

COLL

Division of Colloid and Surface Chemistry

R. Nagarajan, *Program Chair*

SUNDAY MORNING

Section A

Ernest N. Morial Convention Center
Room 242

Nanoparticle Biomolecule Corona: From Fundamentals to Applications

W. Chan, M. Hadjidemetriou, K. Kostarelos, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 1. Relevance of the biomolecule corona for nanomaterial-microbe cross-talk. **R. Stauber**, S. Knauer, D. Westmeier

9:05 2. Spontaneous lipid corona formation at lipid bilayers. **F. Geiger**

9:25 3. Interfacially-stabilized polymeric nanosystems for drug delivery. **M.A. Ilies**, U. Satyal, J.A. Shif, V.D. Sharma

9:45 4. Dynamic remodeling of synthetic lipoproteins in blood serum solutions. **S.F. Gilmore**, S. Peters, P.T. Henderson, C. Blanchette, N. Fischer

10:05 Intermission.

10:25 5. Mechanisms of binding and assembly of complement factors on nanoparticles. **D. Simberg**, F. Chen, G. Wang, S.M. Moghimi, V.P. Vu

10:55 6. Gold nanoparticles and proteins: Quid pro quo. **L. Liz Marzan**

11:25 7. Protein interactions with stealth-coated gold nanoparticles. **N.T. Flynn**, A.W. Cheema, A.L. Code, M.T. Phan, A. Uchitelle, A. Webb

11:45 8. Structure and orientation of a small protein on a gold nanoparticle surface. **Y.R. Perera**, A. Huges, N. Fitzkee

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

Bacteria at Interfaces in the Environment

A. P. Goodwin, *Organizer*
V. Gordon, *Organizer, Presiding*

8:30 Introductory Remarks.

8:40 9. Using an environmentally-relevant panel of Gram-negative bacteria to assess the toxicity of polyelectrolyte-wrapped gold nanoparticles. **J.T. Buchman**, A. Rahnamoun, K.M. Landy, X. Zhang, A. Vartanian, L. Jacob, C.J. Murphy, R. Hernandez, C.L. Haynes

9:00 10. Force-modulated multivalent binding of fimbriated bacteria. **E. Reimhult**, A. Lundgren, P. van Oostrum

9:20 11. Clay-based microstructures as alternatives to chemical dispersants in bioremediation of crude oil: Studies with model marine organisms. **L.T. Swintoniewski**, M. Omarova, R. Blake, T. Yu, S. Zhang, A. Panchal, Y.M. Lvov, D. Zhang, V.T. John, D.A. Blake

9:40 12. Remodeling of fluid interfaces by bacteria. **D. Lee**, T.H. Niepa, L. Vaccari, R. Leheny, M. Goulian, K.J. Stebe

10:10 13. Structure and mechanics of microbial biofilms. **J. Wilking**

10:40 Intermission.

11:00 14. Programmable bacterial biofilms via growth microenvironments. **A. Hochbaum**

11:30 15. Bacterial interactions with immobilized liquid surfaces. **C. Howell, J. Aizenberg**

12:00 16. Understanding heterogeneous populations of *P. aeruginosa* at the single-cell level
. **C. Chang**

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 17. Molecular dynamics simulation study of alpha-tocopherol interaction with lipid bilayers. **S. Kavousi, B. Novak, D. Moldovan**

8:50 18. Amphiphilic polypeptoids connect nanoparticle containing lipid rafts onto lipid membranes through self-assembly. **V.T. John, Y. Zhang, T. Yu, M. Omarova, D. Zhang**

9:20 19. Systematic study of structure-function relationships in synthetic, archaea-inspired tetraether lipids. G. Leriche, T. Koyanagi, Y. Kim, K. Gao, D. Onofrei, O. Eggenberger, N.C. Gianneschi, G.P. Holland, M.K. Gilson, D. Sept, M. Mayer, **J.C. Yang**

9:50 20. Interplay between passive and active membrane mechanisms regulates the formation of the immunological synapse. **O. Farago**

10:20 21. Ultra coarse-grained molecular dynamics simulations of lipid bilayers. J. Carrillo, J. Katsaras, **B. Sumpter, R. Ashkar**

10:50 22. Phonon-mediated biological functions of a cell membrane. **M. Zhernenkov**

11:20 23. Melting and exchange kinetics of nano-crystalline micelles: Implications for lipid dynamics. **R. Lund**, N. Koenig, T. Zinn, L. Willner

11:50 24. Investigating the effects of changes in ligand density on leukocyte rolling, adhesion and binding kinetics. **G. Prabhukhot**, R. Banton, C. Eggleton

Section D

Ernest N. Morial Convention Center
R06

Chemistry of Molecular Electronics

Theory

Cosponsored by PHYS

M. S. Inkpen, G. C. Solomon, L. Venkataraman, *Organizers, Presiding*

8:30 25. Two-dimensional pi-conjugated covalent organic networks: Establishing chemical structure – electronic properties relationships. **J.E. Bredas**

9:00 26. Computational tools for chemical insight in molecular electronics. **G.C. Solomon**

9:20 27. Charge transport mechanisms in molecular junctions. **D. Segal**

9:50 28. First-principles calculations of charge transport: Weakly coupled and strongly coupled molecular junctions. **Z. Liu**, S. Refaely-Abramson, F. Bruneval, J. Neaton

10:10 29. In search of structure-activity relationships in transition metal-based molecular conductors. **J. Mcgrady**, V. Arcisauskaite, J. Lamb

10:40 Intermission.

10:50 30. Quantum-interference-enhanced thermoelectricity in single-molecule junctions. **C.J. Lambert**

11:20 31. Utilizing the helical frontier orbitals of cumulenes in molecular electronics. **M.H. Garner**, R. Hoffmann, A. Jensen, L. Hyllested, S. Rettrup, G.C. Solomon

11:40 32. Spin-polarized transport through molecular junctions from first principles.
C. Herrmann

12:00 33. Moving electrons: Quantum transport, time dependence, phonons, interference and probes. **M.A. Ratner**

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

H. Fan, *Presiding*

8:30 34. Bimetallic Janus nanocrystals. **Y. Xia**

9:00 35. Crystal phase-engineering of novel nanomaterials. **H. Zhang**

9:30 36. Understanding the removal pathways of dislocations in imperfectly attached nanocrystals using *in-situ* HRTEM. **J. Ondry**, M.R. Hauwiller, P. Alivisatos

9:50 37. Controlled syntheses of gold nanostars for stronger surface enhanced Raman scattering. **C. Jiang**

10:10 Intermission.

10:30 38. Fluorescence kidney functional imaging enabled by renal clearable gold nanoparticles. **J. Zheng**, M. Yu

11:00 39. Do nucleation and growth have to be twin events in nanoparticle formation?
Y. Sun

11:30 40. One-pot synthesis of heterostructured RuCu alloyed nanotubes. **H. Cheng**,
H. Zhang

11:50 41. Understanding the mechanism of non-equilibrium etching of gold nanocrystals through graphene liquid cell TEM. **M.R. Hauwiller**, L.B. Frechette, M.R. Jones, J. Ondry, P.L. Geissler, P. Alivisatos

12:10 42. Chemical soldering of nanoparticle assemblies for photovoltaic applications. **N.N. Kholmicheva**, M. Zamkov

Section F

Ernest N. Morial Convention Center
R09

Fundamental Studies of Mechanochemical & Tribochemical Processes at Interfaces

R. M. Espinosa-Marzal, W. T. Tysoe, *Organizers*
J. D. Batteas, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 43. Stress-assisted thermal activation in tribology: from friction and rheology to wear and tribo/mechanochemistry. **W.T. Tysoe**

9:05 44. First-principles modeling of the joint influences of catalysis and mechanical stress in tribopolymer formation. **A.M. Rappe**

9:35 45. Constituents of tribochemistry – molecule and surface at shearing interface: how would their chemical structure affect the critical activation volume of mechanochemical reaction? **S.H. Kim**

10:05 Intermission.

10:20 46. Mechanochemical synthesis, structure and properties of solid solutions of alkaline earth metal fluorides $M^a_xM^b_{1-x}F_2$ (M = Ca, Sr, Ba, Pb). **G. Scholz**

10:50 47. Emergence and applications of techniques for real-time monitoring of mechanochemical reactions. **T. Friscic**

11:20 48. Exploring pharmaceutical cocrystal diversity using liquid-assisted mechanochemical reactions. **W. Jones**

11:50 49. Dissipation pathways upon sliding a tip along the calcite-brine interface: Connection between nanotribology and mineral reactivity. **Y. Diao**, R.M. Espinosa-Marzal

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Nanoscience in Industry & Manufacturing

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

8:30 50. Improving mechanical properties in glassy polymer nanocomposites: Effect of molecular weight. **V. Bocharova**, A. Genix, A. Kisliuk, S. Zhao, A.P. Sokolov

8:50 51. Functional nanomaterials: Towards magnetically activated adhesives. **G. Davies**

9:10 52. Developing quantum-dot nanocomposites for high-performance luminescent solar concentrators. **A. Jackson**, M. Bergren, N. Markarov, K. Ramasamy, H. McDaniel

9:30 53. Real-time, *in situ* observation of aqueous corrosion initiation in nanostructured steel. **S.C. Hayden**, C. Chisholm, R.O. Grudt, W. Mook, A. Ilgen, D. Bufford, K. Hattar, T.J. Kucharski, I. Taie, K. Jungjohann, M. Ostraat

9:50 54. Light, but strong SiC foam for thermal insulation and electromagnetic interference shielding at elevated temperatures. **Z. Wang**

10:10 55. Volumetric, percolating metallic structures templated by laser-deposited carbon nanofoams: Applications in humidity sensing. **S. Nufer**, J.P. Salvage, A. Shmeliov, A. Brunton, A. Dalton

10:30 56. Unusual ion-exchange behavior of nanoparticulate oxides: Applications in food, energy, and water sectors. **A.W. Aplett**, C.K. Perkins, T. Reed

10:50 57. Nanoaptasensors based on gold nanotriangles for the efficient and selective detection of ochratoxin A via LSPR and SERS. **Y. Hernandez**, L. Lagos, B.C. Galarreta

11:10 58. Preparation and toughening performance investigation of epoxy resins containing carbon nanotubes modified with hyperbranched polyester. **I. Lu**, X. Liao

Section H

Ernest N. Morial Convention Center
Room 204

Basic Research in Colloids, Surfactants & Nanomaterials

Nanoparticle Synthesis & Assembly

R. Nagarajan, *Organizer*
F. Bai, *Presiding*

8:30 59. Precursor ion–ion aggregation in the Brust–Schiffrin synthesis of alkanethiol nanoparticles. **T. Graham**, R. Renslow, N. Govind, S.R. Saunders

8:50 60. Synthesis and characterization anisotropic rod-like colloids with thermoreversible short-range attractions: Towards a universal phase diagram for adhesive hard rod suspensions. **N.J. Wagner**, R.P. Murphy

9:10 61. Understanding self-assembly and ionic strength interactions of cellulose nanocrystals using isothermal titration calorimetry and rheology. **E. Facchine**, S. Jin, R.J. Spontak, O.J. Rojas, S. Khan

9:30 62. Every which way but loose: A single thermoresponsive diblock copolymer can form spheres, worms or vesicles in aqueous solution. **S.P. Armes**

9:50 63. Synthesis of anisotropic nanostructures through controlled symmetry breaking. **A.E. Kossak**, B. Stephens, Y. Tian, P. Liu, M. Chen, T.J. Kempa

10:10 64. Controlled self-assembly of porphyrin and catalytic applications. **F. Bai**

10:30 65. Tuning local nanoparticle arrangements and dynamical properties in polymer nanocomposites by grafting of small molecules. **A. Genix**, D. Musino, V. Bocharova, A.P. Sokolov, J. Oberdisse

10:50 66. Spectroscopy nanosensors based on Zika virus S_n1 antibodies linked to gold nanoparticles: A system optimization study. **R.L. Silveira**, J. Santos, J. Rubim, P. Corio

11:10 67. Three-dimensional assemblies of Fe_{2-x}Ni_xP ($0 \leq x \leq 2$) and Co_{2-y}Fe_yP ($0 \leq y \leq 2$) nanoparticles and their magnetic properties: Towards effective magnetic refrigerant materials. **M.A. Hettiarachchi**, S. Brock, E. Abdelhamid, B. Nadgorny

11:30 68. Concentric Nd(III)-sensitized core-shell upconversion nanoparticles for excitation with biobeneign wavelength. **C. Arboleda**, S. He, A. Stubelius, N. Johnson, A. Almutairi

Section I

Ernest N. Morial Convention Center
Room 205

ACS Award in Surface Chemistry: Symposium in honor of Stacey F. Bent

Atomic-Level Precision in Deposition & Etching

Cosponsored by WCC
A. V. Teplyakov, *Organizer*
H. Lee, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 69. Strategies for selective deposition and selective etching of metal oxide materials on patterned substrates. **F. Minaye Hashemi**

9:05 70. Topographically selective atomic layer deposition on 3D nanostructures for novel nanopatterning processes. **W. Kim**, S.F. Bent

9:35 71. Surface reactions for area-selective atomic layer deposition and thermal atomic layer etching of metals and dielectrics. **G. Parsons**

10:05 72. Surface chemistry of metal atomic layer deposition (ALD) precursors. **F. Zaera**

10:35 Intermission.

10:50 73. A tale of two coordination modes: Diaminoalkylsilane adsorption on dielectric and silicon substrates. **J. Kachian**

11:20 74. Surface chemistry of thermal atomic layer etching. **S.M. George**

11:50 75. Thin polymer films created by controlled vapor- and solution-phase surface polymerizations. **M. Lillethorup**, D.S. Bergsman, M. Kongsfelt, S. Pedersen, K. Daasbjerg, S.F. Bent

Section J

Ernest N. Morial Convention Center
Room 225

Basic Research in Colloids, Surfactants & Nanomaterials

Surfactants

R. Nagarajan, *Organizer*
K. Sakurai, *Presiding*

8:30 76. Effect of micelle structure and inter-micellar interactions on multicomponent diffusion in nonionic micellar solutions. **N.P. Alexander**, S.R. Dungan, R. Phillips

8:50 77. Molecular dynamics investigation of ionic interfacial partitioning in reverse micelles. **A.K. Sharma**

9:10 78. Transitions between non-equilibrium micelles. **F. Plamper**, N. Warren, A. Steinschulte

9:30 79. Platonic micelles part 1: Monodispersity and discreteness of the aggregation number of calix[4]arene-based micelles bearing non-ionic hydrophilic groups. **S. Fujii**, R. Takahashi, K. Sakurai

9:50 80. Platonic micelles part 2: Thermodynamic and kinetic consideration of the micelles with the discrete aggregation numbers and mono-dispersity. **K. Sakurai**, R. Takahashi, S. Fujii

10:10 81. Structural and thermodynamic impact of dipropylene glycol (DPG) on mixed surfactant system. **H. Jiang**, K. Vogtt, G. Beaucage, M.R. Weaver

10:30 82. Intermolecular headgroup interaction and hydration as driving forces for lipid transmembrane asymmetry. N. Smolentsev, C. Luetgebaucks, H. Okur, **S. Roke**

10:50 83. Force mapping and characterization of surfactant adsorbed on flat and patterned surfaces. **J. Hamon**, B.P. Grady, R. Tabor, A. Striolo

11:10 84. Electrochemical diffusion coefficients for cationic surfactants using ferrocene probes. **S.J. Bachofer**, B. Schepergerdes, M.D. Lingwood

11:30 85. Transport properties in micelle nanoreactors: Molecular modeling approach. **C. Callaway**, S. Jang, K.R. Hendrickson, N. Bond, S. Lee

11:50 86. Studying the Interaction of Hydrophobically modified Ethoxylated Urethane (HEUR) polymers with Sodium Dodecylsulfate (SDS) in aqueous solution. **M. Ibrahim**, P. Griffiths, M.W. Murray, A. Szczygiel

Elucidation of Mechanisms & Kinetics on Surfaces

Mechanisms & Selectivity

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Fluid-Solid Interfacial Phenomena at the Nexus of Energy & Geochemistry Research: A Symposium in Honor of David J. Wesolowski

Sponsored by GEOC, Cosponsored by COLL, ENFL, ENVR and INOR

LGBTQ+ Graduate Student & Postdoctoral Scholar Research Symposium

Emerging Applications of Organic & Biochemistry: Soil Science, Biomaterials & Synthesis

Sponsored by PROF, Cosponsored by ANYL[‡], BIOL[‡], BIOT, CHED, CMA, COLL, COMP[‡], CWD, ENVR, INOR[‡], MEDI[‡], ORGN, PHYS[‡], PMSE[‡], POLY[‡], PRES[‡],

WCC and YCC

Physical Chemistry of Ionic Liquids

Functional Ionic Liquids & Applications

Sponsored by PHYS, Cosponsored by COLL[‡]

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

SUNDAY AFTERNOON

Section A

Ernest N. Morial Convention Center
Room 242

Nanoparticle Biomolecule Corona: From Fundamentals to Applications

W. Chan, M. Hadjidemetriou, K. Kostarelos, *Organizers, Presiding*

2:00 87. Engineering protein coronas for applications in nanomedicine. **K. Hamad-Schifferli**

2:30 88. Biomolecular corona of gold nanoparticles formed in blood: Application for detection and diagnosis of infectious diseases and cancer. T. Zheng, **Q. Huo**

3:00 89. Nanoscale tools for biomarker discovery: The emerging role of biomolecule corona. **M. Hadjidemetriou**, K. Kostarelos

3:20 90. Protein coronas enhance polystyrene interactions with a model human erythrocyte membrane outer leaflet. **N. Ganji**, G.D. Bothun

3:40 Intermission.

4:00 91. Interaction of proteins with nanoparticles probed with non-optical methods.
W. Parak

4:30 92. Selective blood vessel deletion using nanoparticle-mediated drug delivery in zebrafish embryos. **A. Kros**

5:00 93. Protein, lipid membrane and cell interactions of PEGylated and POZylated superparamagnetic iron oxide nanoparticles. **E. Reimhult**, A. Lassenberger, N. Gal, S. Kurzhals, E. Benetti, R. Zirbs

5:20 94. Suppressing nanoparticle-macrophage system interactions of two-dimensional gold nanorings for improved tumor accumulation and photothermal ablation of tumor. **Y. Liu**, Z. Nie, X. Chen

5:40 Concluding Remarks.

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

Bacteria at Interfaces in Healthcare

A. P. Goodwin, *Organizer*
V. Gordon, *Organizer, Presiding*

2:00 95. Glycan engineering at nanoparticle surfaces to understand and detect infection. B. Martyn, S. Won, S. Richards, **M.I. Gibson**

2:20 96. Bacterial display of peptides for control of bacteria-gold interfaces. **D.A. Sarkes**, J.J. Rice, H. Dong, J. Terrell, J.P. Jahnke, M.C. Small, M. Hurley, D.N. Stratis-Cullum

2:40 97. Biological colloids: Bacterial outer membrane vesicles. E.S. Rasti, J.B. Nice, **A.C. Brown**

3:00 98. Adhesion and viscoelasticity of living tissues: The Live Cell Monolayer Rheometer (LCMR). **G.G. Fuller**, J. Pokki, M. Merola, A. Undieh, E. Hollenbeck, L. Cegelski

3:30 99. Shake it off: Dynamics of bacterial adhesion at interfaces. S. Sharma, Y.A. Jaimes-Lizcano, V. Yadav, R.B. McLay, P. Cirino, M.L. Robertson, **J. Conrad**

4:00 Intermission.

4:20 100. Mechanical and chemical properties of polymer hydrogels influence bacterial adhesion. K.W. Kolewe, **J.D. Schiffman**

4:50 101. How bacteria sense surfaces to begin biofilm development, and how we might thwart surface sensing to prevent biofilm development. **V. Gordon**

5:10 102. Transparent copper-containing coatings for inhibiting bacterial transmission. **K. Neoh**, D. Mitra, E. Kang

5:30 103. Interaction of bacterial cells with model graphene oxide surfaces: Insights from single-cell force spectroscopy. **S. Romero-Vargas Castrillon**

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

2:00 104. Preparation and characterization of nanopore supported phospholipid bilayers for Raman microscopy detection and quantification of membrane-associated signaling peptides. **D. Bryce**, J.P. Kitt, J.M. Harris

2:20 105. Quantifying the electrostatics of polycation–lipid bilayer interactions. **F. Geiger**

2:50 106. Exploring cellular mechanosensitivity using cell surface-mimicking substrates. **C. Naumann**, K. Shilts

3:20 107. Charge switch regulating structures and dynamics of lipid membrane. **M. Choi**

3:50 108. Smart polymersomes as structural analogues of eukaryotic cells: From membrane asymmetry to compartmentalization. A. Peyret, L. Beaute, E. Ibarboure, O. Sandre, J. Le Meins, N.D. McClenaghan, **S. Lecommandoux**

4:20 109. Coupling of lipid membrane elasticity and dynamics. **Y. Chen**

4:50 110. Antioxidant implication of the physical presence of vitamin E in lipid membranes. M. DiPasquale, M. Nguyen, **D. Marquardt**

Section D

Ernest N. Morial Convention Center
R06

Chemistry of Molecular Electronics

Molecular-Scale Electronics

Cosponsored by PHYS

M. S. Inkpen, G. C. Solomon, L. Venkataraman, *Organizers, Presiding*

2:00 111. Enhancing the thermoelectric properties of molecular junctions. **N. Agrait**

2:30 112. Gating of junction conductance by charge transfer complex formation in single molecule devices. A. Vezzoli, K. Wang, I. Grace, R. Nichols, C.J. Lambert, B. Xu, **S.J. Higgins**

2:50 113. Quantum interference effects in the charge transport through single-molecule junctions. **W. Hong**

3:20 Intermission.

3:30 114. Metal complexes for molecular electronics and Moore. **P.J. Low**

4:00 115. Reduced length-dependent conductance decay in polymethine molecular wires. **S. Gunasekaran**, I. Davydenko, D. Hernangomez-Perez, F. Evers, S.R. Marder, L. Venkataraman

4:20 116. Room-temperature current blockade in atomically defined single-cluster junctions. **X. Roy**, L. Venkataraman, B. Choi, G. Lovat

4:50 117. Dual control of chemical equilibria through pH and potential in single-molecule devices. R. Brooke, D. Szumski, A. Vezzoli, S.J. Higgins, R. Nichols, **W. Schwarzacher**

5:10 118. Mechanical stretching-induced electron transfer reactions and conductance switching in single molecules. **N. Tao**, Y. Li, N. Haworth, L. Xiang, S. Ciampi, M. Coote

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

H. Fan, *Presiding*

2:00 119. Design and assembly of coupled multicomponent nanocrystal superlattices and quasicrystalline assemblies and superparticles. **C.B. Murray**, Y. Wu, Z. Li, K. Elbert, D. Jishkariani, M. Zhang, C.R. Kagan, S. Najmr, D. Wang

2:30 120. Large-scale assembly of 2-D honeycomb semiconductor superlattices and their incorporation in opto-electronic devices. **D. Vanmaekelbergh**, J. Peters, S. Buhbut-Sinai, M. Alimoradi Jazi, G. Soligno, J. Geuchies

3:00 121. *In situ* space- and time-resolved small angle x-ray scattering to probe electric field-driven assembly of nanocrystal superlattices. **Y. Yu**, C. Orme

3:20 Intermission.

3:30 122. Nanomanufacturing by self-assembly. **N. Kotov**

4:00 123. *In-situ* scattering techniques to study synthesis and crystallization processes of colloidal nanocrystals. **M. Cargnello**, L. Wu, J. Qin, C. Tassone

4:30 124. Tracking micelle growth during polymerization-induced self-assembly with liquid cell transmission electron microscopy. **M.A. Touve**, C.A. Figg, D. Wright, C. Park, J. Cantlon, B.S. Sumerlin, N.C. Gianneschi

4:50 125. Improved synthetic efficiency and greener preparation of gold nanorods. **J.W. Stone**

5:10 126. Utilization of colloidal plasmonic metal nanoparticles for understanding polymer chemistry. **G. Liu**

Section F

Ernest N. Morial Convention Center
R09

Fundamental Studies of Mechanochemical & Tribochemical Processes at Interfaces

J. D. Batteas, R. M. Espinosa-Marzal, *Organizers*
W. T. Tysoe, *Organizer, Presiding*

2:00 127. Tribochemical nanolithography. **G.J. Leggett**

2:30 128. Interrogating force-induced reaction acceleration on bond-forming surface reactions. **A.B. Braunschweig**

3:00 129. Chemistry of trinuclear molybdenum compounds and impact on friction. A. Jaishankar, A. Konicek, A. Jusufi, **A.M. Schilowitz**

3:20 130. Dynamic motion and energy dissipation in graphene on rough surfaces. **M.B. Elinski**, J. Batteas

3:40 Intermission.

3:55 131. Chemistry of friction, wear, and tribofilm growth on 2D materials. S. Raghuraman, M. Elinski, J. Batteas, **J.R. Felts**

4:25 132. Probing the load/strain dependent reaction of Perfluorophenylazide (PFPA) with graphene. **J.D. Batteas**, M.B. Elinski, M. Negrito

4:45 133. High throughput and multi-scale quantum-mechanics /molecular-mechanics calculations applied to lubricants. **M. Righi**, P. Restuccia, G. Fatti

5:15 134. Thermodynamic basis of friction in MoS₂. **M. Chandross**, A. Hinkle, T. Babuska, J. Curry, B. Krick, M. Dugger, N. Argibay

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Surface Chemistry & Modification

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

2:00 135. Facile surface exchanges in CdSe quantum belts. **W.E. Buhro**, Y. Yao, Y. Zhou

2:30 136. Quantum dot-ligand equilibrium in purified samples. **A.B. Greytak**

3:00 137. Consequences of InP quantum dot modification using fluoride. **E.J. McLaurin**, R. Siramdas, M. Yazdanparast, S. Lee, C. Aparicio, J.M. Rosado

3:30 138. Orthogonal chemical modification of template-synthesized nanostructures with oligonucleotides. **T. Oh**, J. Park, J.C. Ku, T. Ozel, C.A. Mirkin

3:50 139. Modeling nanomaterial properties: Effects of surface chemistry and interfacial couplings. P.A. Brown, E.I. Calixte, O.N. Samoylova, **K.L. Shuford**

4:10 140. Approach to retard oxidation during processing of colloidal Ti₃C₂ MXenes. **T. Habib**, S. Shah, W. Sun, E. Prehn, Z. Tan, M.J. Green, M. Radovic

4:30 141. Investigation of charge-based chromatographic methods for sorting carbon nanotube chiral forms. **P. Rezaei**, D. Frey, L.D. Pfefferle

4:50 142. nano-FTIR: Infrared imaging and spectroscopy with 20nm spatial resolution. **T. Gokus**, P. Schäfer

5:10 143. Binding of hydrogen and phenol at a Pt₅₀ nanoparticle supported on graphene: *Ab initio* molecular dynamics simulations. **M. Nguyen**, D.C. Cantu, V. Glezakou, R. Rousseau

Section H

Ernest N. Morial Convention Center
Room 204

Surface Chemistry

Nanoparticle & Liquid Surfaces

S. L. Tait, *Organizer*

A. L. Mifflin, L. Seballos, *Presiding*

2:00 144. Ligand ordering phase transitions in mixed ligand shells of CdSe/CdS quantum dots. **A. Balan**, J.H. Olshansky, P. Alivisatos

2:20 145. Role of ligand interactions in CdSe quantum dot ligand exchange dynamics. **E. O'Brien**, P. Alivisatos

2:40 146. Investigating molecular interactions on silver nanostructures using density functional theory and surface-enhanced Raman scattering. **L. Seballos**

3:10 147. Absolute, complex spectral measurement: Turning SFG (sum frequency generation) into an analytical technique. **M.J. Shultz**, P.J. Bisson, J.M. Marmolejos, J. Wang

3:40 148. Fabrication of micro- and nano-sized metal structures on silicon and mica substrates: An Atomic Force Microscope (AFM) and Particle Lithography (PL) approach. **S.B. Ulapane**, A.K. Borkowski, M.k. Okeowo, J. Totleben, C.L. Berrie

4:00 149. Direct optical lithography of functional inorganic nanomaterials. **Y. Wang**, I. Fedin, H. Zhang, D. Talapin

4:20 150. Adsorption of water on kaolinite and montmorillonite surfaces, and its effect on CO₂ adsorption: DFT calculations. R.A. Bennick, M.D. Kilmer, **L. Tribe**

4:50 151. Surface interactions of the siderophore desferrioxamine-B with hematite/water interfaces studied using second harmonic and sum frequency generation spectroscopies. **A.L. Mifflin**

5:20 152. Jones-Ray effect reinterpreted: Surface tension minima of low ionic strength electrolyte solutions are caused by electric field induced water-water correlations. H. Okur, Y. Chen, D. Wilkins, **S. Roke**

Section I

Ernest N. Morial Convention Center
Room 205

ACS Award in Surface Chemistry: Symposium in honor of Stacey F. Bent

Nanomaterials & Catalysis on the Nanoscale

Cosponsored by WCC
H. Lee, *Organizer*
A. V. Teplyakov, *Organizer, Presiding*

2:00 153. Relative stabilities of reaction intermediates on group 1B metals: Effects of van der Waals interactions and bonding structure. **R.J. Madix**

2:30 154. Infrared spectroscopy of the water gas shift reaction over the Cu(111) surface under ambient pressure conditions. C. Kruppe, **M. Trenary**

3:00 155. Accelerated discovery of materials for solar thermal water splitting using computational chemistry and machine learning. **C. Musgrave**, S. Millican, R. Trottier, C. Bartel

3:30 156. Photoelectrochemical and electrochemical fuel production using low dimensional catalytic materials. **U. Sim**

4:00 Intermission.

4:15 157. Photocatalysis at diamond surfaces: New approaches to photochemical reduction reactions. **R.J. Hamers**

4:45 158. Translation of fundamental studies of surface chemistry to catalytic function in nanoporous materials. **C.M. Friend**

5:15 159. Nanoparticle catalysis: Understanding the role of the surface and surface-passivation in creating stable, efficient and scalable devices. **S. Geyer**

LGBTQ+ Graduate Student & Postdoctoral Scholar Research Symposium

Experimental & Computational Frontiers in Inorganic & Materials Chemistry

Sponsored by PROF, Cosponsored by ANYL[‡], BIOL[‡], BIOT, CHED, CMA, COLL, COMP[‡], CWD, ENVR, INOR[‡], MEDI[‡], ORGN, PHYS[‡], PMSE[‡], POLY[‡], PRES[‡], WCC and YCC

Fluid-Solid Interfacial Phenomena at the Nexus of Energy & Geochemistry Research: A Symposium in Honor of David J. Wesolowski

Sponsored by GEOC, Cosponsored by COLL, ENFL, ENVR and INOR

Elucidation of Mechanisms & Kinetics on Surfaces

Mechanisms at the Atomic Scale

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Assembly & Colloidal Interactions of Cellulose Nanocrystals

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Functional Ionic Liquids & Applications

Sponsored by PHYS, Cosponsored by COLL[‡]

Magnetically Recoverable Catalysts

Sponsored by CATL, Cosponsored by COLL, ENFL and INOR

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

SUNDAY EVENING

Section A

Ernest N. Morial Convention Center
Halls B2/C

Fundamental Research in Colloids, Surfaces & Nanomaterials

R. Nagarajan, *Organizer*

6:00 - 8:00

160. Interparticle hydrogen bonding influences the shear jamming of dense colloidal suspensions. **N. James**, E. Han, R. Lopez de la Cruz, H. Jaeger

161. Sensor made of graphene oxide and upconversion nanoparticles to sense mRNA biomarkers. D. Giust, M. Lucio-Benito, O. Muskens, **A. Kanaras**

162. Determination of interfacial amorphicity in functional powders. M. Badal Tejedor, **N. Nordgren**, M. Schuleit, S. Pazesh, G. Alderborn, A. Millqvist-Fureby, M.W. Rutland

- 163.** Understanding the galinstan oxide interface through interfacial tension and interfacial rheology for use in stretchable applications. **A. Koh**, R. Mrozek, G. Slipper
- 164.** Quantitative analysis of temperature programmed desorption from complex surfaces: A machine learning approach to surface science. **A.C. Elder**, T.M. Orlando
- 165.** Adsorption of water and gaseous species on calcite surfaces at different relative humidity and temperature. **N.A. Wojas**, A. Swerin, P. Claesson, V. Wallqvist, M. Järn, P. Gane, J. Schoelkopf, M. Adam
- 166.** Morphological transformations from supramolecular nanofibers to nanoribbons in self-assembly of conjugated block copolymers. **M. Wang**, L. Han, F. He
- 167.** Super liquid repellent surfaces – non-wetting forces, cavity growth and coatings on biobased materials. **A. Swerin**
- 168.** Eliminating intracellular *S. aureus* with its nanoparticle mimetic. F. Gao, L. Xu, **L. Yang**
- 169.** High efficacious nanoemulsion (NE) formulation of polyunsaturated fatty acid-taxoid conjugates. **Y. Zhang**, C. Wang, G. Ahmad, M. Amiji, J. Rooney, T. Zimmerman, I. Ojima
- 170.** Single-molecule fluorescence sheds light on coupled dye-nanoparticle systems. **T. Zuo**
- 171.** Electrochemically enhanced dissolution of silica and alumina in alkaline environments. **H.A. Dobbs**, K. Kristiansen, A.M. Schrader, Z. Berkson, G. Degen, B. Chmelka, J.N. Israelachvili
- 172.** Towards Polarization-Switched Solid-State Molecular (POSSM) pumps. **C. Fernandez**, E. Polikarpov, G. Coffey, A.J. Karkamkar, S.K. Nune, P. Koech, W. Xu, P. McGrail
- 173.** Optically transparent ultramicroelectrode for studying local electrochemical events of single Au nanoparticle using combined methods of electrochemistry and dark field scattering microscopy. **Y. Ma**, A. Highsmith, S. Pan
- 174.** Electronic transport in supromolecular peptide nanofibers. **A. Hochbaum**, N. Ing, R.K. Spencer

- 175.** Understanding the anticorrosive protective mechanisms of modified epoxy coatings with combined improved barrier, active feedback, self-healing and antimicrobial functionalities using advanced electrochemical and spectroscopic techniques. **D.I. Njoku**, M.m. Cui, H. Xiao, B. Shang, Y. Li
- 176.** Selective separation and eradication of drug-resistant superbugs by using multifunctional fluorescent magnetic carbon-dots. **A. Pramanik**, S.J. Jones, P.C. Ray
- 177.** 2D materials grafted colloidal microparticles. **A.T. Liu**, P. Liu, M. Strano
- 178.** Controllable hydrophobicity and transition temperatures of gold nanoparticles coated in 18-crown-6-C-SH moieties by taking advantage of the hole-side cation-diameter relationship. **A.P. Hill**
- 179.** Temporally decoupled growth and loading of a protein cargo into polymersomes using cellulose paper. **A. Li**, A.B. Subramaniam
- 180.** *In-situ* spectroscopic ellipsometry as a tool to characterize Cu-ligated mercaptoalkanoic acid multilayers. **A. Patron**, T.J. Mullen, C. Causey
- 181.** Nanoparticle-templated synthesis of porous carbon for the removal of organic pollutants from water. **A.C. Escobosa**, L. Barrera, J. Noveron
- 182.** Comparison of charge storage properties of prussian blue analogues containing copper and cobalt. **A. Rensmo**, J.R. Hampton
- 183.** Synthesis of periodic mesoporous organosilicas and related hollow nanostructures. **A.S. Manchanda**, M. Kruk
- 184.** Chiral recognition of single amino acid surfactants leucine, isoleucine, and norleucine in the presence of diamine counterion with different chain lengths. **A. Benson**, F.H. Billiot, E. Billiot, K.F. Morris
- 185.** Adsorption on rutile TiO₂ surfaces: Orbital, zero-point energy, and finite-size effects in theoretical models. **A.N. Carlson**, E.S. Gawalt, J.D. Evanseck
- 186.** Partitioning of limonene into short-chain lecithin dispersions. **A. Karman**, S.R. Dungan, N. Nitin, S.E. Ebeler
- 187.** Functionalization of CdSe nanoparticles for use in solar nanocomposites. **A. McReynolds**, J.D. Kehlbeck, M.E. Hagerman

- 188.** Synthetic control over structural and optical properties of Cu(Zn)InS₂/ZnS quantum dots studied at the single particle level. **A. Nguyen**, C.D. Heyes
- 189.** Coverage ratio of amyloidogenic peptides over nano-gold colloidal particles. **A. Islam**, M. Pujols, E. Okungbowa, P. Shevlin, K. Brown, K. Yokoyama
- 190.** Brightness optimization of NIR-to-NIR upconversion nanocrystals. **A.M. Chov**, S. May, A. Baride
- 191.** Exploring interaction between thiolated liposomes and gold/gold coated magnetic nanoparticles. **B. Acharya**, V. Chikan
- 192.** Spatial distribution of mixtures of electrolytes at the air-water interface for varying temperatures. **B.L. Eggimann**, J.I. Siepmann
- 193.** Introducing a molecular model system for 5-7 defects in graphene. **B.P. Klein**, N.J. van der Heijden, M. Franke, C.K. Krug, S.R. Kachel, P. Rosenow, F. Posseik, M. Schmid, R. Tonner, I. Swart, C. Kumpf, J. Gottfried
- 194.** Synthesis, aggregation behavior and enhanced oil recovery performance of an oligomeric nonionic surfactant. **B. Qin**
- 195.** Extraction of lemon essential oils from lemon peels with food-grade surfactants and its antibacterial applications. L. Huang, **B. Chen**
- 196.** Density functional theory study of cation adsorption at the capping sites of Keggin-type Al nanoclusters. **B. Hudson**, J.L. Bjorklund, J.W. Bennett, S.E. Mason
- 197.** G-DNA cancer therapy: Intracellular trafficking in HeLa cells. **B.J. Foster**, K. Fichter
- 198.** Plasmonic properties and applications of tunable aluminum nanocrescents. **C. Coplan**, M.M. Swartz, J.S. Shumaker-Parry
- 199.** Systematic study on the gelation properties of simple alkanolic acid metal salts as low molecular mass gelators. **C. Dill**, S. Mathew, A.V. Mallia
- 200.** Bioconjugation of CuInS₂/ZnS quantum dots to FGF and bioimaging their interactions with FGFR. **C. Robinson**, M. Mohale, D. Baucom, A. Nguyen, R.K. Gundampati, M.H. Al-Ameer, S.K. Thallapuram, C.D. Heyes
- 201.** Measuring energy transfer efficiency between Au and CdSe nanoparticles. **D. Lara**

- 202.** Sum frequency generation spectroscopy of partially fluorinated methyl-terminated self-assembled monolayers on gold and UPD-silver surfaces. **D. Rodriguez**, M.D. Marquez, O. Zenasni, S. Baldelli, T. Lee
- 203.** Study of perfluorophosphonic acid surface modifications on zinc oxide nanoparticles. **D.N. Shoup**, R. Quinones
- 204.** Degradable cellulose wet adhesives using reductant-responsive microgels. **D. Yang**, R.H. Pelton
- 205.** Membrane expression of 5-HT_{1B} receptors in N2a cells in response to SSRIs. **E.B. Nowak**, G.K. Illy, K. Fichter
- 206.** Effect of hydroxide ion concentrations on the binding of montmorillonite to RNA surrogates. **E.P. Gordon**, L. Tribe
- 207.** Application of electrochromic thin films for electrophysiology. **F. Alfonso**, A.F. McGuire, T. Li, F. Santoro, B. Cui
- 208.** Single-molecule imaging of serotonin receptor trafficking using quantum dots. **G. Illy**, K. Fichter
- 209.** New class of nanocatalysts created by coupling of carbon nanotubes, functionalized silica and truncated silver nanoparticle. B.P. Chauhan, **G. Longia**, Q. Johnson, N. Eldabagh
- 210.** Mild, reproducible and efficient strategy to halogenated sol-gel materials. **G. Longia**, N. Eldabagh, Q.R. Johnson, J. Domena, Y. Xing, **B.P. Chauhan**
- 211.** Poly(vinyl alcohol) thin film dewetting on polydimethylsiloxane surfaces by directional drying. **H. Nguyen**, Y. Qi, K. Lim, W. Chen
- 212.** Structure and thermodynamics of worm-like micelles with addition of salt and co-solvent. **H. Jiang**, K. Vogtt, G. Beaucage, M.R. Weaver
- 213.** Molecular oligonucleotide brushes via ring-opening metathesis polymerization. **H. Lu**, X. Tan, Y. Sun, X. Chen, D. Wang, K. Zhang
- 214.** Gene expression in a synthetic eukaryotic cell-mimic. **H. Niederholtmeyer**, N.K. Devaraj
- 215.** Superhydrophobic and hygroscopic surface as an effective anti-icing coating. **H. Nakamura**, T. Yamazaki, M. Tenjimbayashi, S. Shiratori

- 216.** Silicon-containing dendritic dyes with aggregation-induced emission as fluorescent probes. **H. Wang**, S. Feng, W. Yu
- 217.** Surface chemistry of carbon nanoparticles functionally select their uptake in various stages of cancer cells. **I. Srivastava**, S.K. Misra, F. Ostadhossein, E. Daza, J. Singh, D. Pan
- 218.** N-methylmorpholine-N-oxide acts as a 'sacrificial catalyst' to permit imaging of carbon nanodots at the single-particle level. **I. Srivastava**, S.K. Misra, J. Khamo, V. Krishnamurthy, D. Sar, A.S. Schwartz-Duval, K. Zhang, D. Pan
- 219.** Increasing Zr(IV) ligand binding sites in hetero-metal substituted Well-Dawson polyoxometalates for CWA simulant decomposition. S.L. Giles, J. Lundin, P. Pehrsson, R. Balow, **J.H. Wynne**
- 220.** Delafossite CuBO₂ nanoparticles as an efficient electrocatalyst for water splitting. **J. Pena**, S. Mohan, Y. Mao
- 221.** Dynamic behavior of thermotropic liquid crystals in coaxial electrospun polyurethane nanofibers. **J. Lundin**, D. Ratchford, Z. Mobley, G.C. Daniels, N. Weise, R. Ananth, R. Casalini, J.H. Wynne
- 222.** Nanoparticle supercluster formation within crosslinked nanoparticle films: The impact of embedded, coordinating functional groups in crosslinking ligands. **J.A. Dahl**, A.J. Dickenson, M.R. Hammick, A.L. Aakhus
- 223.** Interparticle spacing in 2-d arrays of covalently-crosslinked, thiol-capped gold nanoparticle films: A function of native ligand shell rigidity, length of crosslinking ligands, and deposition orientation. **J.A. Dahl**, M.M. Metko, Z.S. Walbrun
- 224.** Characterizing interactions between novel amphiphilic cellulose derivatives and bile salts using quartz crystal microbalance with dissipation monitoring (QCM-D) and surface plasmon resonance (SPR). **J. Zornjak**, D. Novo, K.J. Edgar, C. Fernandez Fraguas
- 225.** Preparation of crystal-phase-heterostructured 4H/fcc Au@Pd core-shell nanorods for electrocatalytic ethanol oxidation. **J. Liu**, H. Zhang
- 226.** Surface functionalization of silicone films using click chemistry: Synthetic strategies for designing mechanically tunable surfaces. **J.M. Bradley**, J.M. Taylor, S.A. Morin

- 227.** Programming the microdynamics of an active particle: From linear to helical trajectories. **J. Lee**, B. Bharti
- 228.** Investigating the effects of controlled lateral confinement width and surface chemistry on surfactant adsorption onto silica using AFM. **J. Hamon**, B.P. Grady, A. Striolo, R. Tabor
- 229.** Transfection of unmodified microRNA via ammonium-terminated gold nanoparticles as a platform. **J. Hoang**, S. Patil, T. Liu, A. Palat, P. Gunaratne, T. Lee
- 230.** Surface plasmons to Zika virus detection: Detection of NS1 protein utilizing localized surface plasmon resonance and surface plasmon resonance spectroscopy. **J.J. Santos**, R.L. Silveira, S.H. Toma, K. Araki, A.G. Brolo, P. Corio
- 231.** Effects of analyte-induced DNA aptamer conformational changes in aptasensors response. **J.L. Chavez**, P.A. Mirau, J.N. Yoho, J.E. Smith, A. Wissel, J.A. Hagen, N. Kelley-Loughnane
- 232.** Indolicidin as a model antimicrobial peptide: Investigating their interactions with lipid vesicles and supported bilayers. **J.E. Nielsen**, V. Bjørnstad, T. Lind, H. Jenssen, M. Cardenas, R. Lund
- 233.** Formation of tethered lipid nanotubes on cellulose paper. **J. Pazzi**, A.B. Subramaniam
- 234.** Facilitating targeted drug screening: A nanosensor quantifies metabolite-enzyme interactions at the single molecule level. **J. Cheung**, R. Frederiksen, D. Heller
- 235.** Design and synthesis of multifunctional tungsten sulfide quantum dots for cellular imaging of targeted triple negative breast cancer cells. **K. Gates**, A. Pramanik, P.C. Ray
- 236.** Hybrid lipid-coated gold nanoparticles for studying axonal transport mechanisms in the retina. **K. Kinnison**, L.J. Wilsey, B.B. Fortune, M.R. Mackiewicz
- 237.** Self-assembly, gelation studies and mechanotropic properties of molecular gels based on N-phenyloctadecanamides as gelators. **K. Galinat**, E. Begovic, A.V. Mallia
- 238.** Machine learning dataset and model applied to calculating the Flory-Huggins χ parameter. **K.R. Hendrickson**, C. Callaway, S. Venkatram, P. Sood, S. Jang
- 239.** STEP: Revolutionizing FRET measurement. **K. Akers**

- 240.** Unidirectional wetting phenomenon on the snake scales. **K. Kawamura**, M. Tenjimbayashi, D. Watanabe, D. Citterio, S. Shiratori
- 241.** Preparation of monodisperse, supported nanoparticles with switchable surfactants. **K. Bryant**
- 242.** Investigating organonitrogen pesticides on mineral surfaces via sum frequency generation vibrational spectroscopy. **L. Bromley III**, J. Cartagena, P. Videla, A. Fernando, V.S. Batista, L.A. Velarde
- 243.** Reliable synthesis of block copolymer templated bimetallic nanoparticles. **L. Knight**
- 244.** Studies of single-site catalysts on powdered oxide support through self-assembly. **L. Chen**, J. McCann, S.L. Tait
- 245.** Synthesis and Surface Activity of Gemini Surfactant N,N'-bis(octadecyl)-1,4-benzene dimethylpropionate acid. **L. Zhao**, H. Gong, J. Wang
- 246.** Fluorescence detection of aggregation of chromonic dyes in the isotropic phase. **L. Zhu**, K.K. Karukstis
- 247.** Anti-biofouling studies of unsymmetrical oligo(ethylene glycol) spiroalkanedithiol self-assembled monolayer surfaces. **L. St**, J. Craft, P. Chinwangso, H. Lee, M.D. Marquez, T. Lee
- 248.** Comparing full-wave optical modeling of plasmonic coupling within Au nanoparticle nanoring arrays to structures fabricated via particle lithography. **M. Negrito**, M. Sheldon, J. Batteas
- 249.** Toward greener synthesis of microcrystalline ZSM-5 Zeolite catalyst and its application in biomass conversion. **M.H. Nada**, S.C. Larsen, E.G. Gillan
- 250.** Salt mediated synthesis and catalytic activity of para-mercaptobenzoic acid capped monolayer protected gold clusters. R.E. Dufour, **M.G. Rodriguez**, C.L. Heinecke
- 251.** Designing immobilized radicals to improve dynamic nuclear polarization-enhanced MRI at 6.5 mT. **M.D. Lingwood**, K.E. Maurey, G.A. Shaw, A.K. Sherman, M.S. Rosen

- 252.** Aggregation of poly-(3-hexylthiophene) at solvent-solvent interfaces. **M. Sapolsky**, D.S. Boucher
- 253.** Temperature-controlled nano-mite growth on fabricated plasmonic nanostructures. **M.A. Ticknor**, C.A. Lancaster, J.S. Shumaker-Parry
- 254.** Loading of functional enzymes into giant liposomes using cellulose paper. A.B. Subramaniam, **M. Xu**
- 255.** Developing the sapphire (0001) surface as a transparent substitute for mica for DNA nanostructure imaging. **M.L. Norton**, M. Rahman, D.P. Neff, Z.T. Boggs
- 256.** Design of new Fmoc and pyrazole-derived nanoparticles for targeting tumorigenic cells. I.A. Banerjee, **M. Hugo**
- 257.** Synthesis and characterization of Gd:InP/ZnS quantum dots for magnetic resonance imaging. **M. Duszynski**, M. Ellis, K. Fichter
- 258.** Synthesis and characterization of poly(methacrylic acid) hydrogel fabricated with Ni nanoparticles and investigation of their adsorption and catalytic properties. **M. Ajmal**
- 259.** Evaluation of spin-casting as a coating method to study dopamine adhesion. **M. Le**, W. Chen
- 260.** Colloid Chemical Approach to Cracking Formation in Fuel Cell Catalyst Layers. **N. Kumano**, K. Kudo, Y. Akimoto, M. Ishii, H. Nakamura
- 261.** Nanocomposites of plastic, Silicon polymer and noble metal nanoparticles. **N. Ampomah**, K. Moran, Q. Johnson, **B.P. Chauhan**
- 262.** Electroless deposition of Nickel on organosilane nanostructures prepared with particle lithography: Characterization with atomic force microscopy combined with magnetic sample modulation. **N. Kuruppu Arachchige**, P.C. Chambers, A.M. Taylor, J.C. Garno
- 263.** Effect of diamine counterion chain length and pH on the physical properties and chiral recognition ability of amino acid based macromolecular assemblies. **N. Nguyen**, F.H. Billiot, E. Billiot, K.F. Morris
- 264.** Titania containing thin films for the detection of TATP and peroxide vapors. **N.F. Materer**, A.W. Apblett

265. P(NiPAM) microgels embedded in p(AAm) hydrogels as sensor. S. Demirci, D. Rees, **N. Sahiner**
266. Surface ion induced water adsorption on Muscovite mica. **N.N. Lata**, J. Zhou, B. Glatz, S. Sarupria, W.H. Cantrell
267. Effect of silica interlayer on the plasmonic enhancement of photocatalytic activity. **P. Srinoi**, T. Lee, T. Lee
268. Synthesis and characterization of gold nanostar particles. **P. Ansari**, T. Lee, R.C. Willson
269. CdS quantum dot growth dependence on oleylamine concentration. **P.L. Garrett**, N. Razgoniaeva, D. Khon, M. Zamkov
270. Colloidal synthesis of Fe, Mn and Fe-Mn alloy nanoparticles by rapid inductive heating technique. **P. Sharma**, N. Holliger, V. Chikan
271. Correlation between hybridization and electrochemical signal in stem-loop E-DNA sensors using single-molecule AFM. **Q. Gu**
272. Exploring the optical properties of gold nanomites on gold nanotriangles. **R.C. Cocke**, W. Scholl, J.S. Shumaker-Parry
273. Titanium dioxide-coated plasmonic gold-silver nanoshells. **R. Medhi**, T. Lee, T. Lee
274. Spectroscopic studies of starvation in *Vibrio cholerae*. **R.D. George**, P. Mosier-Boss, K. Sorensen, A. O'braztsova
275. Molecular interaction between b-PEI-functionalized gold nanoparticles and *Bacillus subtilis* strains varying in wall teichoic acid composition. **R. Tapia Hernandez**, K.P. Johnson, E.R. Caudill, C.L. Haynes, J.A. Pedersen, V. Feng
276. Effect of water adsorption on clay mineral interfaces for enhanced gas recovery and CO₂ sequestration: First principles calculations. **R.A. Bennick**, L. Tribe
277. Design of Development Agent (DA) in latent fingerprint identification. P. Villarreal, I. Villavicencio, **S. Liu**, J. Liu
278. Selective detection of Pb(II) ion by using a nano material attached aryl-azohistadine dye. **S. Alamgir**, A. Pramanik, P.C. Ray

- 279.** Self-assembly of microscale objects using large, double-stranded DNA molecules. **S. Krerowicz**, D.C. Schwartz
- 280.** Surface adsorption of Nordic aquatic fulvic acid on amine functionalized and non-functionalized mesoporous silica nanoparticles. **S. Jayalath**, V.H. Grassian, S.C. Larsen
- 281.** Interfacial water structure next to zwitterionic lipids: A vibrational sum frequency spectroscopic study. **S. Pullanchery**, T. Yang, P.S. Cremer
- 282.** Titania stabilized cuprous oxide photocatalyst for the reduction of carbon dioxide. **S. Alden**, D.A. Rider
- 283.** Investigation of chiral recognition of dipeptide based micellar systems. **S. Tubbs**, E. Billiot, K.F. Morris, F.H. Billiot
- 284.** Comparing electrochemical calculations and particle induced x-ray emission measurements of Prussian blue analogue deposits. **S.D. Joffre**, J.R. Hampton
- 285.** Synthesis and physicochemical properties of a novel carboxylbetaine-type surfactants containing benzene ring. **S. Gao**, Q. Jiang, Z. Song, F. Lan
- 286.** Structural investigation on the mechanism of the endosomal escape by pH-sensitive Gemini surfactants. **S. Chang**, Y. Chen
- 287.** Probing the interactions between small molecules and phospholipids at the biointerface. **S. Sun**, A. Sendeki, S. Pullanchery, d. huang, T. Yang, P.S. Cremer
- 288.** Self-assembled monolayers derived from symmetric olefin-bridged bidentate adsorbates on gold. **S. Sakunkaewkasem**, T. Lee, M.D. Marquez, O. Zenasni
- 289.** Study of the excited state processes of 1,3,6,8-Tetrakis(trimethylsilylethynyl)pyrene in monomer and aggregated state. **S. S, S. Sankararaman**, P. Edamana
- 290.** Probing the interaction of enzyme and gold nanoparticles with various coatings. **S. Neupane**, Y. Pan, Z. Yang
- 291.** Programmable preparation of three-dimensional assembly of gold triangular nanoprisms for biosensing applications. **T. Habarakada Liyanage**, S. Shaffer, H. Nguyen, R. Sardar

- 292.** Elucidating the time-dependent photoluminescence properties of colloidal carbon dots. **T. Chu**, D. Gerrity, S. Chatterjee
- 293.** Surface functionalization with glycopolymers for selective adherence of the bacteria *Shewanella oneidensis*. **T.D. Young**, W. Liao, C. Lee, G. Wong, A. Kasko, P.S. Weiss
- 294.** Liquid-phase epitaxial growth of triangular Au nanoplates on MoS₂ nanosheet for electrocatalytic hydrogen evolution. **T. Tran, H. Zhang**
- 295.** Self-assembled monolayers derived from the adsorption of phenyl- and perfluorophenyl-terminated alkanethiols on gold. **T. Yu**, T. Lee, M.D. Marquez, O. Zenasni
- 296.** Towards continuous *in situ* sensing of marine pollutants using surface enhanced Raman spectroscopy (SERS). **T. Küster**, G.D. Bothun
- 297.** Sulfur@Gold@Titanium dioxide yolk-shell nanoparticles for lithium-sulfur battery applications. **T. Liu**, T. Lee
- 298.** Promotion effect of alkylamine functionalized silica on embedded gold nanoparticle hydroaminations. **T. Graham**, A. Rosul, D. Wu, S.R. Saunders
- 299.** Single particle fluorescence studies of semiconductor nanoparticles alloyed by kinetic control. **T. Hull**, J.S. Owen
- 300.** Magnetron sputtering of gold thin films under ambient conditions and manipulation of deposition. **T.J. Adams**, B. Evans, C. Miller, I. Senevirathne
- 301.** Synthesis and characterization of organosoluble Au₃₆(SPhCH₃)₂₄ nanomolecules. **V. Ganeshraj**
- 302.** Nanomite-decorated nanoparticles as surface-enhanced spectroscopy substrates. **W.E. Scholl**, C.A. Lancaster, M.A. Ticknor, J.S. Shumaker-Parry
- 303.** Multicolor carbon dots based on solvatochromism. H. Wang, P. Haydel, L. Earb, S. Wang, **W. Yu**
- 304.** Construction of hybrid alginate nanogels loaded with manganese oxide nanoparticles for enhanced tumor MR imaging. W. Sun, J. Zhang, C. Zhang, P. Wang, C. Peng, M. Shen, **X. Shi**

- 305.** Multifunctional biochar for highly efficient capture, identification and removal of toxic metal ion and superbugs from water sample. **Y. Gao**, A. Pramanik, P.C. Ray
- 306.** Organize gold nanoparticles by DNA origami cage. **Y. Zhang**
- 307.** Charge-reversal amphiphiles induced by pH: Distinctive interaction with normal and cancer cells. **Y. Chang**, Z. Huang, J. Xu, X. Zhang
- 308.** Effect of oil droplet size on stability of concentrated oil-in-water emulsion with unsaturated fat. M. Shinada, **Y. Watanabe**
- 309.** Preparation of angle-independent color materials by applying Mie resonances. **Y. Naoi**, Y. Takeoka, T. Seki
- 310.** Self-assembled polydopamine coatings via drop casting. **Y. Zhou**, W. Chen
- 311.** Novel synthesis of bispectral obscurant smoke. **Z. Zander**, D. Kuhn, A. Polk
- 312.** Pentamer substrate for reproducible surface enhanced raman spectroscopy. **Z. Petrek**, U. Paez, T. Ye
- 313.** Reinforcing the anticorrosion property of epoxy coating by modified graphene oxide with urea–formaldehyde resin. **Z. Hongpeng**, Y. Shao
- 314.** Developing a technique to determine the packing density of a lipid bilayer and exploring the effect of packing density on membrane fusion. **Z. Liu**, Y. Chen
- 315.** Influences of surface chemistry and nanoscopic roughness on the frictional properties of MoS₂ nanosheets. **Z. Liu**, J. Batteas
- 316.** Applications of nanotechnology in bone tissue regeneration. **J. Santillan**

MONDAY MORNING

Section A

Ernest N. Morial Convention Center
Room 242

ACS Award in Colloid Chemistry: Symposium in honor of Håkan Wennerström

U. Olsson, N. J. Wagner, *Organizers, Presiding*

8:30 317. Controlling water evaporation through self-assembly. **E. Sparr**, K. Roger, D. Topgaard, H. Wennerström, D. Pham, S. Björklund

9:00 318. Self-assembly of block copolymers in ionic liquids: Mixed pluronics-structure, rheology and use as wearable electronics. **N.J. Wagner**, R. Chen, C. Lopez-Barron

9:30 319. Lowering of surface tension of water by surfactants: principles of molecular design. **A. Kabalnov**

10:00 Intermission.

10:10 320. Kinetic stability of non-ionic surfactant vesicles. A.P. Schroder, J. Crassous, C.M. Marques, **U. Olsson**

10:40 321. Lipid materials processing: The emergence of super-swelled membrane single-crystals. **C. Leal**

11:10 322. Physicochemical code for protein interactions in live cells. **M. Oliveberg**

11:40 323. Protein aggregation and gelation – insight from combining scattering, rheology and computer simulations. **A. Stradner**

Section B

Ernest N. Morial Convention Center
Room 245

2018 Priestley Medalist: Symposium in honor of Geraldine Richmond

R. A. Walker, *Organizer*
S. Wren, *Presiding*

8:30 Introductory Remarks.

8:35 324. Flipping out (or in) over lipids. **J.C. Conboy**

9:05 325. In your face: Adventures in computational vibrational sum-frequency spectroscopy. **N.A. Valley**

9:35 Intermission.

9:55 326. Oh, the places you'll go: Chemical structure, organizations and reactivity in asymmetric environments. **R.A. Walker**

10:25 327. Science, serendipity and sustainability. **B. Chase**, I. Noda, J.F. Rabolt

10:55 328. Making the rounds: Molecular characterization of surfactant stabilized nanoemulsion surfaces. **G.L. Richmond**

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*
D. L. Daleke, D. Y. Sasaki, *Presiding*

8:30 329. Photo-induced pinocytosis for artificial cell feeding. **D. Konetski**, D. Zhang, C. Bowman

8:50 330. *In situ* determination of membrane protein orientation. **Z. Chen**

9:20 331. Cellulose paper assembles vesicles from fatty acids and amphiphilic block copolymers. **A.B. Subramaniam**, A. Li, J. Pazzi, M. Xu

9:50 332. Bacteriorhodopsin membrane entrapped within photocatalytic amorphous titania. K.E. Johnson, S. Gakhar, S.H. Risbud, **M.L. Longo**

10:20 333. Designing size-controllable bicelles. C. Mandelkern, Y. Liu, I. Alahmadi, K. Chih, J. Fang, **M. Nieh**

10:50 334. Assessing the structure and stability of transmembrane oligomeric intermediates of an alpha-helical toxin. R. Desikan, P.K. Maiti, **G.K. Ayappa**

11:20 335. *Bacillus subtilis* lipid extract, a branched-chain fatty acid model membrane. **J. Nickels**, S. Chatterjee, B. Mostofian, C.B. Stanley, M. Ohl, P. Zolnierczuk, R. Schulz, D.A. Myles, R.F. Standaert, X. Cheng, J. Katsaras

11:50 336. Monitoring and modulating ion traffic in hybrid lipid/polymer vesicles. **W. Paxton**, P. McAninch, K. Achyuthan, S. Shin, H. Monteith

Section D

Ernest N. Morial Convention Center
R06

Chemistry of Molecular Electronics

Molecular-Scale Electronics

Cosponsored by PHYS

M. S. Inkpen, G. C. Solomon, L. Venkataraman, *Organizers, Presiding*

8:30 337. New molecules for single-molecule electronics in break junction devices. **M.R. Bryce**

9:00 338. Photovoltaic response observed in thin molecular bilayer rectifiers with symmetric carbon contacts. **S.R. Smith**, R.L. McCreery

9:20 339. Molecular silicon electronics. **R.S. Klausen**

9:50 340. Insulated molecular wires: Inhibiting orthogonal contacts in metal complex. **D. Costa Milan**, O.A. Al-Owaedi, S. Bock, M.C. Oerthel, M.S. Inkpen, D.S. Yufit, A.N. Sobolev, N.J. Long, T. Albrecht, S.J. Higgins, M.R. Bryce, R. Nichols, C.J. Lambert, P.J. Low

10:10 341. Quantum interference based single-molecule insulators. **L. Venkataraman**

10:30 Intermission.

10:40 342. Single-molecule electronic components based on molecular design. **H. van der Zant**

11:10 343. Resonant tunneling transport in single-molecule junctions. **Y. Zang**, S. Ray, A. Borges, E. Fung, G.C. Solomon, S.A. Patil, L. Venkataraman

11:30 344. Solution processable nanocarbon hybrids for single-molecule investigations. **M. Palma**

11:50 345. Two-terminal single-molecule functional devices. **E. Scheer**, S.G. Bahoosh, J.C. Cuevas, A. Erbe, S. Hamsch, R. Hayakawa, C. Herrmann, T. Huhn, M.A. Karimi, Y. Kim, M. Matt, P. Nielaba, F. Pauly, C. Schirm, T. Sandler, D. Sysoiev, D. Weber, J. Wolf, M.S. Zöllner

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

H. Fan, *Presiding*

8:30 346. Colloidal synthesis of nanomaterials: challenges and opportunities. A. Hazarika, V. Srivastava, H. Zhang, **D. Talapin**

9:00 347. Programmable nanoparticle systems: designed architectures, controlled processes and regulated functions. **O. Gang**

9:30 348. Self-assemblies of graphene quantum dots: From hollow nanoshells to the origin of life. **Z. Qu**, N. Kotov

9:50 349. Perspectives in nanoscale chemistry. **A. Vartanian**

10:10 Intermission.

10:30 350. Synthesis and assembly of plasmonic metal oxide nanocrystals. **D.J. Milliron**

11:00 351. Synthesis and optical interaction in janus au-silica-quantum dot hybrid nanostructures. Y. Luo, **J. Zhao**

11:30 352. Geometric influence on photoelectrocatalytic properties of assembled ZnO nanonetwork. **Y. Mao**

11:50 353. Computational survey of counterions and capping groups in Al nanoclusters. **S.E. Mason**, B. Hudson, J.L. Bjorklund, J.W. Bennett

12:10 354. Adsorption of small cationic nanoparticles onto large anionic particles from aqueous solution: A model system for understanding pigment dispersion and the problem of effective particle density. **S. North**, E. Jones, G. Smith, O. Mykhaylyk, T. Annable, S.P. Armes

Section F

Ernest N. Morial Convention Center
R09

Fundamental Studies of Mechanochemical & Tribochemical Processes at Interfaces

J. D. Batteas, W. T. Tysoe, *Organizers*
R. M. Espinosa-Marzal, *Organizer, Presiding*

8:30 355. Force transduction at cell-to-cell adhesive contacts. **D.E. Leckband**, S. Barrick, X. Kong, E. Tajkhorshid

9:00 356. Tribology of biomimetic patterned polymer textures as skin coating models. R. Jin, X. Xu, C. Cazeneuve, J.C. Chang, **M. Ruths**, G.S. Luengo

9:20 357. Anomalous potential dependent friction on Au (111) measured by AFM. **L. Pashazanusi**, N. Pesika

9:40 358. Nanofriction and surface nanomechanical properties of cotton (*Gossypium hirsutum* L.) fibers as studied with contact mode and force-distance curve-based AFM. **F. Hosseinali**, J.A. Thomasson, J.D. Batteas

10:00 359. What does mucin do for the cornea? *In vitro* measurements of mucin structure on an epithelial monolayer. **T. Angelini**

10:30 Intermission.

10:45 360. Promise of stable nanocrystalline metals: Ultra-low wear and diamond-like carbon from thin air. **N. Argibay**, M. Chandross, P. Lu, D. Adams, M. Dugger, T. Babuska, J. Curry, A. Kustas, T. Furnish, B. Boyce, B. Clark

11:15 361. Structural superlubricity of platinum and gold under ambient conditions: The effects of chemistry and geometry. A. Özoğul, E. Cihan, S. Ipek, E. Durgun, **M.Z. Baykara**

11:35 362. Size-dependent pseudo-elasticity in gold nanocrystals. **L. Hanson**, X. Gu, C. Eisler, M. Koc, P. Alivisatos

11:55 363. Wear-induced chemical nanolayering and its beneficial impact on wear resistance. **P. Bellon**

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Novel Synthesis & Nanostructures

J. A. Hollingsworth, R. Nagarajan, *Organizers*
J. Macdonald, *Presiding*

8:30 364. Indium phosphide quantum shells tunable through visible and near infrared. **A.M. Dennis**

9:00 365. Indium phosphide clusters as precursors to novel nanoscale phases. **B.M. Cossairt**, M. Friedfeld, J. Stein, A. Ritchhart

9:30 366. Nanosheets and emulsion systems. **H.V. Kumar**, C.D. Liyanage, T. Francis, D.H. Adamson

9:50 367. Purification and *in situ* ligand exchange of metal-carboxylate-treated fluorescent InP quantum dots via gel permeation chromatography. **A. Roberge**, J. Stein, Y. Shen, B.M. Cossairt, A.B. Greytak

10:10 368. Development of sequence-dependent structure/function relationships for peptide-enabled nanomaterials. **N. Bedford**

10:30 369. Nanoparticle chemistry in solution observed by time-resolved 3D TEM. B. Kim, J. Heo, J. Kim, **J. Park**

10:50 370. Crystal structure of Faradaurate-279: Au₂₇₉(SPh-*t*Bu)₈₄ nanomolecules. **N. Sakthivel**, S. Theivendran, V. Ganeshraj, A.G. Oliver, A. Antonysamy

11:10 371. Core size interconversions of gold nanomolecules: Au₃₀(S-*t*Bu)₁₈ and Au₃₆(SPhX)₂₄. **T.C. Jones**, A. Antonysamy, S. Theivendran, L. Sementa, A. Fortunelli

11:30 372. Imidazolium ionic liquids as multifunctional solvents, ligands, and reducing agents for noble metal deposition onto well-defined heterostructures, and the effect of synthetic history on catalytic performance. **M.D. Ballentine**, M. Garcia, L.J. Hill

Section H

Ernest N. Morial Convention Center
Room 204

Surface Chemistry

Molecules on Surfaces

S. L. Tait, *Organizer*
J. R. Hampton, B. Schuler, *Presiding*

8:30 373. Molecular coupling between organic molecules and metal. **H. Pengcheng**, X. Lu, Z. Chen

8:50 374. Ullmann coupling of helical polycyclic aromatic hydrocarbons on metal surfaces. **A. Mairena**, M. Parschau, J. Seibel, M. Wienke, L. Zoppi, C. Wäckerlin, J. Li, K. Martin, N. Avarvari, A. Terfort, K. Ernst

9:10 375. Redox-active ligand controlled selectivity of vanadium oxidation on Au(100). **S.L. Tait**, C. Tempas, T.W. Morris, D. Wisman, N. Din, D. Le, C.G. Williams, M. Wang, A.V. Polezhaev, T.S. Rahman, K.G. Caulton

9:40 376. Electrical and optical studies of porphyrin-based two-dimensional metal-organic frameworks. **K. Ishihara**, F. Tian

10:00 377. Molecular topology and surface chemical bond: Alternant vs. non-alternant aromatic molecules. **B.P. Klein**, N.J. van der Heijden, M. Franke, C.K. Krug, S.R. Kachel, P. Rosenow, F. Posseik, M. Schmid, R. Tonner, I. Swart, C. Kumpf, J. Gottfried

10:20 Intermission.

10:40 378. Characterization of electrogenerated hexacyanoferrate thin films for battery applications. S.D. Joffre, A. Rensmo, **J.R. Hampton**

11:10 379. Measuring individual point defects in monolayer WS₂ using scanning probe microscopy. **B. Schuler**, C. Kastl, C. Chen, S. Refaely-Abramson, S. Yuan, R. Roldan, N.J. Borys, T. Kuykendall, F. Ogletree, J. Neaton, S. Aloni, A. Schwartzberg, A. Weber-Bargioni

11:30 380. Structure and defects in the TiN-TiO₂ rutile interface. J. Gutierrez, **M. Nolan**

12:00 381. Fundamental surface modification and synchrotron-based spectroscopy of nanoscale diamond with amines, boranes and silica. G. Jean-Pierre, P. Tran, P.J. Sandoval, J. Hnatek, A. Arreola, A. Len, C. Melendrez, D. Barrera, R. Robinson, P. Yamaguchi, K. Lopez, A. Hernandez, E. Favre, D. Nordlund, V. Altoe, **A. Wolcott**

Section I

Ernest N. Morial Convention Center
Room 205

ACS Award in Surface Chemistry: Symposium in honor of Stacey F. Bent

Surface Modification & Function

Cosponsored by WCC
A. V. Teplyakov, *Organizer*
H. Lee, *Organizer, Presiding*

8:30 382. Electrochemical sensor of CO₂ based on surface modified halloysite nanotubes. **C. Prasittichai**

9:00 383. Functionalizing silicon surfaces: mechanistic connections between molecules and interfaces. **J.M. Buriak**, M. Hu, T. Hauger

9:30 384. Probing organic reactions at surfaces using DART-MS. **H. Zuilhof**

10:00 Intermission.

10:15 385. Fe-based modification of graphite felt surfaces for electrochemical treatment of aqueous contaminants. **M. Kong**

10:45 386. Metal contacts in silicon solar cells: Role of surface science. **K. Roelofs**

11:15 387. Nanoparticles via vapor phase condensation for energy applications. **B.M. Clemens**, B. Gibbons, M. Wette, D. Higgins, T.F. Jaramillo, J. Baker, S.F. Bent, A. Mehta, R. Davis

Elucidation of Mechanisms & Kinetics on Surfaces

Theory

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Fluid-Solid Interfacial Phenomena at the Nexus of Energy & Geochemistry Research: A Symposium in Honor of David J. Wesolowski

Sponsored by GEOC, Cosponsored by COLL, ENFL, ENVR and INOR

Assembly & Colloidal Interactions of Cellulose Nanocrystals

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Electrochemistry and Electrochemical Interfaces

Sponsored by PHYS, Cosponsored by COLL[‡]

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

MONDAY AFTERNOON

Section A

Ernest N. Morial Convention Center
Room 242

ACS Award in Colloid Chemistry: Symposium in honor of Håkan Wennerström

U. Olsson, N. J. Wagner, *Organizers*
C. Leal, A. Stradner, *Presiding*

2:00 388. Thermosponsive colloidal molecules with tunable directional interactions.
P. Schurtenberger

2:30 389. Colloidal and macromolecular complexes at fluid-fluid interfaces and impact on mechanical properties. M.L. Davidson, S.M. Kirby, **L. Walker**

3:00 390. Stratification in colloidal films: Experimental evidence from atomic force microscopy and small-angle x-ray scattering. A. Carr, W. Liu, X. Liu, K. Yager, A.F. Routh, **S. Bhatia**

3:30 Intermission.

4:00 391. Structure and dynamics of nanoparticles in polymeric fluids. R. Poling-Skutvik, R. Krishnamoorti, **J. Conrad**

4:30 392. Cascade processes in “artificial cells” triggered by light, chemicals, or enzymes. **S.R. Raghavan**, K.C. DeMella

5:00 393. Herpesvirus infectivity facilitated by internal DNA pressure and capsid stability. **A. Evilevitch**

Section B

Ernest N. Morial Convention Center
Room 245

2018 Priestley Medalist: Symposium in honor of Geraldine Richmond

R. A. Walker, *Organizer*
N. A. Valley, *Presiding*

2:00 394. Impact of atmospheric aerosols and clouds on hydrocarbon chemistry. **J.S. Francisco**

2:30 395. From the field to the lab: Atmospheric organics in urban air and at the air-water interface. **S. Wren**, G.L. Richmond, J. Brook, B. Gordon, K. Hayden, J. Liggio, G. Lu, C. Mihele, R. Mittermeir, N.A. Valley, J. Wentzell

3:00 396. Towards predictive separations using 4D super-resolution microscopy. **C.F. Landes**

3:30 Intermission.

3:50 397. Solvent isotope effect on biomolecular adsorption at hydrophobic surfaces. T. Jarisz, K. Jena, M. Dixon, **D.K. Hore**

4:20 398. Maximizing efficiency – practical approaches to linking titration (and other methods) with NIR spectroscopy. **A. Hopkins**

4:50 399. Unraveling chemical processes from a metrology perspective. **P. Chu**

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

2:00 400. Interactions between charged nanoparticles and giant vesicles fabricated from inverted-headgroup lipids. **L. Wang**, N. Malmstadt

2:20 401. Adenosine receptor 2A phase segregation behavior depends on its ligand binding state. **N. Malmstadt**

2:50 402. Measurement of flippase activity in individual red blood cells. M. Hosek, **D.L. Daleke**

3:20 403. Interaction of G protein transducin with GPCR rhodopsin studied by SANS. O. Soubias, J. Nickels, A. Yeliseev, K.G. Hines, W.E. Teague, J.K. Northup, J. Katsaras, **K. Gawrisch**

3:50 404. Imaging membrane-interacting peptides via a fluorescent amino acid. **F. Gai**

4:20 405. Time-resolved imaging of molecular transport through living cell membrane. **H. Dai**

4:50 406. Ytterbium ions strongly inhibit lipid flip-flop. V. Cheng, D. Wang, **J.C. Conboy**

Section D

Ernest N. Morial Convention Center
R06

Chemistry of Molecular Electronics

Molecular-Scale Electronics

Cosponsored by PHYS

M. S. Inkpen, G. C. Solomon, L. Venkataraman, *Organizers, Presiding*

2:00 407. Towards self-assembled single-molecule electronic devices. **K. Moth-Poulsen**

2:30 408. Tuning the polarity of charge carriers using electron deficient thiophenes. **J. Low**, B. Capozzi, J. Cui, S. Wei, L. Venkataraman, L.M. Campos

2:50 409. All-carbon molecular electronics for the real world. **R.L. McCreery**, A. Bergren, A.M. Najarian, M. Supur, S.R. Smith, U. Tefashe

3:20 410. Organometallic self-assembled monolayer films of linear azulenic and biazulenic p-linkers featuring asymmetric anchoring. **M.k. Okeowo**, C.L. Berrie, M.V. Barybin

3:40 411. Large-area molecular electronic devices employing graphene materials as soft top-contacts. **K. Nørgaard**

4:10 Intermission.

4:20 412. Carbon electrode-molecule junctions: A reliable platform for molecular electronics. **X. Guo**

4:50 413. Structural design of single-molecule junctions with electromechanical switching properties. **A. Vezzoli**, K. Wang, A. Ismael, I. Grace, C.J. Lambert, B. Xu, S.J. Higgins, R. Nichols

5:10 414. Toward nanoscale rotoelectronics: A trigonal array of dipolar molecular rotors. T.F. Magnera, J. Kaleta, P.I. Dron, J. Wen, C. Zhu, C.T. Rogers, **J. Michl**

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

H. Fan, *Presiding*

2:00 415. Bismuth oxide thin films. **S.E. Rodil**, C.L. Gomez, O. Depablos-Rivera, J.C. Medina

2:30 416. Self-assembly of quantum dot gold hetero-structural nanocrystals and their transformations under high pressure. **O. Chen, H. Zhu, Y. Nagaoka, Z. Wang**

3:00 417. Role of planar defects during the synthesis of stellated plasmonic nanocrystals. **J.D. Smith, K.M. Koczkur, J.A. Burkhart, S.E. Skrabalak**

3:20 Intermission.

3:30 418. Reconfigurable plasmonic nanoparticle assemblies. **D.S. Ginger**

4:00 419. *In situ* observation of nucleation and growth of nanocrystals. **H. Weller**

4:30 420. Postsynthetic surface treatments for essentially trap-free CsPbBr₃ colloidal nanocrystals. **B.A. Koscher, J.K. Swabeck, N. Bronstein, P. Alivisatos**

4:50 421. Modeling of nanoparticle superlattices self-assembly at liquid-air interfaces. **L. Vukovic**

5:10 422. Facile fabrication of spiky gold-carbon black nanoshells for efficient surface-enhanced Raman scattering. **A. Abbasi, T. Küster, A. Bose, G.D. Bothun**

Section F

Ernest N. Morial Convention Center
R09

Fundamental Studies of Mechanochemical & Tribochemical Processes at Interfaces

J. D. Batteas, R. M. Espinosa-Marzal, W. T. Tysoe, *Organizers*
J. R. Felts, *Presiding*

2:00 423. Friction regimes of water-lubricated diamond (111): Role of interfacial ether groups and tribo-induced aromatic surface reconstructions. **M. Moseler**

2:30 424. Examination of bonding using molecular dynamics and *in-situ* nanoindentation. **J.A. Harrison**

3:00 425. Titania lubrication using oil-ionic liquid mixtures. H. Li, P. Cooper, A. Somers, M.W. Rutland, P. Howlett, **R. Atkin**

3:20 426. Boundary lubrication studied by resonance shear measurement. **K. Kurihara**, M. Mizukami, M. Kasuya

3:40 427. Mechanochemistry enables a rational, targeted synthesis of mixed-metal microporous metal-organic frameworks. **G. Ayoub**, K. Uzarevic, A. Howarth, L.S. Germann, R.E. Dinnebier, O. Farha, T. Friscic

4:00 Intermission.

4:15 428. Atomic-scale insights into contacts between nanoscale bodies: *In situ* experiments and matched atomistic simulations. **T.D. Jacobs**, S. Vishnubhotla, S.R. Khanal, R. Chen, X. Hu, A. Martini

4:45 429. Tribochemical reactions in nanoscale lubrication and wear. **R. Carpick**

5:15 430. Mechanochemistry in high shear stress elastohydrodynamic contacts. j. zhang, **H.a. Spikes**

5:45 Concluding Remarks.

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Nanocrystal Assembly

J. A. Hollingsworth, R. Nagarajan, *Organizers*
J. Vela, *Presiding*

2:00 431. New chalcogenide aerogel compositions from covalent crosslinking + ion-exchange. I. Hewavitharana, **S. Brock**

2:30 432. Cascade synthesis of binary nanoparticles polymer composites. K.W. Kwock, H.D. Magurudeniya, A.J. Singh, J.A. Hollingsworth, **M.A. Firestone**

3:00 433. Pressure-induced nanoparticle assemblies. **H. Fan**

3:30 434. Emulsification of two-dimensional nanosheets: from exfoliation to functional liquids and composites. **S. Ogilvie**, M. Large, A. King, A. Dalton

3:50 435. Silver nanowire networks for transparent film heaters: Synthesis, nanoscale characterization and integration in functional devices. **J. Simonato**

4:10 436. Hydrogel with embedded chemical gradient for analyte collection on surface enhanced infrared absorption spectroscopy. **S. Zhang**, H. Chen, P.V. Braun

4:30 437. Construction of responsive metal/polymer nanocomposites for smart chemical self-regulation. **L. Zhang**

4:50 438. Comparing the rheo-optics of aqueous sulfonated cellulose nanocrystal and model cholesteric dispersions. **M.M. Noor**, P. Saha, M. Pospisil, M.J. Green, V.A. Davis

5:10 439. Surface templating and entropy-driven effect to the self-assembly of protein 2D crystal at solid-liquid interface. **S. Zhang**, R. Alberstein, F.A. Tezcan, J.J. DeYoreo

Section H

Ernest N. Morial Convention Center
Room 204

Surface Chemistry

Reactions at Surfaces

S. L. Tait, *Organizer*
R. Barbosa, J. De Roo, *Presiding*

2:00 440. Preparing and modifying Fischer-Tropsch catalysts through metal oxalate route. **R. Barbosa**, Y. Xiang, N. Kruse

2:50 441. Surface Chemistry on Single Hot Carbon Nanoparticles. B.A. Long, D.J. Rodriguez, **S.L. Anderson**

3:20 442. Metal vapor adsorption calorimetry on calcium niobate nanosheets: Energetics and adsorbate structure. **W. Zhang**, J.E. Eichler, R. Uppuluri, T.E. Mallouk, C.T. Campbell

3:40 Intermission.

4:00 443. Kinetics and modeling study of the catalytic disproportionation of hydrogen peroxide using nanostructured ceria. **C.L. Cheung**, T.J. Fisher, T. Wu, A. Bhalkikar, N. Shao, N. Al-Aqtash, K. Tarawneh, Y. Gao, Y. Soo, R. Sabirianov, W. Mei

4:30 444. *Ab initio* molecular dynamic study about effect of acid-base molecule adsorption on acidity on ZrO₂ surface. **R. Sato**, Y. Shibuta, F. Shimojo, S. Yamaguchi

4:50 445. Surface chemistry of group 4 metal oxide nanocrystals. **J. De Roo**, K. De Keukeleere, F. Delpéch, Y. Coppel, I. Van Driessche, J.C. Martins, J.S. Owen, Z. Hens

Section I

Ernest N. Morial Convention Center
Room 205

ACS Award in Surface Chemistry: Symposium in honor of Stacey F. Bent

Interfaces & Assembly: From Molecular Understanding to 3D Materials

Cosponsored by WCC
H. Lee, A. V. Teplyakov, *Organizers*
A. L. Harris, *Presiding*

2:00 446. Hybrid interfaces via organic chemistry on semiconductors. L. Pecher, **R. Tonner**

2:30 447. Lateral interactions between organic molecules on solids: Recent examples from functionalization of the Ge(100)-2×1 surface. **B. Shong**

3:00 448. Surface chemical choreography of vapor-liquid-solid semiconductor nanowire synthesis. **M. Filler**

3:30 449. III-Nitride nanostructures for photonics and beyond. **G.T. Wang**

4:00 Intermission.

4:15 450. Molecular design and chemical modification of semiconductor surfaces. **A.V. Teplyakov**

4:45 451. Tailoring aerogels for energy storage and sensing applications. **M.A. Worsley**

5:15 452. In honor of Prof. Stacey Bent: Self-assembly across substrates. **P.S. Weiss**

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Science

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

LGBTQ+ Graduate Student & Postdoctoral Scholar Research Symposium

Sponsored by PROF, Cosponsored by ANYL, BIOL, BIOT, CHED, CMA, COLL, COMP, CWD, ENVR, INOR, MEDI, ORGN, PHYS, PMSE, POLY, WCC and YCC

Assembly & Colloidal Interactions of Cellulose Nanocrystals

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Electrochemistry and Electrochemical Interfaces

Sponsored by PHYS, Cosponsored by COLL[‡]

Magnetically Recoverable Catalysts

Sponsored by CATL, Cosponsored by COLL, ENFL and INOR

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

MONDAY EVENING

Section A

Ernest N. Morial Convention Center
Halls D/E

Sci-Mix

R. Nagarajan, *Organizer*

8:00 - 10:00

47, 133, 160, 177, 182-185, 191-192, 197, 200, 202, 204, 207-208, 212-214, 217, 222, 224, 227-232, 235, 242, 244-245, 247-249, 251, 255-258, 260, 262-263, 265-266, 270-271, 273-274, 276, 278-280, 283-284, 287, 289-291-293, 296, 298, 305-306, 309, 312-313, 315-316, 357-358, 362, 423, 427-428. See previous listings.

566. See subsequent listings.

TUESDAY MORNING

Section A

Ernest N. Morial Convention Center
Room 242

ACS Award in Colloid Chemistry: Symposium in honor of Håkan Wennerström

U. Olsson, N. J. Wagner, *Organizers*

S. Bhatia, E. Sparr, *Presiding*

8:30 453. Hydration repulsion between polar surfaces and lipid membranes: Insights from solvent-explicit molecular dynamics simulations. **E. Schneck**, M. Kanduc, B. Kowalik, A. Schlaich, R. Netz

9:00 454. Molecular thermodynamic modeling of interactions between alpha-helical peptides and lipid bilayer membranes. **R. Nagarajan**

9:30 455. Double layer forces and the dielectric approximation. **L. Pegado**, B. Jönsson, H. Wennerström

10:00 456. Self-regulation and amplification of ion permeation. **H. Moehwald**, J. Duhamet, M. Pleines, T. Zemb

10:30 Intermission.

10:40 457. Surface forces measurement for materials science. **K. Kurihara**

11:10 458. From polymeric to oligomeric stabilization of colloidal spheres. **J. Bergenholtz**

11:40 459. Nanoporous polymer sponges. **R. Strey**

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

DNA at Materials Interfaces

V. Gordon, *Organizer*

A. P. Goodwin, *Organizer, Presiding*

8:30 460. Molecular simulation of single nucleotides moving through nanoslits composed of self-assembled monolayers terminated with various chemical groups. X. Tong, **B. Novak**, D. Moldovan

8:50 461. Charge-reversal nanocarriers for cancer gene delivery. **Y. Shen**

9:10 462. Self-assembled spherical nucleic acids from oligonucleotide-polymer conjugates for drug delivery and immunotherapy. **K. Zhang**

9:30 463. Carbonano-tweezers for twisting DNA duplex in cancer cells. **I. Tripathi**, S.K. Misra, F. Ostadhossein, I. Srivastava, D. Pan

9:50 Intermission.

10:10 464. Combining peptide arrays and mass spectrometry for high throughput experiments. **M. Mrksich**

10:40 465. Bio-nano interfaces for renewable energy. **J. Cha**

11:10 466. Reagentless DNA bioconjugation to metal surfaces. **A.L. Furst**, M.B. Francis

11:30 467. Evidence for DNA as a biomimetic template in calcium phosphate mineralization. **A.E. Gerdon**

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 468. Cargo release mechanics of lipid bilayer coated mesoporous silica nanoparticles. **D.Y. Sasaki**, C. Dolstra, A. Noureddine, J. Brinker

9:00 469. Nanometric gap structure for selective biosensing created with patterned lipid bilayer, silicone elastomer, and silica nanoparticles. **K. Morigaki**, M. Tanabe, R. Komatsu, K. Ando

9:30 470. Probing ion and small molecule drug interactions with lipid membranes. **P.S. Cremer**, S. Sun, S. Pullanchery

10:00 471. Compressible simulation model for lipid bilayer membranes: Faithful treatment of surface tension at the continuum level. **F.L. Brown**

10:30 472. Recent advances in the *in situ* synthesis of phospholipid membranes. **N.K. Devaraj**

11:00 473. Membrane fusion mediated intracellular delivery of lipid bilayer coated mesoporous silica nanoparticles. **A. Kros**

11:30 474. Mechanisms of broad-spectrum antiviral activities of membrane-active molecules targeting enveloped viruses. **A.N. Parikh**

Section D

Ernest N. Morial Convention Center
R06

Chemistry of Molecular Electronics

Monolayers: Tunneling & Function

Cosponsored by PHYS

M. S. Inkpen, G. C. Solomon, L. Venkataraman, *Organizers, Presiding*

8:30 475. Extracting quantitative information from molecular junction i-v characteristics using a compact analytical model. **C. Frisbie**

9:00 476. Impact of fluorinated alkanethiols with embedded dipoles on transport properties of EGaIn top contact devices and organic transistors. **R.C. Bruce**, L. You, L.A. Fredin, A. Förster, E. Bittle, D. Vang, S. Pookpanratana, O. Pomerenk, C.A. Hacker

9:20 477. Single-molecule conductance measurements in solutions and self-assembled monolayers. **M.S. Inkpen**, Z. Liu, H. Li, L.M. Campos, J. Neaton, L. Venkataraman

9:40 478. Electrostatic vs. quantum-mechanical coupling in self-assembled monolayers and its impact on ballistic transport through self-assembled monolayers. **E. Zojer**

10:10 Intermission.

10:20 479. Synthesis and self-assembly in tunneling junctions comprising molecular switches. **R.C. Chiechi**, S. Kumar, J. van Herpt, R. Gengler, B. Feringa, P. Rudolf

10:50 480. Superexchange tunneling: A lesson from nature. **M. Baghbanzadeh**, C.M. Bowers, D. Rappoport, L. Yuan, T. Zaba, P. Cyganik, A. Aspuru-Guzik, G.M. Whitesides

11:10 481. Effect of heteroatom substitution on transport in alkane dithiol based molecular tunnel junctions: Evidence for universal behavior. **Z. Xie**, I. Baldea, C. Frisbie

11:30 482. Transition from direct to inverted charge transport Marcus regions in molecular junctions via molecular orbital gating. **E. del Barco**, Y. Li, L. Wang, A. Rodriguez, M. Anguera Antonana, H. Venkata Annadata, C.A. Nijhuis

11:50 483. Directional plasmon launching from large-area molecular tunnelling junctions. **C.A. Nijhuis**

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

F. Bai, H. Fan, Y. Han, *Organizers*

M. Cai, *Organizer, Presiding*

H. Fan, *Presiding*

8:30 484. Engineering colloidal semiconducting heteronanorods for solar energy conversion. **S. Yu**

9:00 485. Direct imaging of single nanoparticle reaction dynamics using *in-situ* liquid cell electron microscopy. **X. Ye**

9:30 486. Shape-changing and motile colloidal assemblies: Sequence-encoded microbots and colloidal origami from patchy magnetic cubes. **O.D. Velev**, K. Han, C. Shields, G.P. López

9:50 487. Self-organization of silica colloidal particles confined in water-in-oil droplets. **W. Sun**, S. Chen, M. Xu, Y. Wei, T. Fan, G. Yuan

10:10 Intermission.

10:30 488. Silicon nanocrystals. **B.A. Korgel**

11:00 489. Ultra-photostable lead chalcogenide giant quantum dots: A case study in materials-by-design. **J.A. Hollingsworth**, H. Htoon, C. Hanson, A. Singh, S. Krishnamurthy, Z. Hu, A.E. King, A. Piryatinski

11:30 490. Tunable amorphous photonic materials with pigmentary colloidal nanostructures. **Y. Han**, J. Han, E. Lee, A. Pascall, J. Kuntz, M.A. Worsley

11:50 491. Building blocks for the assemble of nanostructures. **T. Gschneidner**

12:10 492. Direct assembly of nanoparticle arrays by electrophoretic deposition. **P. Mulvaney**

Section F

Ernest N. Morial Convention Center
R09

Solubility of Colloids in Different Solvents

N. Feliu, *Organizer*

L. Liz Marzan, W. Parak, *Organizers, Presiding*

8:30 493. Designing nanoparticles for ultrasensitive biosensing. **M. Stevens**

8:55 494. Sedimentation of nanocrystals in different solvents studied by analytical ultracentrifugation. **P. Mulvaney**

9:20 495. Gold nanorods: Can we still do better? **L. Liz Marzan**

9:45 496. Tableting nanoparticle reagents to simplify diagnostic processes. **W. Chan**

10:10 497. Synergizing nanoproperties for effective cancer nanomedicine. **Y. Shen**

10:35 498. Scanning probe block copolymer lithography as a route to combinatorial nanoscience. **C.A. Mirkin**

11:00 499. Hedgehog particles. **N. Kotov**

11:25 500. Solvent-induced reversible self-organization of plasmonic nanoparticles in confined spaces. **M. Grzelczak**, A. Sanchez-Iglesias, N. Claes, S. Bals, L. Liz Marzan

11:50 501. Multiplex functions of DNA functionalized gold nanoparticles. M. Kyriazi, A. El-Sagheer, T. Brown, O. Muskens, **A. Kanaras**

12:15 502. Controllable hydrophobicity of gold nanoparticles coated with 18-CROWN-6-C-SH. **A.P. Hill**, M. Brust

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Novel Synthesis & Nanostructures

J. A. Hollingsworth, R. Nagarajan, *Organizers*
A. B. Greytak, *Presiding*

8:30 503. Experimental and computational development of single source precursors to Sn-Ge nanocrystals. **J. Vela**, M.A. White, H. Andaraarachchi

9:00 504. Phase control in the synthesis of metal sulfide nanocrystals. **J. Macdonald**, J. Rhodes, A.D. Leach

9:30 505. Multicomponent hollow transition metal oxide nanoparticles: Structure-property correlation. **E. Shevchenko**

10:00 506. Hierarchical chirality in inorganic nanocrystals and their superstructures. **P. Wang**, S. Yu, M. Ouyang

10:20 507. Chemically tunable 2-dimensional layered silicon telluride, Si₂Te₃. **K.J. Koski**

10:40 508. Modeling the growth of transition metal dichalcogenide. **H. Chan**, M. Cherukara, B. Narayanan, S. Sankaranarayanan

11:00 509. Precise size control of CsPbX₃ perovskite quantum dots via thermodynamically controlled synthesis. Y. Dong, T. Qiao, **D.H. Son**

11:20 510. Blue electrogenerated chemiluminescence from halide perovskite nanocrystals. **Y. Wusimanjiang**, V. Arau, J. Yadav, S. Pan

11:40 511. Wafer scale synthesis of semiconducting SnO monolayers from interfacial oxide layers of metallic liquid tin. **T. Daeneke**, R.B. Kaner, K. Kalantar-zadeh

Section H

Ernest N. Morial Convention Center
Room 204

Recent Advances in Particulate & Colloid Materials for Biomedical Applications

M. A. Quadir, *Organizer*

B. Rasulev, A. S. Voronov, *Organizers, Presiding*

8:30 512. Iron oxide nanoparticle clustering increases drug uptake and release. P. Price, K. Carlson, J. Dittmar, A. Kohut, A. Voronov, **L. Bronstein**

8:55 513. Recent advances in the use of colloidal Gold nanoparticles in cancer therapy. **D. Chithrani**

9:20 514. Multiple therapeutic objectives from single colloidal assemblies. **G.D. Bothun**

9:45 515. Clay nanotube biocomposites: Sustained drug delivery and tissue scaffolds. **Y.M. Lvov**

10:10 Intermission.

10:25 516. Thermal stabilization of enzymes with biocompatible stiff polymer brush ligands. **S. Minko**

10:50 517. Stimuli-sensitive polymersomes for drug delivery to solid tumors. **S. Mallik**, P. Kulkarni, F. Karandish, M. Confeld

11:15 518. Hybrid nanoparticles as an alternative to conventional antibiotics. **G. Ferreres Cabanes**, A. Bassegoda, T. Tzanov

11:35 519. Nanosubstrate-mediated intracellular delivery for high-throughput gene modification. **N. Wattanatorn**, S. Hou, Q. Yang, C. Zhao, X. Xu, H. Tseng, S. Jonas, P.S. Weiss

11:55 520. Hybrid nanoantibacterials for controlling bacterial infections and spread of drug resistance. **K. Ivanova**, J. Hoyo, A. Ivanova, S. Perez Rafael, T. Tzanov

Section I

Ernest N. Morial Convention Center
Room 205

ACS Award in Surface Chemistry: Symposium in honor of Stacey F. Bent

Atomic-Layer Deposition & its Applications

Cosponsored by WCC

H. Lee, *Organizer*

A. V. Teplyakov, *Organizer, Presiding*

8:30 521. New approaches for area-selective atomic layer deposition of oxides. **A. Mackus**

9:00 522. Approaches to atomic-scale engineering through selective processes. **K. Nardi**, N. Draeger, D. Hausmann, D. Smith

9:30 523. Gas phase routes to solid catalyst materials. **P.C. Stair**

10:00 524. Challenges for selective atomic layer deposition. **Y.J. Chabal**, R. Rahman, J. Klesko, A. Dangerfield

10:30 Intermission.

10:45 525. Adsorption calorimetry during atomic-layer deposition (ALD) and when growing model catalysts. **C.T. Campbell**

11:15 526. Zintl template formation and function during atomic layer deposition growth of crystalline perovskites on Ge (001) and crystalline oxides on GaN(0001). **J.G. Ekerdt**

11:45 527. Atomic layer deposition on T-shirts. H. Lee

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Mechanisms

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

GSSPC: Finding Our Place at the Bottom

Symposium in honor of Richard Feynman

Sponsored by CHED, Cosponsored by ANYL[‡], COLL[‡], ENVR[‡], INOR, PMSE[‡] and PRES[‡]

Physical Chemistry of Ionic Liquids

Computation, Theory & Simulation

Sponsored by PHYS, Cosponsored by COLL[‡]

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

TUESDAY AFTERNOON

Section A

Ernest N. Morial Convention Center
Room 242

ACS Award Lectures

Cosponsored by CATL[‡]

R. Nagarajan, *Organizer*

E. Borguet, *Presiding*

2:00 Introduction of Awardee.

2:10 528. Award Address (ACS Award in Colloid Chemistry sponsored by the Colgate-Palmolive Company). Colloidal stability in the living cell. **H. Wennerström**, M. Oliveberg, E. Vallina, J. Danielsson

3:00 Introduction of Awardee.

3:10 529. Award Address (ACS Award in Surface Chemistry sponsored by the ACS Division of Colloid and Surface Chemistry). Molecular functionalization of surfaces: An evolution from fundamentals to applications. **S.F. Bent**

GSSPC: Finding Our Place at the Bottom

Symposium in honor of Richard Feynman

Sponsored by CHED, Cosponsored by ANYL[‡], COLL[‡], INOR, PHYS[‡], PMSE[‡] and PRES[‡]

WCC Rising Star Award Symposium

Sponsored by WCC, Cosponsored by BIOT, CHED, COLL, INOR and PROF

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Mechanisms

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Functional Structures from Wood-Based Materials

Fibers & Filaments

Sponsored by CELL, Cosponsored by COLL

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

TUESDAY EVENING

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

WEDNESDAY MORNING

Section A

Ernest N. Morial Convention Center
Room 242

Basic Research in Colloids, Surfactants & Nanomaterials

Colloids

R. Nagarajan, *Organizer*

B. Bharti, *Presiding*

8:30 530. Long-range electrostatic forces in ionic liquids. **H.A. Dobbs**, M.A. Gebbie, M. Valtiner, X. Banquy, Z. Berkson, G. Degen, K. Kristiansen, **J.N. Israelachvili**

8:50 531. Understanding network formation and strength development in alkali-activated aluminosilica cements. **Z. Berkson**, H.A. Dobbs, K. Kristiansen, G. Degen, B. Chmelka, J.N. Israelachvili

9:10 532. From plants to clouds – how nanostructured materials mediate transport and phase behavior of water in the environment. **A. Stroock**, A. Robin, P. Lidon, O. Vincent, H. Lu

9:30 533. Investigating mono- and divalent cation induced aggregation of gold nanoparticles in aqueous environments via surface-enhanced Raman spectroscopy. **M. Chan**, W. Leng, P.J. Vikesland

9:50 534. Programming non-linear active motion of colloids by designing surface force distribution. J. Lee, **B. Bharti**

10:10 535. Giant non-aqueous Pickering bubbles: effect of nanoparticle diameter and morphology on stability. **M. Rymaruk**, S.P. Armes, E. Wanless, C. Williams, S. Brown

10:30 536. Computational approach to evaluation of Hamaker constants. **K. Hongo**, R. Maezono

10:50 537. Colloidal stabilization of silica and iron oxide nanoparticles in highly concentrated divalent salts. **C. Dandamudi**, G. Beniah, J. Lee, B.A. Lyon, J. Han, K.D. Pennell, N.A. Lynd, K.P. Johnston

11:10 538. Nanocellular foaming of PLLA spherulites in supercritical CO₂: Control of cell morphology by spherulitic structure. **J. Li**, X. Liao, J. Yang, Q. Jiang, G. Li

11:30 539. Effect of cellulosic fibers on foam dynamics. **W. Xiang**, N. Preisig, C. Stubenrauch, B.L. Tardy, C. Laine, T. Hjelt, T. Tammelin, J. Ketoja, O. Rojas

11:50 540. Composition change at the stern layer of the electrolyte-silica interface leads to false potentiometric titration interpretation of surface charge density. **A. Goel**, M.A. Brown

12:10 541. Numerical study of the dynamics of oil-in-water droplet formation in a coaxial micro-channel. **C. Deng, H. Wang, W. Huang**

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

Interactions of Biomolecules & Lipids

V. Gordon, *Organizer*

A. P. Goodwin, *Organizer, Presiding*

8:30 542. Probing nanolipoprotein particle interactions with supported lipid bilayers at the nanoscale. **A.T. Dang**, M. Coleman, T. Kuhl

8:50 543. Stimulatory effect of phosphatidylglycerol micelle tubes on α -synuclein aggregation. Z. Jiang, J.D. Flynn, **J.C. Lee**

9:10 544. Signal transduction on membrane surfaces. **J.T. Groves**

9:40 545. Interactions of phospholipids and proteins dictate vaporization of fluorocarbon droplets for ultrasound imaging. R. Chattaraj, **A.P. Goodwin**

10:10 Intermission.

10:30 546. Janus particles induce defects in supported lipid bilayers. **K. Lee**, Y. Yu

10:50 547. Integration of bio-membrane in synthetic nanoparticle for diagnosis and therapy. **S. Aryal**, T. Nguyen, A. Pitchaimani

11:20 548. Characterization of the binding of vesicles, viruses and cells to biomimetic lipid bilayers. **M. Verheijden**, D. Di Iorio, G. Koçer, J. Huskens, P. Jonkheijm

11:40 549. Nanoscopic rotational tracking reveals binding dynamics of cell membrane-camouflaged nanoparticles on lipid membranes. **Y. Yu**, Y. Gao, Y. Yu

12:00 550. Attachment of *Alcanivorax borkumensis* to oil-in-water emulsion droplets stabilized by different dispersants. **A. Abbasi**, G.D. Bothun, A. Bose

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, A. N. Parikh, *Organizers*
M. Nieh, *Organizer, Presiding*
J. Nickels, A. Vaish, *Presiding*

8:30 551. GPCR ligand residence times obtained by all-atom simulation. **L. Chen**, E. Lyman

8:50 552. Multi-component lipid bilayer membranes on GO: Domain distribution and fluidity evaluation. **R. Tero**, Y. Okomoto, S. Saito

9:20 553. *In-vivo* structure of the Gram-positive bacterial plasma membrane. **R.F. Standaert**

9:50 554. Molecular modeling of nanoparticle permeation in lipid membranes for drug delivery applications. P. Oroskar, C. Jameson, **S. Murad**

10:20 555. Effects of incorporating channel forming peptides on the thermal fluctuations in lipid bilayers. **M. Nagao**, E.G. Kelley, P. Butler

10:50 556. GPCR-chol interactions: Predictions from all-atom and coarse-grained simulations. **E. Lyman**, L. Yang, E. Rouviere, C. McGraw, A.S. Robinson

11:20 557. Composition and physical properties of living membranes. **I. Levental**, J. Lorent, K. Levental

11:50 558. Structural basis of hydrophilic-polymer-modified lipid domains in supported lipid bilayer and their physical properties. **Y. Kakimoto**, R. Tero

12:10 559. QCM-D study of formation of five-component supported lipid bilayer incorporating cholesterol, sphingomyelin, and ganglioside. **E. Kamaloo**, R. Nagarajan, T.A. Camesano

Section D

Ernest N. Morial Convention Center
R06

Fundamentals & Applications of Emulsions at Nonstandard Conditions

L. Chen, H. Katepalli, R. Moglia, *Organizers, Presiding*

8:30 560. Coalescence and spontaneous emulsification in the presence of asphaltenes. **G.G. Fuller**, S. Bochner, M. Merola, D. Vlassopoulos

9:10 561. Non-aqueous emulsion as a versatile tool for new types of nanoparticles. **M. Klapper**, F. Karagoez, D. Vidakovic, K. Muellen

9:35 562. Microtensiometer platform for characterization of fluid-fluid interfaces through sudden changes in environment. **L. Walker**

10:00 563. Hollow microspheres using interfacial trapping of pristine graphene sheets. **C.D. Liyanage**, D.H. Adamson

10:25 564. Exopolymer produced in the marine environment enhances the stability of oil in water emulsions under saline conditions. **M. Omarova**, L.T. Swientoniewski, I. Mkam Tsengam, D.A. Blake, A. Panchal, Y.M. Lvov, T. Yu, D. Zhang, V.T. John

10:50 565. Development, characterization, and application of novel high temperature thermoplastic and thermoset dispersions. **D. Dermody**, D. Malotky, R. Lundgard, R. Moglia, M. Sekharan, M. Kalinowski, T. Young, J. Romick, D. Himmelberger, J. Mecca

11:15 566. High pressure CO₂-in-mineral oil emulsions and N₂-in-mineral oil foams stabilized by polydimethylsiloxane-based surfactants as a waterless hydraulic fracturing fluid. **S. Alzobaidi**, J. Lee, C. Da, G. Rodriguez, J. Harris, R.J. Perry, K.P. Johnston, R.M. Enick

11:40 567. Schizophrenic diblock copolymer functionalized nanoparticles as temperature responsive Pickering emulsifiers. **H. Katepalli**, M. Ranka, D. Blankshtein, T. Hatton

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

Y. Jiang, *Presiding*

8:30 568. Structure influence on the mechanical properties of self-assembled nanoparticle systems. **X. Lin**

9:00 569. Novel approaches to nanoparticle size control through continuous growth. **D. Huber**

9:30 570. Epitaxially grown particle superlattices via DNA-programmed assembly on lithographic templates. **R. Macfarlane**

9:50 571. Pd-decorated Au nanorods via biomimetic techniques for use as plasmonic catalysts in Suzuki coupling of aryl chlorides. **B. Briggs**, M. Smith, J. Wagner

10:10 Intermission.

10:30 572. Developing hierarchical hybrid polymer-enzyme structures for biomass conversions. **T. Li**, G. Babnigg, J. Johnson

11:00 573. Liquid evaporation-driven assembly of 3-D architected structures by low-dimensional deformable nanomaterials. **B. Xu**

11:30 574. Atomistic modeling of nanoparticle self-assembly: dynamics, interactions and structures. **P. Kral**

11:50 575. Kinetic treatment of the metal-ligand binding for predictive synthesis of colloidal nanoparticles. **S. Mozaffari**, W. Li, C. Thompson, S. Ivanov, A.M. Karim

12:10 576. Investigation of conduction electrons wave function delocalization at the metal nanoparticle–organic ligand interface in solid state. **T. Habarakada Liyanage**, R. Sardar

Section F

Ernest N. Morial Convention Center
R09

Solubility of Colloids in Different Solvents

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

8:30 577. Solubility adjustment of nanocrystals for their use in nanocomposites and in biological environment. **H. Weller**

8:55 578. Optimized multifunctional polymer coating for tuning nanocrystal solubility. W. Wang, Z. Ji, A. Kapur, **H.M. Mattoussi**

9:20 579. Directing gold nanoparticles into biological membranes by fine tuning their dispersibility. **M. Brust**

9:45 580. Surface-Enhanced Raman Scattering (SERS) classification of *K-Ras* point mutations. **L. Guerrini**

10:10 581. Understanding the interaction of nanoparticles and cells: Potential cytotoxicity associated with the uptake of nanoparticles by cells. **N. Feliu**, W. Parak

10:35 582. Degradation of particles effects their colloidal properties. **W. Parak**

11:00 583. Microfluidics and metabolic dying in liquid biopsy. **R.A. Alvarez-Puebla**

11:25 584. Molybdenum disulfide (MoS₂)/graphene oxide (GO) nanocomposites show favorable lung targeting and enhanced drug loading/tumor-killing efficacy with desirable biocompatibility. **S. Liu**

11:50 585. Beauty of metal-organic framework bulk chemistry combined with the fascinating world of nanoparticles. **S. Wuttke**

12:15 586. Coordinating polymer with multiple phosphonic acid anchors for surface-functionalizing metal and metal-oxide nanoparticles. **L. Du, W. Wang, G. Palui, H.M. Mattoussi**

12:35 587. Photo-promoted ligand exchange of gold colloids with lipoic acid-based polymers. **Z. Jin, Y. Sugiyama, C. Zhang, G. Palui, L. Du, H.M. Mattoussi**

Section G

Ernest N. Morial Convention Center
Room 203

Nanomaterials

Nanocomposite Applications: From Plasmonics & Electronics to Biology

J. A. Hollingsworth, R. Nagarajan, *Organizers*
G. Davies, *Presiding*

8:30 588. Nanostructured plasmonic surfaces for diagnostics and chemistry. **H. Moehwald, G. Zhang**

8:50 589. Monitoring plasmonic photocatalysis at the single molecule level with surface-enhanced Raman spectroscopy. **J.L. Brooks, R.R. Frontiera**

9:10 590. Colloidal, nanoelectronic state machines based on 2D materials for aerosolizable electronics. **V. Koman, P. Liu, D. Kozawa, A. Liu, A. Cottrill, M. Strano**

9:30 591. Effect of particle distance in magnetic properties of superparamagnetic iron oxide nanoparticle and its application in contrast enhance magnetic resonance imaging. **T. Nguyen, A. Pitchaimani, C. Ferrel, S. Aryal**

9:50 592. Electrical conductivity and Seebeck coefficient of air-stable n-type polymer composite films. **T. Sutch, J. Allred, G. Szulczewski**

10:10 593. Highly tunable platform for biomimetic catalysts from nanocrystal-polymer composites. **A. Riscoe**, C. Wrasman, A. Menon, M. Hubert, A. Dai, M. Vargas, E. Goodman, A. Yang, A. Beck, L. Wu, M. Cargnello

10:30 594. Local-mapping and photothermal tumor treatment using galectin-1 targeting nanomaterials. **S.V. Jenkins**, R.P. Dings, J. Chen, R.J. Griffin

10:50 595. Selenium-containing polymer@metal-organic frameworks nanocomposites as an efficient multi-responsive drug delivery system. **W. Zhou**, W. zhang, W. Huang, F. Huo

11:10 596. Macromolecularly "caged" carbon nanoparticles for intracellular trafficking via switchable photoluminescence. **I. Srivastava**, S.K. Misra, I. Tripathi, E. Daza, F. Ostadhossein, D. Pan

11:30 597. Ultrasound and enzymes for surface functionalization of medical textiles and devices with antimicrobial nanoparticles. **T. Tzanov**, K. Ivanova

Section H

Ernest N. Morial Convention Center
Room 204

Recent Advances in Particulate & Colloid Materials for Biomedical Applications

A. S. Voronov, *Organizer*

M. A. Quadir, B. Rasulev, *Organizers, Presiding*

8:30 598. Self-dispersing and stimuli-responsive polyurethane dispersions. H. Gupta, **J. Texter**

8:55 599. Synthesis and cell attachment study of hybrid molecular brushes with chitosan backbone as potential materials for wound healing. M. Chawathe, S. Jonnalagadda, **A. Sidorenko**

9:20 600. Surface chemistry modulation in layer-by-layer nanoparticles: How the outer layer dictates nanoparticle-cell interactions. **S. Correa**, E.C. Dreaden, A. Barberio, M.A. Quadir, P.T. Hammond

9:45 601. Mesoporous nanoparticle-supported hybrid bilayers for drug delivery. **S. Shin**, H. Monteith, W. Paxton

10:10 Intermission.

10:25 602. Atomistic modeling of nanoparticles engineered for bio-applications. **P. Kral**

10:50 603. Quantum chemical study on binding of selected amino acids with graphene. **T. Dinadayalane**, D.A. Daggag, J. Lazare, T. Dorlus

11:15 604. Controlled surface modifications of polyester fibers by using Hansen solubility parameters. **G. Sun**, M. Tamizifar

11:40 605. Janus nanoparticles for T-cell activation: Clustering ligands to enhance stimulation. **K. Lee**, Y. Yu

12:05 606. Multifunctional perfluorocarbon nanoparticles for targeting and imaging of lung cancer. **L. Wu**, M. Shao, R. Zhang, H. Wang, X. li, Y. Li, X. Xu, H. Zou, G. Lanza, B. Shen

Section I

Ernest N. Morial Convention Center
Room 205

Surface Chemistry

Polymers & Hydrophobic Surfaces

S. L. Tait, *Organizer*

J. Ngunjiri, C. Rosu, *Presiding*

8:30 607. Variable lysozyme transport dynamics on oxidatively functionalized polystyrene films. **N. Moringo**, H. Shen, L. Tauzin, W. Wang, L. Bishop, C.F. Landes

8:50 608. Biomimetic water-repellent polyester fabrics with long-time durability and mechanical robustness. **C. Rosu**, V. Breedveld, D.W. Hess

9:10 609. Migration of erucamide in polyethylene films at elevated temperatures. **J. Ngunjiri**, M.L. Pacholski, K. Laughlin, R. Sharma, V. Kalihari, M. Kapur

9:40 610. Wrinkled polymer interfaces: Tuning morphologies in ultrathin polymer brush surfaces via postpolymerization modification and soft lithography techniques. **C. Reese**, B. Thompson, P. Logan, D.L. Patton

10:00 Intermission.

10:20 611. Facile approach to large-scale and three-dimensional pore-forming on polymeric objects. **W. Sun**, J. Zhu, Z. Yin

10:40 612. Polymer CORALs with single and double response. Z. Friar, P.B. Moore, **A. Sidorenko**

11:10 613. Materials for moisture harvesting above dew point temperature. **J. Song**, K. Yeung

11:30 614. Surface plasmon & visible light for polymer functionalization of mesoporous silica films. **N. Herzog**, A. Andrieu-Brunsen

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Kinetics

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Functional Structures from Wood-Based Materials

Paper & Fibrils

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Structure

Sponsored by PHYS, Cosponsored by COLL[‡]

Biobased Gels & Porous Materials

Functionalised Nanocellulose Gels

Sponsored by CELL, Cosponsored by COLL and PMSE

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

WEDNESDAY AFTERNOON

Section A

Ernest N. Morial Convention Center
Room 242

Basic Research in Colloids, Surfactants & Nanomaterials

Applications

R. Nagarajan, *Organizer*
M. A. Ilies, *Presiding*

2:00 615. Multifunctional carbon dots for tracking and eradication of drug resistant superbugs. **P.C. Ray**

2:20 616. Electrostatic stabilization of NanoRDX. **M. Doukkali**, R. Patel, V. Stepanov, H. Hadim

2:40 617. Machine learning to better understand hard surface cleaning formulations. **N.S. Brown**, A. Ryan

3:00 618. Advancements in latent fingerprint development. P. Villarreal, I. Villavicencio, **S. Liu**, J.L. Liu

3:20 619. Langmuir films of layered materials: Towards large-area devices. **M. Large**, S. Ogilvie, C.L. Lee, G. Fratta, A.A. King, A. Dalton

3:40 620. Efficient and synergistic nucleic acid delivery with synthetic systems based on pyridinium amphiphiles. **M.A. Ilies**, V.D. Sharma, A. Kizewski, U. Satyal

4:00 621. Novel nanomaterials for water purification: Synthesis, characterization and application of functionalized SWCNTs. **A. Sahu**, K. Blackburn, M. Qumhiyeh, K. Durkin, J.C. Poler

4:20 622. Role of polymers on fragrance retention, release and sensory perception from surfactant-rich rinse-off cosmetics. **M.S. Vethamuthu**

4:40 623. Two-dimensional sheet stabilized emulsion based inks. **F. Chen**, D.H. Adamson

5:00 624. Functionalization of graphene materials for corrosion protection in 2K epoxy and urethane coating systems. **M. Wunch**, S. Mahmood, D. Yang

5:20 625. Sacha inchi (*Plukenetia volubilis*) oil loaded chitosan-alginate micro/nanoemulsion with antioxidant activity. M. Elgegren, D. Cordova, **S. Kim**, J. Nakamatsu, C. Silva, A. Cavaco-Paulo

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

Biomolecular Adhesion to Surfaces

V. Gordon, *Organizer*
A. P. Goodwin, *Organizer, Presiding*

2:00 626. Exploring the influence of amino acid structure on interactions between peptides and hematite surfaces. **J.A. Dunn**, N.N. Casillas Ituarte, S. Lower, B.H. Lower

2:20 627. Forthcoming renaissance for calcium phosphate nanoparticles in biomedicine. **V. Uskokovic**

2:40 628. Sunblock based on bioadhesive nanoparticles. **Y. Deng**

3:00 629. Enhanced stability of immobilized enzymes on heterogeneous lipid bilayers. **A.F. Chaparro Sosa**, D.F. Kienle, R. Falatach, J. Kaar, D.K. Schwartz

3:20 Intermission.

3:40 630. Solution-phase zwitterionic polymers destabilize proteins compared to polyethylene glycol. **L. Kisley**, M. Gruebele, D.E. Leckband

4:00 631. Biointerfacial phenomena in mussel-inspired polymers. P. Delparastan, K. Malollari, **P.B. Messersmith**

4:30 632. Connecting protein structure, function, and interfacial dynamics with single-molecule methods. **J. Kaar**

5:00 633. Direct measurements of protein folding stability in biomaterials. **D.E. Leckband**, L. Kisley, K.A. Serrano, D. Guin, X. Kong, M. Gruebele

5:30 634. Protein-protein interactions control aggregation at silicone oil-water interfaces. **L. Sorret**, M.A. DeWinter, D.K. Schwartz, T. Randolph

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

J. Katsaras, *Organizer, Presiding*
M. Nagao, *Presiding*

2:00 635. Membrane phase separation enhances liposomal delivery of chemotherapeutics. **Z. Imam**, M. Mendicino, J. Stachowiak

2:20 636. Intrinsically disordered proteins sense membrane curvature. **W. Zeno**, U. Baul, W. Snead, L. Wang, E.M. Lafer, D. Thirumalai, J. Stachowiak

2:50 637. Building the tight junction: Probing the assembly and regulation of membrane interface organization through *in vitro* reconstitution. **B. Belardi**, T. Hamkins-Indik, D.A. Fletcher

3:20 638. Non-equilibrium shape transitions of vesicles under osmopheretic flow and its role in biology. **S. Purushothaman**, **S. Emami**, **D. Chang**, **A.N. Parikh**

3:50 639. Chemoselective construction of biomimetic membranes. **R.J. Brea Fernández**, N.K. Devaraj

4:20 640. Elucidating the fundamental mechanisms of surfactant-membrane interactions. **L.S. Small**, J. Churchwell, E. Eis, M. Staykova, C.D. Bain

4:50 641. Dynamic profiling of lipid molecules at picosecond time scale. **D. Bolmatov**, M. Zhernenkov

Section D

Ernest N. Morial Convention Center
R06

Sol-Gel in Nanotechnology: Theory, Synthesis, Characterization & Applications

B. P. Chauhan, *Organizer, Presiding*

2:00 642. Polyimide aerogel coatings for carbon nanotube wire insulation. **H. Guo**, O. Dewey, M. Meador, L.S. McCorkle, M. Pasquali

2:30 643. Scaffolded nanocomposites of aminosilane-stabilized metal-core nanoparticles and carbon nanotubes. **B.P. Chauhan**, I. Kang, K. Yeh, Q. Johnson

3:00 644. Predicting surface area in green synthesis of sol-gel materials. **B.K. Peterson**, M. Afeworki, D.C. Calabro, Q. Li, S. Weston

3:30 645. 3D graphene oxide sol-gel assembly: effects of ammonia and nanosheet morphology on gel properties and their use as structural electrodes for energy storage. D. Parviz, **S. Shah**, M.G. Odom, W. Sun, D. Kulhanek, M.J. Green

4:00 646. Thermoresponsive coatings on mesoporous-shelled hollow particles serve as gates for controlled release. **Y. Su**, V.T. John

4:30 647. Hint1 regulated self-assembly of nucleoside phosphoramidate functionalized self-assembling peptides. **H. West**, C.M. Csizmar, C.R. Wagner

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

Y. Jiang, *Presiding*

2:00 648. Using time-resolved small-angle x-ray scattering to study micellar nucleation during polymerization-induced self-assembly. **M.J. Derry**, O. Mykhaylyk, A. Ryan, S.P. Armes

2:20 649. Single reagent synthesis of copper sulfide nanoparticles in water. **P. Bergstrom Mann**, S. Fairclough, I. McGregor, M. Ma, G. Hogarth, M. Thanou, N.J. Long, M. Green

2:40 650. Fabrication of highly ordered polymer-grafted nanorod assemblies. **J. Streit**, K. Park, A. Jawaid, R. Vaia

3:00 651. Synthesis of stimuli responsive gold nanoclusters via genetically encoded polymers. **Y. Chen**, A. Desiredy, S. Chakraborty, E. Balog, R.C. Rocha, J.S. Martinez

3:20 652. Graphene-based photonic crystals. **A. Dalton**

3:40 Intermission.

3:50 653. Development of polyethyleneimine conjugated gold nanoparticles for biomedical applications: A systematic investigation toward an effective and sustainable approach. **T. Cho**, J.M. Gorham, J.M. Pettibone, J. Liu, J. Tan, V.A. Hackley

4:10 654. Radial dopant placement with angstrom-level control for tuning plasmonic properties in metal oxide nanocrystals. **B. Crockett**, A. Jansons, K.M. Koskela, J.E. Hutchison, D.W. Johnson

4:30 655. Switchable surfactants for the preparation of monodisperse, sinter-resistant supported nanoparticles. **K. Bryant**

4:50 656. Tuning gold nanoparticle assemblies with a family of azobenzene peptide conjugates. **Y. Zhou**, A. Merg, N.L. Rosi

5:10 657. Photoactivated release from polydopamine nanotubes. Y. Sun, **E.W. Davis**

Section F

Ernest N. Morial Convention Center
R09

Basic Research in Colloids, Surfactants & Nanomaterials

Gels & Responsive Colloids

R. Nagarajan, *Organizer*
A. V. Mallia, *Presiding*

2:00 658. Supermolecular hydrogel prepared from thymine-containing artificial nucleolipid: Study of assembly and lyotropic mesophases. **D. Zhang**

2:20 659. Self-healing hydrogels: Relation between microscopic dynamics and macroscopic viscoelasticity. **R. Lund**, L. Willner, T. Zinn, O. Holderer

3:00 660. High-speed AFM reveals detail understanding in adsorption of soft hydrogel microspheres onto solid substrate in aqueous solution. **S. Matsui**, T. Uchihashi, D. Suzuki

3:20 661. Effect of surface functional groups on electric stimuli-responsive behavior of polyacrylonitrile dispersed colloid. **T. Do**, Y. Ko

3:40 662. Gelation studies and thixotropic properties of molecular gels based on ammonium alkanoates as low molecular mass gelators. **A.V. Mallia**, B. Matei, F. Sultan

4:00 663. Advances in stimuli-responsive properties of functional microbial glycolipids. **N. Baccile**

Section G

Ernest N. Morial Convention Center
Room 203

Basic Research in Colloids, Surfactants & Nanomaterials

Nanoparticle Synthesis & Assembly

R. Nagarajan, *Organizer*
M. L. Personick, *Presiding*

2:00 664. Solid-shelled microemulsion with capabilities of confinement-induced release for improving permeability of reservoirs. **L. Hao**, L. Zhang, M. Akbulut

2:20 665. *In situ* monitoring of the reactive crystallization of calcium carbonate in multiphase systems. **T.A. Kathyola**, S. Chang, E.A. Willneff, C. Willis, G. Cibin, P. Wilson, A. Kroner, E.J. Shotton, P.J. Dowding, S. Schroeder

2:40 666. Composition controllable synthesis of PtCu nanodendrites with efficient electrocatalytic activity for methanol oxidation induced by high index surface and electronic interaction. **L. Lu**

3:00 667. Strong sensitized phosphorescence in Mn-doped CsPbBr₃ perovskite nanocrystals. **D. Parobek**, D. Son

3:20 668. Self-assembly of DNA-coated patchy particles from colloidal fusion. **M. He**, Z. Gong, S. Sacanna, D. Pine

3:40 669. Silica hallow particles prepared by encapsulation of water droplets with perhydropolysilazane in hydrophobic solvents. K. Kuramochi, H. Kiyosawa, **R. Saito**

4:00 670. Strong exciton-plasmon coupling in silver nanowire nanocavities. **G. Beane**, B. Brown, P. Johns, T. Devkota, G.V. Hartland

4:20 671. Hierarchical assembly of supramolecular G-quadruplexes via enzyme instructed self-assembly. **L.A. Prieto-Costas**, J. Rivera, N. Lui

4:40 672. Coupling competitive surface interactions: A synthetic route to enhanced grain boundaries at the exterior of multiply twinned palladium nanoparticles. **M.E. King**, M.L. Personick

5:00 673. Pamitoyl-co-enzyme-A colloidal nanoparticles for transcriptional chemobiologics therapy. **S.K. Misra**

5:20 674. Rapid fabrication of hollow α -Fe₂O₃ particles with applications to enhanced photo-fenton reactions. **Y. Zhang**, Y. Su, J. He, G. McPherson, V.T. John

Section H

Ernest N. Morial Convention Center
Room 204

Recent Advances in Particulate & Colloid Materials for Biomedical Applications

A. S. Voronov, *Organizer*

M. A. Quadir, B. Rasulev, *Organizers, Presiding*

2:00 675. Understanding protein uptake properties of ionically crosslinked micro- and nanogels. Y. Cai, **Y. Lapitsky**

2:20 676. Antibacterial and antibiofilm layer-by-layer decorated nanoparticles. **A. Ivanova**, K. Ivanova, J. Hoyo, T.J. Heinze, T. Tzanov

2:40 677. Nanoparticle system for pH-triggered aptamer targeting and Pt (II) delivery to cancer cells. M.T. Wlodarczyk, S.A. Dragulska, Y. Chen, O. Camacho-Vanegas, P. Dottino, J.A. Martignetti, **A.J. Mieszawska**

3:00 678. Stimuli-responsive zwitterionic microgels. **A. Pich**

3:20 679. Reprogramming growth factor signaling through nanoconjugation. A. Khanehzar, **B.M. Reinhard**

3:40 Intermission.

3:55 680. Imaging the kinetics of serotonin receptor trafficking with quantum-dot nanoparticles. G.K. Illy, E.B. Nowak, **K. Fichter**

4:15 681. Nanosized MRI contrast agents: Engineering nanostructure and surfaces for contrast signal control and towards non-invasive diagnostics. **G.H. Lee**, G. Davies, C. Hutchinson

4:35 682. SERS of bacteria using ag colloid suspensions. **R.D. George**, K. Sorensen, P. Mosier-Boss, P. Sims, A. O'Braztsova

4:55 683. Indocyanine green-loaded multifunctional multiwalled carbon nanotubes as a versatile platform for targeted dual-mode imaging and phototherapy of tumors. Y. Hu, R. Wang, Y. Zhou, D. Gao, **X. Shi**, M. Shen

5:15 684. Exploiting Le Chatelier's principle for a one-pot synthesis of nontoxic HHogGNPs with the sharpest nanoscopic features suitable for tunable plasmon spectroscopy and high throughput SERS sensing. **M. Bhattacharya**

Section I

Ernest N. Morial Convention Center
Room 205

Surface Chemistry

Adsorption at Surfaces

S. L. Tait, *Organizer*

C. Carbonell Fernandez, T. J. Mullen, *Presiding*

2:00 685. Expanding the molecular-ruler process through the solution and vapor deposition of alkanethiol molecules. **T.J. Mullen**

2:30 686. Reactivity of confined carboxylic acids in thin films. **D.P. Goronzy**, E. Avery, N.M. Gallup, J. Staněk, J. Macháček, T. Baše, K.N. Houk, P.S. Weiss

2:50 687. Surface-bound SuFEx chemistry: A fast and quantitative organic reaction. D. Gahtory, R. Sen, S.P. Pujari, S. Li, Q. Zheng, J. Moses, K.B. Sharpless, **H. Zuilhof**

3:20 688. Reactivity, kinetics, and limitations of SuFEx chemistry used for surface functionalization. **K. Brooks**, J. Yatvin, M. Kovaliov, G.H. Crane, S. Averick, J.J. Locklin

3:40 Intermission.

4:00 689. Multiplexed light-mediated tip-based molecular printing in continuous capillary flow. **C. Carbonell Fernandez**, D.J. Valles, A. Wong, M. Wai, M. Niang, A.B. Braunschweig

4:20 690. Superamphiphobic wood surfaces. M. Sedighi Moghaddam, M. Tuominen, J. Haapanen, J. Mäkelä, **A. Swerin**

4:50 691. Dosing drops with liquid needle to measure advancing and static contact angles. **R.J. Sanedrin**, M. Jin, D. Frese, C. Scheithauer, T. Willers

Functional Structures from Wood-Based Materials

Films & Low-Density Composites

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Transport & Dynamics

Sponsored by PHYS, Cosponsored by COLL[‡]

Biobased Gels & Porous Materials

Cellulose & Non-Cellulose Gels: Synthesis, Properties, Applications

Sponsored by CELL, Cosponsored by COLL and PMSE

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

Polymer Colloids: Synthesis, Analysis, Modeling & Applications

Sponsored by POLY, Cosponsored by ANYL, COLL, COMP, I&EC and PMSE

WEDNESDAY EVENING

Fluid-Solid Interfacial Phenomena at the Nexus of Energy & Geochemistry Research: A Symposium in Honor of David J. Wesolowski

Sponsored by GEOC, Cosponsored by COLL, ENFL, ENVR and INOR

THURSDAY MORNING

Section A

Ernest N. Morial Convention Center
Room 242

Basic Research in Colloids, Surfactants & Nanomaterials

Surfaces & Interfaces

R. Nagarajan, *Organizer*

R. Quinones, *Presiding*

8:30 692. Low electric and magnetic field induced transient spin dynamics of sanguinarine on single domain nanosurface. **S. Das Chakraborty**

8:50 693. Chemical mapping of the evolving material interface of particles in liquids.
X. Yu

9:10 694. Study of polymorphism using patterned self-assembled monolayers approach on metal substrates. **R. Quinones**

9:30 695. Balancing multiple orthogonal functions simultaneously on a single surface.
T. Lawton, J. Uzarski, S. Filocamo

9:50 696. Controlling surface oxidation of gallium liquid metal colloids through judicious ligand selection. **C.E. Tabor**, Z. Farrell, I. Anderson, C. Thrasher, J. Mingear

10:10 697. Thermochemical analysis of proton coupled electron transfer at titanium dioxide nanoparticles. **J. Peper**, B. Boudy, J.M. Mayer

10:30 698. Solvent-dependent ligand structure and conformation on gold and silver nanoparticles. **P.P. De Silva**, D. Zhang

10:50 699. Surface chemistry of engineered nanoparticles in biological and environmental media of varying pH. **A.H. Alminshid**, V.H. Grassian, S.C. Larsen

11:10 700. Confocal raman microscopy investigation of mixed-surfactant monolayers at n-alkyl-chain functionalized surfaces in chromatographic particles. **M. Zare**, J.P. Kitt, D. Bryce, J.M. Harris

11:30 701. Surfactant-free graphene exfoliation study between solvent interfaces. **T. Hui**, D.H. Adamson

11:50 702. Slippery liquid-immobilized film with high thermal and chemical stability.
S. Shiratori, Y. Tsuge

Section B

Ernest N. Morial Convention Center
Room 245

Biomaterials & Biointerfaces

Advances in Biomaterials

V. Gordon, *Organizer*

A. P. Goodwin, *Organizer, Presiding*

8:30 703. Silk fibroin microcapsules as functional bioreactors for *in vitro* protein synthesis. **I. Drachuk**, S. Harbaugh, J.L. Chavez, N. Kelley-Loughnane

8:50 704. Cellulose biointerface for paper diagnostics. V. Raghuwanshi, Z. Huang, N. Yeow, C. Garvey, R. Tabor, **G. Garnier**

9:10 705. Surface design of sulfonated-supramolecular substrates for tethering bone morphogenetic protein 2. **Y. Arisaka**, N. Yui

9:30 706. Blood-vessel-like polymer tubes that can morph their diameter and shape in response to stimuli. **S.R. Raghavan**, B. Zarket

9:50 707. Rapid electroformation of alginate gels into complex shapes for tissue engineering. **S.R. Raghavan**, A. Gargava

10:10 Intermission.

10:30 708. Poorly adhesive materials and their affect on cellular metabolism. **R. Surmaitis**, C.J. Arias, J.B. Schlenoff

10:50 709. Probing forces between stem cells and biomaterials using colloidal probe microscopy. **M.K. Osterberg**, R. Harjumäki, R.W. Nugroho, J. Valle-Delgado

11:10 710. Nanomaterials for the characterisation of cellular structure and mobility. **A. King**, R. Harries, S. Ogilvie, M. Large, I. Jurewicz, A. Dalton

11:30 711. Self-assembled zwitterionic polymer-curcumin conjugates: Potent nano-inhibitors against amyloid β -protein fibrillogenesis and cytotoxicity. G. Zhao, X. Dong, **Y. Sun**

11:50 Concluding Remarks.

Section C

Ernest N. Morial Convention Center
R07

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 712. Characterizing metallomembranes using vibrational sum frequency spectroscopy. **S. Pullanchery**, S. Sun, M.F. Poyton, P.S. Cremer

8:50 713. Understanding the permeation of charged peptides through model membranes using experiment and simulation. **C.M. Anderson**, A.E. Cardenas, J. Flanagan, L.J. Webb

9:10 714. Probing the interaction between antimicrobial peptides and biomembranes using small angle scattering techniques. **J.E. Nielsen**, V. Bjørnstad, R. Lund

9:30 715. Single molecule detection of biomarker in a nanometric gap structure combined with fluid membrane. **K. Ando**, F. Hayashi, K. Morigaki

9:50 716. Raftophilicity of membrane proteins in phototransduction evaluated with a micropatterned model membrane. **Y. Tanimoto**, S. Kojima, F. Hayashi, A. Awazu, K. Morigaki

10:10 717. *In situ* methods for tuning membrane structure and lipid mobility in polyacrylic acid-cushioned supported lipid bilayers. **A.T. Dang**, T. Kuhl

10:30 718. Membrane thickness-mediated protein-protein interactions in multicomponent lipid systems. **E. Ho**, M. Haataja

10:50 719. Investigating the dynamics of phosphatidylinositide lipids in supported bilayers. **S. Sun**, D.R. Melendez, C. Liu, T. Yang, P.S. Cremer

11:10 720. Out-of-plane alignment and in-plane growth of domain in lipid multilayer upon surface ion binding. **S. Lee**, Y. Lee, J. Bak, D. Jeong, J. Lee, H. Lee, C. Hyeon, M. Choi

11:30 721. Enzymatic strategies of *de novo* phospholipid membrane formation. **A. Bhattacharya**, N.K. Devaraj

11:50 722. Pulsatile gating of giant vesicles containing macromolecular crowding agents induced by colligative non-ideality. **W. Su**, D.L. Gettel, M. Chabanon, P. Rangamani, A.N. Parikh

Ernest N. Morial Convention Center
R06

Basic Research in Colloids, Surfactants & Nanomaterials

Interfaces in Amphiphilic Systems

R. Nagarajan, *Organizer*

S. Roke, *Presiding*

8:30 723. Talking heads: A conversation between co-surfactant head groups at the oil-water interface. **R. Ciszewski**, B. Muller, G.L. Richmond

8:50 724. New insights on interfacial structure of polymer/surfactant complexes. **B. Schabes**, R. Altman, G.L. Richmond

9:10 725. Structure-function relationships and worm-like micelle formation of novel carbohydrate-based surfactants. **J. Moore**, C. Garvey, L. de Campo, A. Sokolova, B. Wilkinson, R. Tabor

9:30 726. Molecule dynamics simulations of the fluorinated and fluorine-free surfactant monolayers at air-water and heptane-water interfaces. **X. Zhuang**, R. Ananth

9:50 727. Gibbs ensemble Monte Carlo simulations for additive loading in surfactant bilayers. **M.S. Minkara**, J.I. Siepmann

10:10 728. Zwitterionic and charged lipids form remarkably different structures on nanoscale oil droplets in aqueous solution. Y. Chen, H. Okur, C. Luetgebaucks, **S. Roke**

10:30 729. Transition of unilamellar cationic liposomes to bilamellar structures through the depletion effect. **Y. Zhang**, J.S. Arora, J. He, V.T. John

10:50 730. Finding new eco-friendly dispersants for oil-spill remediation: Lignin based solutions for oil-herding. **J. Lee**, J. Cantrell, B. Bharti

11:10 731. Foam control agent development for food processing. **X. Chen**, S. Ospino, M. Whitley, M. Tulchinsky, W. Gao, T. Zhang, F. Donate, A. Ossola, P. Cameron, B. Radtke, S. King, C. Cummins

11:30 732. Self-assembled monolayers derived from unsymmetrical spiroalkanedithiols having hydrophobic and hydrophilic tailgroups. **R. Ghanbaripour, T. Lee**

11:50 733. Composition-driven structural transitions from vesicles to bicelles to micells using phospholipid and nonionic surfactant mixtures. **I. Mkam Tsengam, M. Omarova, S.R. Raghavan, G.D. Bothun, A. McCormick, V.T. John**

Section E

Ernest N. Morial Convention Center
R08

Colloidal Nanoparticle Synthesis & Assembly

Financially supported by Henan University and King Abdullah University of Science and Technology

M. Cai, H. Fan, Y. Han, *Organizers*

F. Bai, *Organizer, Presiding*

Y. Jiang, *Presiding*

8:30 734. Combination of atomic layer deposition and self-assembly of colloidal nanoparticles for high-performance gas separation membranes. **Y. Jiang, C. Fan, G. Jiang, Z. Wang, Y. Gao, Y. Tian, H. Zhang**

8:50 735. Phase transferable polymer encapsulated bimetallic nanoparticles. **S. Street, M. Confer**

9:10 736. Autoperforation of 2D materials for generating two terminal memresistive Janus particles. **A.T. Liu, P. Liu, M. Strano**

9:30 737. Surface passivation and supersaturation: strategies for regioselective deposition in seeded syntheses. **A. Chen, M.M. Scanlan, S.E. Skrabalak**

9:50 738. Singly dispersed gold nanoshell-bearing cellulose nanocrystals with tailorable plasmon resonance. **N. Semenikhin, N. Kadasala, R.J. Moon, J.W. Perry, K.H. Sandhage**

10:10 739. Synthesis of high performance anisotropic SmCo₅ nanomagnets by reduction of Co-Sm(OH)₃ assembly. **B. Shen, S. Sun**

10:30 740. Low-temperature solution synthesis of titanium nitride nanoparticles. **A.J. Kuehne**

10:50 741. Sophorolipid-coated superparamagnetic iron oxide nanoparticles: Synthesis and structure. **A. Lassenberger**, E. Reimhult, N. Baccile

11:10 742. Alternate path to formation of co-aligned mesocrystals. **G. Zhu**, J.A. Soltis, J. Tao, B. Legg, C. Wang, J. De Yoreo

11:30 743. Aggregated gold nanoparticles demonstrate increased surface-enhanced Raman scattering activity in presence of hydrogen peroxide. **A.A. Novikov**, M.V. Gorbachevskiy, D.S. Kopitsyn, M.S. Kotelev, Y.M. Lvov, V. Vinokurov

11:50 744. Approaches for bridging dissimilar reduction kinetics in the synthesis of bimetallic nanomaterials. **M.L. Personick**, A.L. Stone, D. Solti, M.E. King, H. Jung, I.A. Kent

12:10 745. Self-assembled porphyrin nanocrystals for efficient visible-light-driven hydrogen evolution. **Y. Liu**, F. Bai

Section F

Ernest N. Morial Convention Center
R09

Basic Research in Colloids, Surfactants & Nanomaterials

Biointerfaces

R. Nagarajan, *Organizer*
M. R. Mackiewicz, *Presiding*

8:30 746. Slippery liquid-infused porous surfaces for cell deformation microfluidic devices and cargo delivery. **A. Mendoza**, C. Zhao, Q. Yang, P. Kim, S. Jonas, P.S. Weiss

8:50 747. Liquid crystalline particles for delivery of antimicrobial peptides. **L. Boge**, A. Umerska, N. Matougui, H. Bysell, L. Ringstad, M. Davoudi, J. Eriksson, K. Edwards, M. Andersson

9:10 748. Understanding fine textures in touch — the role of fingerprints in modulating sliding friction on surfaces and haptic devices. **C. Dhong**, D.J. Lipomi

9:30 749. Versatile glycosurfaces fabrication on poly(pentafluorophenyl acrylate) grafted scaffold via hydrazide conjugation and its application in *Mycoplasma Pneumoniae*. **L. Chen**, C. William, D. Krause, J.J. Locklin

9:50 750. Covalent grafting of antifouling phosphorylcholine-based copolymers with antimicrobial nitric oxide releasing polymers to enhance infection-resistant properties of medical device coatings. **Q. Liu**, P. Singha, H. Handa, J.J. Locklin

10:10 751. Cell separation by thermoresponsive nanofibers using N-isopropylacrylamide. **S. Shiratori**, T. Konishi, J. Li, Y. Tokura, M. Tenjimabayashi, K. Homma, K. Matsukawa, A.M. Akimoto

10:30 752. Interactions of gold nanoparticles and skin. **A. Kanaras**, R. Fernandes

10:50 753. Nanoparticle-coated surfaces provide quantifiable insight into thermal and radiation effects. **S.V. Jenkins**, R.P. Dings, M. Borrelli, R.J. Griffin

11:10 754. Nanomaterials for enhancing the resolution of optical coherence tomography in the retina. **M.R. Mackiewicz**, K. Kinnison, J. Stoddard, R.C. Hugo, T.J. McGill

11:30 755. Antimicrobial amidinourea polymers for treating drug resistance bacteria. M. Ahmed, **J. Moon**

11:50 756. Dual stimuli platform for remotely controlled drug delivery. **A.M. Laradji**, A. Zakharchenko, R. Saremi, N. Yadavalli, A. Gruzd, S. Minko

12:10 757. Protein-induced gold nanoparticle aggregation probed by label-free second harmonic light scattering. **K. Mishra**, P.K. Das

Section G

Ernest N. Morial Convention Center
Room 203

Basic Research in Colloids, Surfactants & Nanomaterials

Nanomaterials

R. Nagarajan, *Organizer*

P. S. May, *Presiding*

8:30 758. Unusual p-n heterostructured water-borne nanoparticles exhibiting superior charge separation ability. **Y. Kim**, B. Lee

8:50 759. Ultrafast dynamics of single aluminum nanostructures. **M. Su**, P.D. Dongare, S.H. Jebeli, D. Renard, Y. Zhang, C. Yi, W. Chang, P.J. Nordlander, N.J. Halas, S. Link

9:10 760. Fe-L edge spectroscopy reveals the chemistry of iron in nanoscale particulate matter. A. Pattammattel, H. Forman, P.A. O'Day, **V. Leppert**

9:30 761. Influence of poly-(ethylene glycol) coatings in the surface plasmon resonance induced photothermal property of gold nanorod. **R. Marasini**, A. Pitchaimani, T. Nguyen, S. Aryal

9:50 762. Beyond the near-field: Enhancing the efficiency of upconversion-luminescence nanomaterials using the diffractive and reflective properties of structured metal surfaces. **P.S. May**, A. Baride, M.T. Berry, S. Smith

10:10 763. Pressure dependence of excited state dynamics in CdSe/CdS heterostructure nanocrystals. **L. Hanson**, C.W. Li, P. Alivisatos

10:30 764. Hybrid metal-semiconductor nanoparticles for hot electron luminescence upconversion. **B. Roman**, J. Otto, D. Dacres, C. Galik, R. Downing, M. Sheldon

10:50 765. Synthesis of Au₃₈(SCH₂CH₂Ph)₂₄, Au₃₆(SPhtBu)₂₄, and Au₃₀(StBu)₁₈ nanomolecules and structural selectivity. **M. Rambukwella**, A. Dass

11:10 766. Reactive Ag⁺ adsorption onto gold. **S. Athukorale**, D. Zhang

11:30 767. Modeling the photon avalanche upconversion mechanism in Tm³⁺, Yb³⁺ co-doped β-NaYF₄ nanocrystals. **M. Hossan**, M. Berry, S. May

11:50 768. Controlling ligand orientation and conformational order on nanostructured materials. **L.A. Velarde**, S. Sengupta, S.T. Algoul

12:10 769. Photo-induced electron transfer from amino acids to nitrogen functionalized graphene quantum dots. **S. Mukherjee**, P. Edamana, A. Chadha

Ernest N. Morial Convention Center
Room 204

Recent Advances in Particulate & Colloid Materials for Biomedical Applications

A. S. Voronov, *Organizer*

M. A. Quadir, B. Rasulev, *Organizers, Presiding*

8:30 770. Encapsulation of conjugated polymers in self-assembling polymer micelles for biological imaging applications. **S. Bourke**, F. Dona, P. Bergstrom Mann, Y.T. Gonzalez, M. Panamarova, **U.S. Eggert**, K. Suhling, M. Green

8:50 771. Active antioxidizing polymeric particles for on-demand pressure-driven molecular release. **Y. Seo**, J. Leong, J. Teo, J.W. Mitchell, M.U. Gillette, B. Han, J. Lee, H. Kong

9:10 772. CuInS₂/ZnS quantum dot based probe for monitoring the acetylation of mitochondrial proteins. **C. Wang**, E. Weiss

9:30 773. Highly selective capturing of biomolecules by antifouling zwitterionic polymer-coated microbeads. **E. van Andel**, H. Zuilhof, M. Smulders, E. Tijhaar, H. Savelkoul

9:50 774. Microphysiological multi-tissue platform for simultaneous efficacy and toxicity testing of drug formulations. C. Lohasz, P.M. Misun, F. Bonanini, F. Hürlimann, O. Frey, **K. Renggli**, A. Hierlemann

10:10 Intermission.

10:25 775. Hybrid nanoparticles of a conjugated polymer and iron oxide nanocrystals for simultaneous photothermal, photoacoustic and magnetic effects. **J. Park**, D. Pham, E. Kang, S. Kim

10:45 776. Manganoporphyrin-polyphenol multilayer capsules as radical and ROS scavengers. **A. Alford**, V.A. Kozlovskaya, D. Pham-Hua, L. He, V. Urban, H.M. Tse, E.P. Kharlampieva

11:05 777. Electrically-activated bursting of aqueous microcapsules made from nonconducting, biocompatible polymers: A new mode for drug delivery compatible with wearable electronics. **S.R. Raghavan**, A. Gargava

11:25 778. Nanoparticle-laden macrophage as a tumor tropic drug delivery system for improved cancer treatment. **W. Zhang**, M. Wang, Z. Zhen, H. Chen, M. Chapman, W. Tang, T. Todd, T. Cowger, S. Zhou, H. Wang, I. Delahunty, Z. Li, J. Xie

11:45 779. Gold-nanoparticle-assisted homocysteine enrichment and ratiometric quantification. **A. Olukoya**, D. Zhang

12:05 780. Radiofrequency and near-infrared responsive core-shell nanoparticles formed by lipid templating. **A. Pan**, G.D. Bothun

Section I

Ernest N. Morial Convention Center
Room 205

Surface Chemistry

Carbon Surfaces & Environmental Adsorption

S. L. Tait, *Organizer*

L. C. Henderson, L. A. Velarde, *Presiding*

8:30 781. Modifying the surface of carbon fiber for fiber-to-matrix adhesion. **L.C. Henderson**, L. Servinis, J. Randall, C. Arnold

9:00 782. Surface modification of sp^2 hybridized carbon nanomaterials via an inverse electron demand Diels-Alder reaction. **J. Zhu**, R. Lennox

9:20 783. Functionalized carbon nanomaterials for energy storage devices. **J. Zuczek**, N. Elathram, W. Hixson, J.C. Poler

9:40 784. Composite nanomaterials for water purification: Sustainable high-capacity rapid removal of small molecule DBP precursors. **J.C. Poler**, A. Sahu, K. Durkin, K. Blackburn

10:00 785. Enhancement of perovskite crystallinity by interfacial lead adsorption on TiO₂. **K.C. Saunders**, J. Stanfill, B. Fessler, R. Shallcross, S.S. Saavedra, N.R. Armstrong

10:20 Intermission.

10:40 786. Binding and orientation of carbamate pesticides on mineral surfaces. L. Bromley III, J. Cartagena, P. Videla, A. Fernando, V.S. Batista, **L.A. Velarde**

11:00 787. Revealing the complexities of hydroxyacetone at the air-water via vibrational sum frequency spectroscopy and computational methodologies. **B. Gordon**, F.G. Moore, L.F. Scatena, N.A. Valley, S. Wren, G.L. Richmond

11:20 788. Native urban films' spatial and chemical heterogeneity reported by microscopy and SIMS analysis. **J.S. Grant**, S.K. Shaw

11:40 789. Mechanism of adsorption of phosphatidylcholine from a dispersion of vesicles onto a clean air-water interface. **J. Staton**, S.R. Dungan

Elucidation of Mechanisms & Kinetics on Surfaces

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Functional Structures from Wood-Based Materials

Biosensing & Biomaterials

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Interfaces & Ionic Liquid Nanoscience

Sponsored by PHYS, Cosponsored by COLL[‡]

Biobased Gels & Porous Materials

Biomedical Applications of Polysaccharide Gels & Aerogels

Sponsored by CELL, Cosponsored by COLL and PMSE

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

THURSDAY AFTERNOON

Elucidation of Mechanisms & Kinetics on Surfaces

Sponsored by CATL, Cosponsored by COLL, ENVR and PHYS

Functional Structures from Wood-Based Materials

Designed Structures & Processing

Sponsored by CELL, Cosponsored by COLL

Physical Chemistry of Ionic Liquids

Ionic Liquid-Solute-Solvent Interactions

Sponsored by PHYS, Cosponsored by COLL[‡]

Adaptive Nanogels

Sponsored by POLY, Cosponsored by COLL

Biobased Gels & Porous Materials

Polysaccharide Foams, Cryogels & Aerogels

Sponsored by CELL, Cosponsored by COLL and PMSE

DRAFT