Karg, P. Mulvaney

11:15 848. Force spectroscopy of a biomimetic polymer in molecular simulations via perturbation theory. **A. Chaimovich**, C. Leitold, K. Kremer, C. Dellago

Section B

Pennsylvania Convention Center
118B

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, M. L. Longo, M. Nieh, A. N. Parikh, *Organizers*
S. Muralidharan, *Organizer, Presiding*

8:00 849. Extracellular signaling molecule indole increases permeability of bacterial membranes. **T. Wu**, M.J. Wilhelm, J. Ma, Y. Li, H. Dai

8:15 850. Observation of cell-free synthesized ion channel molecules in artificial lipid bilayer by atomic force microscopy. **M.W. Goh**, H. Inoue, Y. Tozawa, R. Tero

8:30 851. Physicochemical changes arising in zwitterionic phospholipid liposomes with the presence of salt. **J. De Mel**, G. Schneider

8:45 852. Effect of oxidised lipids on bilayer structure and deposition. **E. Gustafsson**, A.R. Rennie, M. Hellsing, K. Thompson, T. Bowden

9:00 853. Quantitative membrane partitioning studies of ecologically relevant synthetic organic molecules. **K. Duncan**, C.A. Gobrogge, R. Trousdale, W.H. Steel, R.A. Walker

9:15 854. Highly efficient growth of giant unilamellar vesicles in high salt solutions using nanocellulose paper. **J. Pazzi**, A. Subramaniam

9:30 855. Myelin figures under stress: Complex morphologies and dynamic instabilities. **P.D. Sambre**, Z. Liu, W. Su, P. Deshmukh, J.C. Ho, A.N. Parikh

9:45 856. Synthetic vesicles encapsulating a macromolecular circadian oscillator viable for days. **A.Z. Li**, A. LiWang, A. Subramaniam

10:00 857. Mn doped ZnSe/ZnS quantum dot (QD) species show increased fluorescence emission when encapsulated in a lipid bilayer bicelles. **J. Fang**, J. LoTurco, M. Nieh

10:15 858. Entropic forces mediate topological division and shape instabilities in membrane compartments. **Z. Liu**, P.D. Sambre, W. Su, P. Deshmukh, J.C. Ho, A.N. Parikh

10:30 859. FRET-based sensor for measuring steric pressure during membrane remodeling. **J. Houser**, C. Hayden, J. Stachowiak

10:45 860. Solvent-dependent relaxation of PRODAN: Quantitative simulation and ultrafast spectroscopy. **S. Baral**, L. Gundlach, B. Baumeier, E. Lyman

11:00 861. Clathrin-mediated endocytosis of weakly internalized receptors is protected against competition. **A. DeGroot**, C. Zhao, S. Gollapudi, M. LaMonica, C. Hayden, J. Stachowiak

Section C

Pennsylvania Convention Center
118C

Nanomaterials

Nanomaterial Design & Application

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, *Organizers*
E. A. Dolgoplova, *Presiding*

8:00 862. Integrating machine-learning and nanomaterial for precision theranostic nanomedicine. **M.M. ALAFEEF**, I. Srivastava, D. Pan

8:20 863. Design and application of well-defined, anisotropic TiO₂ nanomaterials for rational studies in catalysis. **G.C. Johnson**, S. Zhang

8:40 864. Electric field-directed particle-based reconfigurable scattering masks for lensless imaging. **J.R. Miller**, C. Wang, Z. Lui, C.D. Keating

9:00 865. Green synthesis and formation of metal and alloy nanoparticles dispersed in liquid by magnetron sputtering. **M.T. Nguyen**, T. Yonezawa, L. Deng, Y. Chau

9:20 866. Single source precursor route to isolate controlled metal carbide and metal nanocrystals. **E.T. Nguyen**, G.F. Strouse

9:40 867. Development of indium phosphide-based quantum shells. **R. Toufanian**, A. Saeboe, A.M. Dennis

10:00 868. Different strategies to modulate the optical band gap of semiconducting two-dimensional materials. **M.A. Mahmoud**

Section D

Pennsylvania Convention Center
119A

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, *Organizer, Presiding*

X. Zhang, *Presiding*

8:00 869. Using metal-organic frameworks to spatially organize quantum dots. **E.A. Dolgoplova**, J. Watt, P. Goodwin, M. Dunlap, A.K. Van Orden, M.A. Firestone, J.A. Hollingsworth

8:20 870. Regioselective self-assembly of plasmonic supracolloids modulated by block copolymers with steric effects. **X. Lin**, Z. Nie

8:40 871. Femtosecond optical tweezers for tracking optically directed self-assembly of nanoclusters *in-situ*. **D. Goswami**

9:00 872. Surfactant-free synthesis and purification of gold nanoprisms. R. Ramírez-Jiménez, Á. Artiga, S.G. Mitchell, **R. Martín-Rapún**, J. de la Fuente

9:20 873. Susceptibility of superparamagnetic nanoparticles self-assembled in small clusters. **s. Sanoj**, P. Kral

9:40 874. Controllable synthesis and two-dimensional self-assembly of gold nanorings with tunable optical properties. **X. Lin**, Z. Nie

10:00 875. Poly(*N*-vinylpyrrolidone) end-groups influence shape-control of Ag nanocubes through Ag⁺ reduction kinetics. **S. Jharimune**, R.M. Rioux, Z. Chen, R. Pfukwa, J. Anderson, B. Klumperman

10:20 876. Controlled growth of colloidal nanoplate liquid crystals using temperature gradients. **D. Huang**, A. Shinde, Z. Cheng

10:40 877. Laser-based synthesis of functionalized gold nanoparticles in organic environments. P. Kumpf, M. Aly, C. Trout, J.C. Griepenburg, **S.M. O Malley**

11:00 878. Synthesis of reduced graphene oxide/carbon nanotubes composites and their colloidal behavior. **S. Azizighannad**, S. Mitra

Section E

Pennsylvania Convention Center
119B

Basic Research in Colloids, Surfactants & Interfaces

Rheology, Aggregation, Nanoparticles

R. Nagarajan, *Organizer*
H. Patel, Q. WANG, *Presiding*

8:00 879. Engineering rheological response in water-in-oil emulsions through mixtures of rhamnolipid and sophorolipid biosurfactants with silica particles. **C. Drakontis**, S. Amin

8:20 880. Aggregated colloidal suspensions under extensional flows. **R. Tao**, A. Forster, Z. Tsinas

8:40 881. Gelation in colloidal suspensions of rod-like particles of low to moderate aspect ratio. H. Lee, R. Murphy, **N.J. Wagner**

9:00 882. Withdrawn

9:20 883. Interactions between colloidal particles mediated by nonadsorbing polymers: Casimir and anti-Casimir effects. P. Zhang, **Q. WANG**

9:40 884. Application of colloidal functionalized layered silicates in drilling fluids. **H. Patel**, C. Thaemlitz

10:00 885. Unifying framework for testing frictional contact model and shear thickening in industrially relevant systems. **Y. Luo**, Y. Lee, K.A. Dennis, S.C. Brown, C. Velez, E.M. Furst, N.J. Wagner

10:20 886. Teaching the old mesoporous silica nanospheres (MSN) new tricks: Sensing capabilities. **D.R. Radu**, C. Lai

10:40 887. Lipid corona acquisition by engineered gold nanoparticles. **G. Chong**, I.U. Foreman-Ortiz, M. Wu, A. Bautista, C.J. Murphy, J.A. Pedersen, R. Hernandez

11:00 888. Enhancement of flocculation and dewaterability of MBR activated sludge using a hybrid system. **M. Nasser**, S. Yousefi, A. Benamor

11:20 889. Linear-nonlinear dichotomy rheological behavior of carbon black-filled polybutadiene/tetradecane solutions. **J. Zou**, X. Wang

Section F

Pennsylvania Convention Center
121A

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, T. Li, Y. Sun, G. Zou, *Organizers*

F. Bai, *Organizer, Presiding*

X. Zhang, *Presiding*

8:00 890. Tuning the dielectrophoretic assembly of dielectric particles through surface functionalization. **N.D. Burrows**, C.D. Keating

8:20 891. Nano-additive manufacturing. **S. Hunyadi Murph**, V. Majidi

8:40 892. Enhanced antioxidant activity of cerium oxide nanoparticles by surface modification and their applications. **Y. Hu**, V.L. Colvin, e. atherton

9:00 893. Effects of pH on the synthesis of TiO₂ brookite nanoparticles. **O. Love**, C. Rendon Bernot

9:20 894. Attenuation length versus packing density: Nitrogen based self-assembled small molecule film on copper with thermal treatment. **Z. Lee**, P. Hsu, C. Chi, Y. Tai

9:40 895. Transformation of bulk alloys to inorganic nanowires. **K. Turcheniuk**, F. Wang, S. Luo, A. Magasinski, A. Song, D. Lei, J. Benson, G. Yushin

10:00 Intermission.

10:10 896. How different polymer structures interact with *in-situ* formed metal sulfide particles in aqueous media. **L. Petrozziello**, M. Klapper, C. Kayser, T. Weil

10:30 897. Mechanistic studies on metal aerogels. **A. Eychmüller**, S. Jungblut, R. Du

10:50 898. Preparation porphyrin-based MOF cross nanosheet array films by electrochemistry for electrocatalysis. **Q. Li**, F. Bai

Section G

Pennsylvania Convention Center
121B

Bacterial Interactions with Soft Materials

Bacteria Under Confinement & Biofilms

D. Lee, M. M. Santore, *Organizers*

D. D. Bendejacq, *Organizer, Presiding*

M. Libera, *Presiding*

8:00 899. Theoretical framework to describe traveling waves of bacteria in porous media. **D. Amchin**, T. Bhattacharjee, F.S. Kratz, J.A. Ott, S.S. Datta

8:20 900. High(er) throughput screening for the design and testing of antifouling surfaces. **M. Shave**, D. Strickland, J. Hutchison, D.D. Bendejacq, R.J. Composto, D. Lee

8:40 901. Nanocultures: Controlled microbial communities in sessile drops. **T.H. Niepa**

9:10 902. Migration of bacteria in disordered media. T. Bhattacharjee, D. Amchin, J.A. Ott, **S.S. Datta**

9:30 Intermission.

9:40 903. Heterogeneous diffusion dynamics of micro-particles in pseudomonas aeruginosa biofilms. **X. MA**, G. Zeghari, R. Dreyfus, J. Hutchison, R.J. Composto, D. Lee, A.G. Yodh

10:00 904. Structuring microbial communities using 3D printing. **J.N. Wilking**, M.H. Fields

10:30 905. Spatial organization and 3D architecture of oral biofilms. **H. Koo**

11:00 906. Spatio-temporal evolution of micromechanics of pathogenic biofilms. **M. Molaei**, G. Hwang, K.J. Stebe, H.M. Koo

Section H

Pennsylvania Convention Center
115A

Basic Research in Colloids, Surfactants & Interfaces

Surfactant Systems

R. Nagarajan, *Organizer*

K. Sakurai, M. Tsianou, *Presiding*

8:00 907. Switchable surfactants: Molecular insights into carboxylate functionalized nanoemulsions. **M. Foster**, G.L. Richmond

8:20 908. Monodisperse platonic micelles part 6: Its kinetics and thermodynamics. **K. Sakurai**

8:40 909. Optical “blinking” event triggered by amphiphilic assemblies at liquid crystal interface. **M. Shivrayan**, M. Tsuei, N.L. Abbott, S. Thayumanavan

9:00 910. Simulation study of polymer CORALs: Densely packed tethered polymer nanoislands. **N. Chen**, C. McConnell, P.B. Moore

9:20 911. Surfactant-polymer association modulated by hydrophobicity of surfactant, polymer, or aqueous solvent. S. Kancharla, P. Alexandridis, **M. Tsianou**

9:40 912. Link between chemistry and properties for C_{iE_j} surfactants. **Z. Hinton**, N. Alvarez

10:00 913. Surfactant performance at the pressurized CO_2 -water interface. **Z. Hinton**, N. Alvarez

10:20 914. Low temperature interfacial solvation and morphology of marine hydrogels in sea spray aerosol proxy films. **K.A. Carter Fenk**, H.C. Allen

10:40 915. Polysaccharide extract from peanut sediment of aqueous extraction process as a novel Pickering stabilizer for oil-in-water emulsion. **j. Ye**, R. Yang, P. Li

11:00 916. Surface adsorption, aggregate structure and antibacterial activity of Gemini quaternary ammonium surfactants with carboxylic counterions. **X. Zhou**, S. Hu, Y. Wang, S. Ullah, J. Hu, H. Liu, B. Xu

Section I

Pennsylvania Convention Center
113B

Acoustically-Active Colloids for Imaging & Therapy

A. P. Goodwin, J. V. Jokerst, E. P. Kharlampieva, *Organizers*
R. Chattaraj, *Presiding*

8:00 917. Design and synthesis of phase-change contrast agents for ultrasound-based imaging. D. Li, **L.D. Pozzo**

8:20 918. Intravital microscopy of the ultrasound-triggered size conversion of microbubbles to nanobubbles. C. Pellow, E. Cherin, J. Tan, M. O'Reilly, C. Demore, K. Hynynen, D. Goertz, **G. Zheng**

8:40 919. Ultrasound-responsive biomaterials for optical tumor characterization and tissue engineering applications. **C.S. Ibsen**

9:00 920. Recombinant protein-stabilized microbubbles prepared using microfluidics for theranostic applications. C. Sehgal, D.A. Hammer, **D. Lee**

9:20 921. Direct emulsification of low boiling point perfluorocarbons nanodroplets with improved properties. **C. de Gracia Lux**, J. Lux, A.M. Vezeridis, A.M. Armstrong, R.F. Mattrey

9:40 922. Controlled microbubble inflation and drug release using perfluorocarbon nanodroplets. **C.J. Brambila**, J. Lux, R.F. Mattrey, D. Boyd, M.A. Borden, C. de Gracia Lux

10:00 923. Multi-cavity polymer particles for ultrasound-enhanced contrast and drug delivery. **J. Kwan**, X. Su, U. Jonnalagadda, C.V. Guerreiro Duarte, D. Das, I. Gupta, M. Pramanik, K. Ng

Section J

Pennsylvania Convention Center
113A

Biomaterials & Biointerfaces

J. Kaar, J. D. Schiffman, *Organizers, Presiding*

8:00 924. Nanoscale organization of ligand-receptor interactions modulates macrophage activation. **M. Li**, H. Wang, X. Xu, Y. Yu

8:20 925. Simple construction of electronic structures and their transfer to biological substrates using graphene oxide and commercial off-the-shelf inkjet printing. **K.E. Whitener**, S.P. Yoseph, W.K. Lee, D. Haridas

8:40 926. Design of spherical nucleic acids as vaccines against triple negative breast cancer. **C.E. Callmann**, C.A. Mirkin

9:00 927. Molecular mechanisms of the foreign body response: From scars on our skin to the foreign body capsule. **K. Sadtler**, C. MacIsaac, F. Zepeda, R. Langer, D.G. Anderson

9:20 928. Gelatin coated mesenchymal stem cells improve recovery post infarct. H. Peng, A. Gottipati, A. Abdel-Latif, **B. Berron**

9:40 Intermission.

10:00 929. Fabrication of silk fibroin with tunable hydrophobicity. **J. Fountain**, M.J. Hawker, V. Montanari, L. Hartle, L.M. Davis, D.L. Kaplan, K. Kumar

10:20 930. Fabrication of protein-based coatings for biomaterial applications. **S. Gopalakrishnan**, L. Wang, L. Zhang, S. Pan, A. Fernandez, J. Lee, Y. Lee, D.C. Luther, K. Li, S. Thayumanavan, X. Duan, Y. Han, V.M. Rotello

10:40 931. Self-assembly of glycine-histidine-glycine hydrogels. **L.J. Thursch**, M. Hesser, R. Schweitzer-Stenner, N. Alvarez

11:00 932. Context matters: Investigating the role of culture geometry and microenvironment cues in cell activation using innovative biomaterials-based tools. **A.M. Kloxin**

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