COLL

Division of Colloid and Surface Chemistry

R. Nagarajan, *Program Chair*

SUNDAY MORNING

Section A

Orange County Convention Center
West Hall B4 - Theater 1

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Characterization of the Ligand Coating on Nanocrystal Surfaces

V. M. Rotello, *Organizer*
H. M. Mattoussi, *Organizer, Presiding*
Z. Hens, *Presiding*

8:30 Introductory Remarks.

8:45 COLL 1. Colloidal nanocrystal surface chemistry: A perspective based on NMR spectroscopy. **Z. Hens**

9:15 COLL 2. Characterization of semiconductor nanocrystals using advanced NMR spectroscopy. **L. Piveteau**, T. Ong, B.J. Walder, D.N. Dirin, D. Moscheni, B. Schneider, L. Protesescu, N. Masciocchi, A. Guagliardi, L. Emsley, C. Coperet, M. Kovalenko

9:35 COLL 3. Atomic-level structures of the organic-inorganic interface by NMR crystallography. **L. Emsley**

10:05 Intermission.

10:25 COLL 4. Ligand and surfactant distribution on inorganic nanoparticles. **L. Liz Marzan**

10:55 COLL 5. X-ray-mediated release of molecules and engineered proteins from nanostructure surfaces. M. Su, K. Guggenheim, J. Lien, J.B. Siegel, **T. Guo**

11:15 COLL 6. Impact of pH on the orientation of antibody adsorbed onto gold nanoparticles. **J.D. Driskell**, G. Ruiz, K. Tripathi

11:35 COLL 7. Biomimetic self-assembly of functional gold nanoparticles. **N. Nonappa**, P. Engelhardt

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Advances in Biomaterials

Y. Lapitsky, *Organizer*
R. Wylie, *Organizer, Presiding*
J. Moran-Mirabal, *Presiding*

8:30 COLL 8. Molecular mechanical characterization of bioinspired catecholamine polymers at interfaces. K. Malollari, P. Delparastan, **P.B. Messersmith**

9:00 COLL 9. Role of membrane lipid asymmetry in regulating nanoparticle-plasma membrane interactions. S. Nazemidashtarjandi, **A. Farnoud**

9:20 COLL 10. Functionalizing silk fibroin with fluorocarbons via F-capping chemistry to create multiuse inks. **M.J. Hawker**, J. Fountain, V. Montanari, K. Kumar, D.L. Kaplan

9:40 COLL 11. Effect of shape on buckling instability of multilayer hydrogel microcapsules in solutions. **N. Gupta**, V.A. Kozlovskaya, E.P. Kharlampieva

10:00 COLL 12. pH-Driven hierarchical assembly of DNA origami nanostructures. **S. Yang**, W. Liu, R. Wang

10:20 COLL 13. Single-step synthesis of alginate microbeads with a PEG shell: A new way to protect encapsulated cells. **S. Ahn**, W.E. Bentley, S.R. Raghavan

10:40 COLL 14. Fluorescent artificial lipoprotein with improved thermal stability for cell imaging and drug delivery. **J. Ding**, C.V. Kumar

11:00 COLL 15. Linking the kinetics of calcium carbonate formation and crystallization to the mechanical response of mineralized hydrogels. **J. Lopez-Berganza**, R.M. Espinosa-Marzal

11:20 COLL 16. One-pot synthesis of hybrid MoS_2/graphene nanosheet suspensions in water for bioelectronic and sensing applications. **M. Puglia**, C.V. Kumar

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Quantitative Particle Cell Interaction

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

8:30 COLL 17. Self-assembly of biomimetic nanoparticles with amyloid proteins: Concept and functions. **N. Kotov**, Y. Wang, U. Kadiyala, Z. Qu, P. Elvati, C. Altheim, A. Violi, J. VanEpps

9:00 COLL 18. Next-generation of quantum dot sensing. **H. Weller**

9:30 COLL 19. Elucidating the nanoparticle-cell interface. **M. Stevens**

10:00 COLL 20. Harvesting immunogenic cell death-inducing nanocarriers and catalytically active redox-active nanomaterials for nano-enabled breast and pancreas cancer immunotherapy. **A. Nel**

10:30 COLL 21. Nanoengineering of poly(ethylene glycol) particles for stealth and targeting. **F. Caruso**

11:00 COLL 22. Nanoparticles interaction with viruses. **F. Stellacci**

11:30 COLL 23. Utilizing meta-analysis to understand the cellular toxicity of quantum dots. **I. Medintz**, M. Bilal, E. Oh, R. Liu, H. Liu, J. Breger, Y. Cohen

Section D

Orange County Convention Center
West Hall B4 - Theater 4

Novel Functionalization Methods for Textiles & Fibers

M. Richards, *Organizer*
N. Pomerantz, *Organizer*, *Presiding*
M. Richards, *Presiding*

8:30 COLL 24. Water-based environmentally benign flame retardant nanocoatings for textiles. **J.C. Grunlan**, S. Lazar

9:00 COLL 25. Microencapsulation of flame retardants: A new approach for imparting fire resistance to nylon-cotton fabric blends. **R. Sharma**, J.D. Ogilvie-Battersby, D. Hari, J. Kumar, R. Mosurkal, N. Orbey, R. Nagarajan

9:30 COLL 26. Functional, biobased poly(phosphazene) flame-retardant coatings for textiles. **A. Pich**, A. Deniz

10:00 COLL 27. Functionalized fabrics for chemical protection. **B.J. Johnson**, B.J. Melde, M.H. Moore

10:30 COLL 28. Zinc oxide nanoparticles on polypropylene fibers and films: Adhesion and surface segregation. S. Kim, O. Grimm, E.A. Welsh, R. Pang, P.J. Stenhouse, D.M. Steeves, J.W. Soares, **J.E. Whitten**

11:00 COLL 29. Decontamination of toxic organophosphates using metal hydroxide/polymer textiles: Particle aggregation and its effects on material performance. **D.B. Dwyer**, J. Gomez, A. Davoodabadi, T. Tovar, W. Bernier, J. DeCoste, W.E. Jones

11:30 COLL 30. Aminated polyacrylonitrile fiber coated with Fe_2O_3 as a high-capacity adsorbent for phosphorus removal. **J. Youngkyun**, T. Do, Y. Ko, U. Choi

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

Applications: Colloid & Surface Chemistry Influencing Function

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

8:30 COLL 31. Hybrid dual-functional Ag@Au based nanofilms with high sensitivity for in-situ SERS monitoring of catalytic reaction. **S. He**, F. Tian

8:50 COLL 32. Degradation studies on organophosphate methyl parathion mediated by silver-titania core-shell nanoparticles. **S. Talebzadeh Farooji**, F. Forato, B. Bujoli, S. Trammell, S. Grolleau, H. Pal, c. queffelec, D. Knight

9:10 COLL 33. Self-assembled monolayer of 2D metal oxides: Applications in gas sensing. **J. Miao**, L. Meng, C. Chen, J.Y. Lin

9:30 COLL 34. Hydrophilic/hydrophobic self-converting nanoreactors. **H. Jia**, J. Gohy

9:50 COLL 35. Encoding molecular information to plasmonic gold nanostars for anti-counterfeiting. **Y. Huo**, S. Curry, C. Jiang

10:10 COLL 36. Constructing transferrable electronics on functionalized graphene. **K.E. Whitener**, W. Lee, J.T. Robinson, P. Sheehan

10:30 COLL 37. Impact of solvent quality on graphene transfer process: Toward optimizing graphene transfer onto transparent polymer films. **A.J. Carr**, J. Andrade, S. Bhatia, M. Eisaman

10:50 COLL 38. Highly stable boron nitride nanotube (BNNT) dispersions and pastes for thin film coatings and fibers. **H. Lim**, B.J. Kim, S. Jang

11:10 COLL 39. Paper-derived SiC sheet with high-density stacking faults for high-performance electromagnetic wave absorption. **Z. Wang**

11:30 COLL 40. Gate-enhanced photocurrent of (6,5) single-walled carbon nanotube based field effect transistor. **K. Park**, S. Lee, F. Toshimitsu, J. Lee, S. Park, T. Fujigaya, J. Jang

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Surface Chemistry

Growth, Reactivity & Catalysis

S. L. Tait, *Organizer*
N. Baig, A. V. Teplyakov, *Presiding*

8:30 COLL 41. Surface chemistry of metal deposition and atomic layer etching. **A.V. Teplyakov**

8:50 COLL 42. Epitaxial growth and characterization of Ru (0001) supported hexagonal MoN thin films. **A. Khaniya**, M. Sajid, W. Kaden

9:10 COLL 43. Electrochemical control of the thermal stability of atomically thin Ag films on Au(111). **J. Phillips**, L.K. Harville, H. Morgan, L.E. Jackson, G. LeBlanc, E.V. Iski

9:30 COLL 44. Electrochemically generated superhydrophobic meshes for efficient separation of oil from water. **N. Baig**, T. A. Saleh

9:50 COLL 45. Computational modeling of graphene oxidation. **J. Graña-Otero**, S. Schmitt, A. Kumar

10:10 COLL 46. Dynamic adsorption of airborne contaminants on graphite. **M. Salim**, M. Montgomery, H. Liu

10:30 COLL 47. Local changes to the structure and chemistry of thick MoS2 flakes due to heating. U. Ukegbu, W. Spychalski, M. Pisarek, **R. Szoszkiewicz**

10:50 Intermission.

11:00 COLL 48. Copper-supported single layer MoS_2 for higher alcohol synthesis from syngas: A DFT + kMC study. T.B. Rawal, **D. Le**, T.S. Rahman

11:20 COLL 49. Theoretical study on the conversion mechanism of methane on surface single atom catalysts. **Y. Liu**

11:40 COLL 50. Key details of nerve-agent decomposition on single site Zr-based polyoxometalates revealed by a correlated multimodal approach. **Y. Tian**, A. Plonka, A. Ebrahim, R. Palomino, S.D. Senanayake, A. Balboa, W.O. Gordon, D. Troya, J. Musaev, J.R. Morris, M.B. Mitchell, D. Collins-Wildman, C.L. Hill, A. Frenkel

12:00 COLL 51. Investing MOFs as a potential filtration media for the adsorption and decontamination of chemical warfare agents using *operando* synchrotron techniques. **A. Ebrahim**, A. Plonka, Y. Tian, A. Frenkel

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

O. Chen, T. Li, *Organizers*
F. Bai, H. Fan, *Organizers, Presiding*

8:30 COLL 52. Synthesis and assembly of dendrimer-nanocrystal hybrid superstructures. **C.B. Murray**, K.C. Elbert, D. Jishkariani, N. Gogotsi, J. Park, H. Zhang, M.M. Taheri, J.B. Baxter

9:00 COLL 53. Mechanism of nanocrystal self-assembly at an interface, followed by oriented attachment. **D. Vanmaekelbergh**

9:30 COLL 54. N- and P-doped colloidal nanocrystal and nanowire assemblies. **C.R. Kagan**

10:00 Intermission.

10:10 COLL 55. Synthesis and plasmonic properties of colloidal metal oxide nanocubes. **D.J. Milliron**

10:40 COLL 56. *In situ* observation of nanocrystal chemistry. **H. Weller**

11:10 COLL 57. Synthesis and properties of imperfect nanomaterials. **E. Shevchenko**

11:40 COLL 58. Stoichiometric preparations of iron oleate to improve the reproducibility of iron oxide nanoparticle syntheses. **D. Huber**, S. Ivanov, E.C. Vreeland, J.D. Watt

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 COLL 59. Molecular simulations of separations of enantiomer using chiral stationary phases. **X. Wang**, C. Jameson, S. Murad

8:50 COLL 60. Dynamics of phospholipid membranes beyond thermal undulations. **G.J. Schneider**, S. Gupta, J.U. De Mel, R. Perera

9:15 COLL 61. Peptoid structure impacts adsorption of water-soluble peptoids to lipid bilayers. **G.Y. Stokes**, A.A. Fuller, M.R. Landry, J. Rangel, V. Dao, M.A. MacKenzie, A. Calkins, F.L. Gutierrez

9:40 COLL 62. Lipid motion reflects additive-induced effects on the dynamic and phase state of phospholipid membranes. **E. Mamontov**, V. Sharma

10:05 COLL 63. Vascular smooth muscle cells: Key players in arterial aging. **A. Trache**, H. Sreenivasappa, S. Padgham, S. Shin, J. Trzeciakowski, C. Woodman

10:30 COLL 64. Liposome delivery and release driven by molecular recognition. **M. Best**, J. Lou, X. Zhang, A.J. Carr, A.J. Watson

10:55 COLL 65. Solute partitioning and solvation in lipid membranes: Microscopic origins of bioaccumulation. **R.A. Walker**, C.A. Gobrogge, K. Duncan

11:20 COLL 66. Dynamic interplay between PA and DGPP regulates lipid negative charge and protein-lipid interactions. **E. Kooijman**

11:45 COLL 67. From lipid vesicles to lipid onions: A molecular-dynamics simulation study. **J. Carrillo**, D. Bolmatov, M. Lavrentovich, J. Katsaras, B. Sumpter

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

S. Neretina, D. Qin, *Organizers*
J. Chen, X. Xia, *Organizers, Presiding*

8:30 COLL 68. Porous shells on gold nanorods. **C.J. Murphy**

9:00 COLL 69. Impact of surface chemistry in multimetallic nanoparticle synthesis and performance. **J. Millstone**

9:30 COLL 70. Deconstructing nanoconstructs. **T.W. Odom**

10:00 Intermission.

10:15 COLL 71. Crystal growth and surface chemistry of metal halide perovskite nanomaterials. **S. Jin**, M. Hautzinger

10:45 COLL 72. Surface versus solution chemistry: Manipulating nanoparticle shape and composition through metal-thiolate interactions. **S.E. Skrabalak**

11:15 COLL 73. Leaching of metal nanostructures through oxidative etching and its influence on the catalytic reduction of 4-nitrophenol. **R. Hughes**, R.D. Neal, T.D. Demille, S. Neretina

Engineered Lignocellulosic Materials & Multiphase Systems: Anselme Payen Award Symposium in Honor of Orlando Rojas

Sustainable Nanofibers

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SUNDAY AFTERNOON

Section A

Orange County Convention Center
West Hall B4 - Theater 1

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Ligand Arrangements

H. M. Mattoussi, V. M. Rotello, *Organizers*
C. J. Murphy, J. S. Owen, *Presiding*

2:00 COLL 74. Surface chemistry of colloidal lead halide perovskite nanocrystals. **M. Kovalenko**

2:30 COLL 75. Characterizing the organic coating of quantum dots using NMR spectroscopy. C. Zhang, G. Palui, **H.M. Mattoussi**

2:50 COLL 76. Dynamic ligand exchange and surface charge density modulate the optical properties of CdSe quantum dots in water as a function of pH. **D.E. Westmoreland**, E. Weiss

3:10 COLL 77. Gold nanoparticle-blood serum interaction assay reveals humoral immunity development and immune status of animals from neonates to adults. **Q. Huo**, T. Zheng

3:30 Intermission.

3:50 COLL 78. Affinity of neutral Lewis bases and ion pairs for colloidal nanocrystal surfaces. N.C. Anderson, P. Chen, J. De Roo, **J.S. Owen**

4:20 COLL 79. Optoelectronic impacts of surface chemistry in small noble metal nanoparticles. **J. Millstone**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Immuno & Adhesive Materials

Y. Lapitsky, R. Wylie, *Organizers, Presiding*

2:00 COLL 80. Enhancing humoral immunity to subunit vaccines through engineered immunogen binding to aluminum hydroxide adjuvant. **D.J. Irvine**

2:30 COLL 81. Engineered materials as tools to study immune function. **C. Jewell**

3:00 COLL 82. Nanoparticle immunotherapy: Towards a cancer-curative vaccine. **A. Noureddine**, L. Tang, R. Serda, J. Brinker

3:20 COLL 83. Macrophage-mediated delivery of bioorthogonal nanozymes for targeted cancer therapy. **R. Das**, J. Hardie, M.E. Farkas, V.M. Rotello

3:40 COLL 84. Long term delivery of antibodies from hydrogels for local cancer immunotherapy. **V. Huynh**, R. Wylie

4:00 COLL 85. Electrical "suturing" of polyelectrolyte hydrogels to reseal cut or damaged tissues. **L.K. Borden**, A. Gargava, S.R. Raghavan

4:20 COLL 86. Thermo-reversible bioadhesives based on cohesive failure. **B. Li**, M.E. Thompson

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Quantitative Particle Cell Interaction

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

2:00 COLL 87. State of nanoparticle active tumour cell targeting. **W. Chan**

2:30 COLL 88. Protein nanoparticles as multifunctional drug delivery carriers. **J. Lahann**

3:00 COLL 89. Ultrafast single micron to sub-micron particle detection method based on a half-bowtie coplanar waveguide. **R. Blick**, P. Gwozdz, A. Bhat, A. Guse, B. Diercks, L.C. Hernandez, U. Singh

3:30 COLL 90. How does nano-silver get inside bacteria? Mechanistic studies using AgAu alloy nanoparticles. **C. Rehbock**, C. Streich, J. Jakobi, S. Grade, M. Kühnel, V. Migunov, T. Knura, B. Sures, m. Stiesch, S. Barcikowski

3:50 COLL 91. Nanotoxicology: Exploring nanoparticle-model membrane interactions. C. Bailey-Hytholt., E. Kamaloo, K. Waterman, K. Swana, T.A. Camesano, **R. Nagarajan**

4:20 COLL 92. Multi-hierarchically profiling the biological effects of various metal-based nanoparticles in macrophages under low-exposure doses. **S. Liu**

4:50 COLL 93. Degradation of hybrid nanoparticles. **W.J. Parak**

5:10 COLL 94. Human serum protein coronas greater alter interactions between nanoparticles and a model red blood cell membrane. **G.D. Bothun**, N. Ganji

Section D

Orange County Convention Center
West Hall B4 - Theater 4

Novel Functionalization Methods for Textiles & Fibers

N. Pomerantz, M. Richards, *Organizers, Presiding*

2:00 COLL 95. Ionically crosslinked polymers for antimicrobial textiles. **H.B. Nulwala**, X. Zhou

2:30 COLL 96. Preparation of functional polymers and fibers through controlled radical graft polymerization processes. **G. Sun**

3:00 COLL 97. 3-Mercapto-1,2-propanediol modified robust polyester nonwoven for stabilization of zero-valent iron nanoparticles for multifunctional application. **M. Morshed**, N. Behary, N. Bouazizi, V. Nierstrasz

3:30 COLL 98. Perfluoropolyether-based molecular bottlebrush as water/oil repellent additive for fiber forming thermoplastics. **L. Wei**, P. Brown, I.A. Luzinov

4:00 COLL 99. Environmentally-friendly superhydrophobic and superoleophobic fabrics prepared from water-based suspensions. **R. Cai**, B. Nysten, K. Glinel, A.M. Jonas

4:30 COLL 100. Superhydrophilic, wrinkle-free cotton fabrics via plasma and nanofluid treatment. **L. Lao**, L. Fu, G. Qi, E.P. Giannelis, J. Fan

5:00 COLL 101. Microencapsulation of natural insect repellents for protective coatings on fabrics. **J.D. Ogilvie-Battersby**, R. Sharma, N. Orbey, R. Nagarajan, J. Kumar, R. Mosurkal

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

J. A. Hollingsworth, R. Nagarajan, *Organizers*
C. Shih, *Presiding*

2:00 COLL 102. Interfacial self-assembly of hierarchically structured nanoparticles with photocatalytic activity. **H. Fan**

2:30 COLL 103. Photophysics and electronic structure of metal-organic frameworks. **N.B. Shustova**

3:00 COLL 104. Structural and mechanical properties of self-supporting covalent organic framework membranes obtained via two different preparation routes. N. Turangan, Y. Xu, H. Spratt, L. Rintoul, S. Bottle, **J. MacLeod**

3:20 COLL 105. Rigid rod vs semiflexible chain construction through connection of computationally designed coiled coil peptides using Thiol-Michael *click* reaction. **N. Sinha**, D. Wu, R. Guo, C.J. Kloxin, J.G. Saven, D.J. Pochan

3:40 COLL 106. Locking-in 1-dimensional π-conjugated superstructures to regulate the formation of well-defined nanoscale objects. A. Ashcraft, c. Liu, K. Liu, A. Mukhopadhyay, T. Phan, D. Husainy, **O. Jean-Hubert**

4:00 COLL 107. Controllable, wide-ranging n- and p-doping of monolayer transition-metal disulfides and diselenides. **S. Zhang**, H.M. Hill, A.R. Hight Walker, S. Barlow, S.R. Marder, S.J. Pookpanratana, C.A. Hacker

4:20 COLL 108. Continuous and ultrafast production of exfoliated 2D nanomaterials using compressible flows. M. Islam, R. Sheikh, M. Islam, D. Messer, **R. Rizvi**

4:40 COLL 109. Fluid-like reconfigurable graphene matrix with superlubricity. **I. Jeon**, T.M. Swager

5:00 COLL 110. Dispersion, characterization, and diffusion of boron-nitride nanotubes in water. A.D. Smith McWilliams, Z. Tang, C. de los Reyes, S. Ergulen, M. Pasquali, **A.A. Marti**

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Supramolecular Assemblies at Surfaces: Non-covalent, Covalent & Coordination Bonding

Cooperative Self-Assembly

F. Rosei, S. L. Tait, *Organizers*
U. Mazur, M. Stoehr, *Presiding*

2:00 Introductory Remarks.

2:10 COLL 111. Temperature-induced transformation of amphiphilic thermo-sensitive hyperbranched poly(ionic liquid)s. **H. Lee**, V. Korolovych, A. Erwin, O. Stryutsky, V. Shevchenko, V.V. Tsukruk

2:30 COLL 112. Counting charges on surface-bound peptides. **F. Geiger**

2:50 COLL 113. Parent Zn and Ni metalloporphyrins form bilayers at the air/water interface. M. Jovanovic, V. Schlutz, J. Bozzone, W. Bu, T.F. Magnera, P.I. Dron, **J. Michl**

3:20 Intermission.

3:40 COLL 114. On-surface assembly and reactivity of oligo/polythiophenes. **D.F. Perepichka**

4:10 COLL 115. Standing, lying, and sitting: Unique properties of diyne phospholipid striped phases in templating inorganic and organic nanomaterials. **S.A. Claridge**

4:40 COLL 116. Leveraging a step-wise, sequence-specific synthesis of shape-persistent macrocycles to control hierarchical self-assembly on surfaces. **J. Dobscha**, A.H. Flood

5:00 COLL 117. BioNanoarchitectonics and the dynamics of *alive* functional surfaces. **M. Lingenfelder**

5:30 COLL 118. Puzzling electrical conduction in ionic surface channels fabricated by interfacial electron beam chemical patterning of highly ordered *n*-alkylsilane monolayers on silicon - a synthetic single-layer material. R. Maoz, B. Gogoi, **J. Sagiv**

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, O. Chen, *Organizers*
H. Fan, T. Li, *Organizers, Presiding*

2:00 COLL 119. From colloidal synthesis to integration: Hybrid materials for infrared nanophotonics. **J.A. Hollingsworth**

2:30 COLL 120. Colloidal CdSe 0-dimension nanocrystals and their self-assembled 2-dimension structures. **K. Yu**

3:00 COLL 121. Colloidal superparticles from crystallization of artificial atoms. **Y. Cao**

3:30 COLL 122. Looking at lead salt nanocrystals one by one at low temperature and under high magnetic field. **H. Htoon**

4:00 Intermission.

4:10 COLL 123. Orientational order in self-assembled nanocrystal superlattices. **M. Gruenwald**, Z. Fan

4:40 COLL 124. Aptamer-based rapid whole cell detection and quantification of pathogens. **L. Stanciu**

5:10 COLL 125. Safe-by-design hybrid nanoparticles of antimicrobial silver, aminocellulose, and quorum quenching acylase eradicate bacteria and their biofilms. **A. Ivanova**, K. Ivanova, T.J. Heinze, T. Tzanov

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

2:00 COLL 126. Understanding the dynamics of phospholipid membranes using field cycling NMR. **J.U. De Mel**, M. Rosenberg, S. Gupta, M. Hofmann, M.F. Roberts, G. Schneider

2:20 COLL 127. Light triggered, cell-specific liposome fusion and drug delivery *in vivo*. **A. Kros**

2:45 COLL 128. Functional biomembranes entrapped within mesoporous silica and titania gels. W. Zeno, K. Johnson, S. Gakhar, C. Tan, S. Risbud, **M.L. Longo**

3:10 COLL 129. Functionalized lipid carriers for nucleic-acid and drug therapeutics. **C.R. Safinya**, V.M. Steffes, E.A. Wonder, K.K. Ewert

3:35 COLL 130. Stressful process of patterning fluid-solid membrane domains. **M.M. Santore**

4:00 COLL 131. Lateral organization in live cells and model biomembranes. **J. Nickels**

4:25 COLL 132. Phase-forming mechanism in multicomponent lipid mixtures. **M. Zhernenkov**

4:50 COLL 133. Undulated films of conformationally asymmetric binary lipids and polymer blends. **R. Kumar**

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

J. Chen, D. Qin, X. Xia, *Organizers*
S. Neretina, *Organizer, Presiding*

2:00 COLL 134. High-index facet particle shape regulation by dealloying. **C.A. Mirkin**

3:00 COLL 135. Controlling the surface of dilute bimetallic nanoparticles via halide-mediated metal ion reduction. **M.L. Personick**

3:30 Intermission.

3:45 COLL 136. Engineering of colloidal nanocrystals for multifunctional coatings. **H. Fan**

4:15 COLL 137. Chemical potential of metal atoms in supported and unsupported nanoparticles: Dependence upon particle size and support. **C.T. Campbell**

4:45 COLL 138. Spectral-selective plasmonic polymer nanocomposites. **G. Liu**, A.U. Khan, Y. Guo, X. Chen

Engineered Lignocellulosic Materials & Multiphase Systems: Anselme Payen Award Symposium in Honor of Orlando Rojas

Cellulose Nanocrystals Enabling Sustainable Materials

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SUNDAY EVENING

Section A

Orange County Convention Center
West Hall C

Fundamental Research in Colloids, Surfaces & Nanomaterials

R. Nagarajan, *Organizer*

6:00 - 8:00

COLL 139. Preparation and characterization of a new erlotinib polymorph. **S.A. Nickel**, R. Quinones

COLL 140. Manipulation of gold nanostructures for imaging applications using a single-beam optical trap. **K. Langford**, K. Meyers, T. Szekerczes, **M. Devadas**

COLL 141. Modification of Inorganic Oxides with Poly(hydridomethyl)siloxanes as an Approach to Mixed Functional Surfaces. **G. Fardella**, **R. Perez**, J.W. Krumpfer

COLL 142. Solution-based green amplified spontaneous emission from colloidal perovskite nanocrystals exhibiting high stability. **J. Tan**, Y. Wang, Y. Chan

COLL 143. Graphene oxide-metal hybrid systems for sensing and catalysis. **H. Kelani**, **M. Devadas**

COLL 144. Synthesis and characterization of a conductive biomimetic hydrogel nanocomposite for responsive wound management technologies. **A.N. Linhart**, W. Chura, J.J. Keleher

COLL 145. pH-Responsive nanoparticle embedded catalysts for imaging of biofilm-associated infections. **A. Gupta**, R. Das, V.M. Rotello

COLL 146. Sum frequency generation imaging microscopy of self-assembled monolayers on metal surfaces: Factor analysis of multicomponent mix monolayers. **A. Pikalov**, D.T. Ngo, H. Lee, T. Lee, S. Baldelli

COLL 147. Preparation of sol-gel GeO_2 and GeO_2-SiO_2 nanoparticles for use in 3D printed optics. **A.C. Vahle**, J.F. Destino

COLL 148. Biomimetic, peptide-directed synthesis of size-controlled iron oxide nanoparticles. **A. Eyler**, L. Leon

COLL 149. Synthesis, modification, and integrity of zinc oxide nanoparticles for RNA delivery. **A. Freese**, C. Hernandez, A. Wanekaya

COLL 150. Development of pH-responsive microgels for nanoparticle-based detection methodologies. **A. Silva**, **J. Lo**, S.R. Emory, D.A. Rider

COLL 151. Tailoring the material properties of surface-anchored metal-organic frameworks. **A.J. VanZanten**, A.J. Osterbaan, M.J. Maraugha, A.E. Trojniak, M.E. Anderson

COLL 152. Silver selenide nanoparticles as a gateway to diverse quantum dot compositions. **A. Fall**, P.G. Van Patten

COLL 153. High-precision measurements of the surface tension and viscosity of high-viscosity liquids using surface light scattering spectroscopy and pendant drop tensiometry. **A.R. Titus**, N.K. Thapa, E. Mann, E. Kooijman

COLL 154. Modification of silica surface by Suzuki coupling. **A.A. Kuvayskaya**, A. Vasiliev

COLL 155. Self-assembly of micron-sized polystyrene colloids via Langmuir-Blodgett technique for highly reproducible fabrication of large-area gold microcavity arrays. **A. Schaum**, A. Baride, P. May

COLL 156. Synthesis of FeCo nanoparticles for magnetic hyperthermia. **A. Sergides**, A. LaGrow, P. Lecante, C. Amiens, N. Thanh

COLL 157. Chemically modified titanium boride nanosheets: High yield synthesis and macrostructure assembly. **A.L. James**, M. Lenka, N. Pandey, K. Jasuja

COLL 158. $NaYF_4$: Yb, Er upconversion nanoparticles (UCNPs) with an active $NaYF_4$: Yb, Nd shell for dual-wavelength excitation. **A. Chov**, P. May, A. Baride

COLL 159. Investigating the physical and electrical properties of copper-paddlewheel surface-anchored metal-organic frameworks. **A.E. Trojniak**, **M.J. Maraugha**, A.J. VanZanten, A.J. Osterbaan, M.E. Anderson

COLL 160. Antibacterial coating on aluminum alloy: SERS detection. **B. Baruah**

COLL 161. Switchable single-walled carbon nanotube–polymer composites for CO_2 sensing. **B. Yoon**, S. Choi, T.M. Swager, G.F. Walsh

COLL 162. Fabrication and application of aluminum nanocrescents for surface enhanced infrared absorption spectroscopy. **C. Coplan**, M.M. Swartz, J.S. Shumaker-Parry

COLL 163. Identifying critical parameters of silica coating of silver nanoparticles using ruggedness test. **C. Jabs**, M.M. Roca

COLL 164. Novel statistical analysis of Langmuir monolayers. L.W. Stephenson, **C. Van Cleave**, B.J. Peters, D.C. Crick, D.C. Crans, J.L. Sharp

COLL 165. Manipulating plasmon resonances in In_2O_3 by bandgap tuning and dual-doping. **C.R. Conti**, D.A. Hardy, G.F. Strouse

COLL 166. Multi-functional coatings formed from the electrostatic self-assembly of glycerol-based carbon nanoparticles and *Moringa oleifera* Cationic Protein (MOCP). **C.B. Perry**, F. Webster

COLL 167. Carbon-dots-based biosensors for the selective detection of biomarkers. **C. Choi**, S. Jeon, T. Kang, L. SIN, J. Kim

COLL 168. Study the energy transfer in organic-inorganic two-dimensional hybrid materials. **C. Liao**, J. Phan, M. Herrera, M.A. Mahmoud

COLL 169. Study of the influence of antifoaming additives on the crude oil/air interface by rheology. **C.E. Mansur**, M. Mendes, L. Palermo

COLL 170. Electrochemical scanning tunneling microscopy studies on the adsorption and assembly of benzenecarboxylic acids at electrode/electrolyte interfaces. **C. Leasor**

COLL 171. Programmable self-assembly of functionalized tricarbazolo triazolophane macrocycles at interfaces. **C. Trainor**, H.D. Castillo, J. Dobscha, A.H. Flood, S.L. Tait

COLL 172. Synthesis mechanism of mesoporous titanium dioxide from industrial titanyl sulfate solution. **C. Tian**

COLL 173. Analyzing molecular structure of liquid crystals to develop wavelength independent films to mitigate laser attacks on aircraft. **D. Maurer**, P. Nevarez, J. Hofmann, J.J. Keleher

COLL 174. Probing the influence of surface dipoles on the structure of contacting liquids with sum frequency generation spectroscopy. **D. Rodriguez**, M.D. Marquez, O. Zenasni, T. Lee, S. Baldelli

COLL 175. Silver nanowire/graphene oxide conducting films on antireflective/superhydrophilic substrates. **D.W. Fox**, A. Schropp

COLL 176. Synthesis and nanopatterning of core-shell nanoparticles encapsulated with porphyrins. **D. Hebert**, N. Kuruppu Arachchige, J.C. Garno

COLL 177. Selective electrodeposition of polyaniline on transparent indium tin oxide electrodes using magnetic nanoparticles and magnet arrays. **D. Wirth**, G. LeBlanc, K. Burch, M.J. Petty

COLL 178. Preserving silver nanoparticle color in solutions and films using silica coating. **D. Donelson**, M.M. Roca

COLL 179. Novel patterning method of silver nanowire-based transparent electrode by selective hydrophilic treatment of substrate. **D. Ko**, S. Chu, Y. Ma, G. Sim, J. Kim

COLL 180. Dewetting conditions and morphologies of poly(vinyl alcohol) thin films fabricated on polydimethylsiloxane substrates. **E. Hazen**, W. Chen

COLL 181. Amphiphilic peptoid polymers for directing the assembly of gold nanoparticles at the oil-water interface. **E.J. Robertson**, H. Paneth, E. Whitney

COLL 182. Examining the effect of functional groups on ligand substitution dynamics. **E.A. Reasoner**, B. Nelson, M. Wilker

COLL 183. Road to custom engineered nanocrystal surface chemistry: Changes without exchanges. **E. Litle**, J. Niezgoda

COLL 184. Mechanical properties of soft samples measured by AFM indentation: Effects of probe shape models. **F. Bodowara**, **B.B. Akhremitchev**

COLL 185. Polyethylene glycol and RGD immobilized binary colloidal crystal nanostructures as tunable substrates for cell culture. **F.S. Diba**, P. Wang, H. Thissen, P. Kingshott

COLL 186. Reduction of CO_2 on early Earth using UV radiation. **F. Ileaasu**, M. Dooling, S.E. Maurer

COLL 187. Fabrication and evaluation of hydrophobic anti-icing coating with thixotropic lubricant gel. **G. IMAI**, T. Yamazaki, H. Nakamura, S. Shiratori

COLL 188. Venturi effect: A novel way to obtain nanodispersions by solvent displacement. **G. Garcia Salazar**, D. Quintanar-Guerrero

COLL 189. Quantifying adsorption of chlorpromazine and clozapine to phospholipid membranes using second-harmonic generation. **G.E. Gadbois**, C.A. Read, G.Y. Stokes

COLL 190. Solution-phase synthesis and thermoelectric characterization of n- and p-type tetrahedrite nanoparticles. **G. Kunkel**, J.P. Rogers, D.P. Weller, D.T. Morelli, M.E. Anderson

COLL 191. Investigating nanoparticle-protein interactions with hybrid lipid-coated gold nanoparticles. **G.W. Marquart**, F. Zhou, M.R. Mackiewicz

COLL 192. Investigating adsorption dynamics of serum proteins onto gold nanoparticles. **G. Ruiz**, N. Ryan, J.D. Driskell

COLL 193. Sonochemical functionalization of boron nitride nanomaterials. **H. Harrison**, A. Kelkar, J. Alston

COLL 194. Hydrogel-stabilized radioluminescent colloidal crystalline arrays: Fine-tuning color characteristics via Förster Resonance Energy Transfer (FRET) pairing. **H.W. Jones**, M. Burdette, I. Bandera, S.H. Foulger

COLL 195. Design of cholera toxin B-conjugated gold nanoparticles to target retinal ganglion cells in the eye. **H. Sawab**, M.R. Mackiewicz

COLL 196. Magnetic microdroplets as a method to extract antibodies from their growth media. **H.H. Al-Terke**

COLL 197. Teasing apart how specific features of silver nanoparticles contribute to toxicity. **H. Wu**, A. Engstrom, B. Harper, S. Harper, M.R. Mackiewicz

COLL 198. Colloidal synthesis of hexagonal $FeIn_2S_4$ and its layer-dependent band structures. **H. Kim**, h. LEE

COLL 199. UiO-66-NH_2 on functionalized graphene oxide (GO). **H. Jung**, S. Jang, Y. Jin, H. Jung

COLL 200. Surface growth of UiO-66-NH_2 on cotton fabric for toxic chemical degradation. **H. Jung**, M. Kim, S. Ryu, M. Park

COLL 201. Investigation of the effects on stability of silver nanoparticles. **I.I. Niyonshuti**, M. Alqahtany, Y. Wang, J. Chen

COLL 202. Calcium-triggered release of contents from liposomes for drug delivery applications. **J. Lou**, A.J. Carr, A.J. Watson, S.I. Mattern-Schain, M. Best

COLL 203. Dopamine surface adhesion via spin casting. **J. Byun**, Y. Zhou, M. Le, W. Chen

COLL 204. Thermoelectric characterization and thermostability of doped-tetrahedrite nanoparticles synthesized by modifed polyol process. **J.P. Rogers**, **E. Garcia-Ponte**, G. Kunkel, D.P. Weller, D.T. Morelli, M.E. Anderson

COLL 205. Tyrosine-assisted fluorescent gold nanoclusters for sensing Fe^{3+} and Cu^{2+}. **J. Youn**, P. Kim, P. Kang, Z. Qin, J. Lee

COLL 206. Synergistic oxygen generation of manganese ferrite and ceria nanoparticles potentiates M2 polarization of macrophages for rheumatoid arthritis treatment. **J. Kim**

COLL 207. Monitoring reactive oxygen species production at the single DNA level. **J.R. Pyle**, J. Chen

COLL 208. Validating Raman spectroscopy for the detection of surface molecules on silver nanoparticles. **J. Danischewski**, M.M. Roca

COLL 209. Gold nanoparticle colorimetric detection of estrogen and estrogen mimics. **J.M. Montgomery**, A. Stadler

COLL 210. Preparation of a glycerol-based carbon / magnetic iron nanocomposite for the removal of contaminants in aqueous systems. **J. Daniels**, F. Webster

COLL 211. Interaction of molecular oxygen with surface defects on single-particle organolead halide perovskites. **J.R. Vicente**

COLL 212. Characterization of yellow-colored colloids in the Manasquan Watershed, NJ. **J. Ha**

COLL 213. Metal-assisted and microwave-accelerated germination. J. Guy, M. Stevenson, A. Souffrant, A. Bigio, E. Bonyi, **K. Aslan**

COLL 214. Metal-assisted and microwave-accelerated decrystallization of pseudo-tophaceous aggregates in human joint models. **K. Aslan**, **Z. Boone-kukoyi**, K. Moody, C. Nwawulu, R. Auriori, H. Ajifa, G. McLemore

COLL 215. Magnetism and luminescence property of Mn^{2+}-doped and Cu^{+} doped $(CdSe)_{13}$ clusters. **K. Tsai**, **Y. Liu**

COLL 216. Uncovering key nanoparticle/chemistry adsorption mechanisms relevant to shallow trench isolation (STI) and copper (Cu) chemical mechanical planarization (CMP) performance. **K.M. Wortman-Otto**, **A.M. Mikos**, C.F. Graverson, J.J. Keleher

COLL 217. Multi-point alignment of 6,5 carbon nanotubes on DNA origami substrates. **K. Pitton**, D. Neff, **M.L. Norton**

COLL 218. Photo-degradation of organic contaminants using a novel nano-carbon / TiO_2 layer-by-layer composite. **K.M. Mankowski**, F. Webster

COLL 219. Predicting size dependence of CdSe quantum dot net charge using modified charge equilibration methods. N. Weeks, **K.C. Tvrdy**

COLL 220. Metal-assisted and microwave-accelerated treatment and prevention of bacterial infections. **K.E. Walker**, E. Bonyi, H. Ajifa, C. Nwawulu, R. Auriori, Z. Boone-Kukoyi, **K. Aslan**

COLL 221. Semiconducting Langmuir-Blodgett films of copper paddle-wheel frameworks. **K. Ishihara**, F. Tian

COLL 222. Effects of stabilizing ligands on nanoparticle sintering during calcination in supported nanoparticle catalysts. **K.N. Bryant**, S.R. Saunders

COLL 223. Time-resolved temperature measurements of gold nanorods on surfaces in different media. **K. Shrestha**, L. Khosravi Khorashad, H.H. Richardson

COLL 224. Patterned perovskite thin film and single microcrystal arrays on a chemically patterned flat substrate. **K. Sy Piecco**, J. Chen

COLL 225. 2D nanosheets with binding multivalency for the optical detection of pathogenic bacteria. **L. SIN**, T. Kang, I. Hwang, S. Jeon, C. Choi, J. Kim

COLL 226. Metal-ligand self-assembly on powdered supports: A novel strategy towards heterogeneous single-site catalysts. **L. Chen**, I.S. Ali, X. Zhou, G.E. Sterbinsky, S.L. Tait

COLL 227. Assembling gold nanorods using secondary structure transitions in electrostatically adsorbed poly-l-lysine. **L.B. Thompson**, C.F. Benstead, S.E. Kotchey, F.E. McFeaters

COLL 228. Emulsions stabilized by chemically heterogeneous nanoparticles. **L.D. Capre**, C. Acevedo

COLL 229. Anion exchange and extinction coefficient determination of cesium lead halide nanocubes. **L. Holtzman**, R. Alam

COLL 230. CTAB-controlled silica coating on nanorods and its impact on surface plasmon resonance. **M. Wang**, **A. Hoff**, Y. Bao

COLL 231. Towards tunable nanostructures using electroactive amphiphiles. **M. Alotaibi**

COLL 232. Surface alignment transitions in liquid crystals induced by exposure to formaldehyde gas. M. Thomas, **M. Bedolla-Pantoja**

COLL 233. Exploiting directed assembly to obtain precise coupling between colloidal silica whispering gallery mode resonators. **M.J. Smith**, S. Yu, V.V. Tsukruk

COLL 234. Partial molar volumes and volume of mixing of salts and osmolytes. **M.M. Pozhilenko**, W.H. Vakay, Y. Zhang

COLL 235. Size control on zeolitic imidazolate framework-8 particles for gas sensing. **M. Weber**, T. Baker, C. Kwon, F. Tian

COLL 236. Shiga and cholera toxins induce roll-up of membranes. **M. Berg Klenow**, J. Camillus Jeppesen, A.C. Simonsen

COLL 237. Self-assembly of surfactants at air-liquid interfaces. **M. Khan**, U.I. Premadasa, K. Kotturi, E. Masson, K.A. Cimatu

COLL 238. End-group functionalized polymer ligands for QD-based luminescent solar concentrators. **M.C. Plummer**, Y. Chen, K. Koch, M. Boxx, D.L. Patrick, D.A. Rider

COLL 239. Improving the functionality of carbon dots via doping and functionalization. **M. Prado**

COLL 240. Deuterium NMR spectroscopy in colloid and surface chemistry. T.R. Molugu, S. Lee, K. Mallikarjunaiah, J. Kinnun, C. Job, H.I. Petrache, **M.F. Brown**

COLL 241. Quasielastic and elastic neutron scattering of membrane proteins. S.M. Perera, U. Chawla, U.R. Shrestha, D. Bhowmik, A.V. Struts, S. Qian, X. Chu, **M.F. Brown**

COLL 242. Flexible surface model for lipid-protein interactions. A.R. Eitel, S.D. Fried, S.M. Perera, N. Weerasinghe, C.E. Norris, A.V. Struts, **M.F. Brown**

COLL 243. CdSe quantum shells growth on CdS core nanocrystals. **M. Galindo**

COLL 244. Designing glycocalyx-mimetic interfaces for blood-contacting biomaterials: New insights from single-molecule microscopy. **M. Hedayati**, N. Rapp, D. Krapf, M. Kipper

COLL 245. Synthesis and characterization of Gd:InP/ZnS quantum dots for an MRI-active Parkinson's disease probe. **M. Duszynski**, M. Ellis, K. Fichter

COLL 246. Adsorption of water-soluble peptoids to synthetic phospholipid membranes monitored by Second Harmonic Generation (SHG). **M.A. MacKenzie**, J. Rangel, M.R. Landry, V. Dao, G.Y. Stokes

COLL 247. Zigzag-shaped silver nanoplates: Synthesis, growth mechanism, and their application to highly sensitive strain sensors. D. Kim, J. Kim, **M. Kim**

COLL 248. Metal nanocrystal-based sensing platform for the quantification of water in water-ethanol mixtures. D. Kim, **M. Kim**

COLL 249. Exciton dynamics in colloidal covalent organic frameworks. **N. Flanders**, A.M. Evans, M.S. Kirschner, L.X. Chen, W.R. Dichtel

COLL 250. Porphyrin macrocycles linked to surfaces by centrally coordinated Si-O bridges. **N. Kuruppu Arachchige**, P.C. Chambers, J.C. Garno

COLL 251. Tuning the sensing performance of multilayer plasmonic core-satellite assemblies for rapid detection of targets from lysed cells. **N. Le**, J. Chen, C. Peng, G. Ye

COLL 252. Influence of calcite on uranium(VI) sorption onto montmorillonite clay. **N. Hall**, A.C. Shaw, D.N. La, C. Tournassat, R.M. Tinnacher

COLL 253. Synthesis and design of biomimetic conductive nanocomposites to enhance key surface adsorption phenomena in microbial fuel cells. **N.E. Yuede**, A.D. Dunne, H.J. Khan, S.A. Boetscher, M.D. Puckett, J.J. Keleher

COLL 254. Comparing the optical properties of Au_{25} icosohedral and bi-icosohedral clusters. **N. Hondrogiannis**, B. Hutson, **K. Langford**, **M. Devadas**

COLL 255. Self-assembled monolayer functionalization of gold nanostar particles with a custom designed carboxylate-terminated dithiol as a linker for bioconjugation. **P. Ansari**, T. Lee, R.C. Willson

COLL 256. Methane hydrate formation and dissociation: On the effects of different porous materials. **P. Rangsunvigit**

COLL 257. Synthesis of germanium nanoparticles by rapid inductive heating. **P. Sharma**

COLL 258. Effect of *Ficus tikoua* leaves extract as an eco-friendly inhibitor of carbon steel in HCl solution. **Q. Wang**, X. Li

COLL 259. Analyzing the surface Interactions of a myelin sheath Langmuir model membrane system with the addition of quercetin. **R. Book**, **M.L. Jarju**, A. Sostarecz

COLL 260. Heterogeneous catalytic upgrading of long-chain alkenones derived from microalgae. **R. Kowaleski**, R.H. Hagmann, G.W. O'Neil, M.E. Bussell

COLL 261. Transition metal mediated bioorthogonal catalysis with controlled localization and kinetics for nanotheranostics. **R. Das**, R.F. Landis, G.Y. Tonga, P. Puangploy, M. Knapp, V.M. Rotello

COLL 262. Continuous and scalable synthesis of Pt multipods with enhanced electrocatalytic activity toward oxygen reduction reaction. **R. Chen**, Z. Cao, Z. Lyu, M. Xie, Y. Shi, Y. Xia

COLL 263. Study of structure-property relationships of methoxylated sucrose soyate polyol self-assembly. **R.P. Chitemere**, B. Rasulev, D.C. Webster, M.A. Quadir

COLL 264. Design of a supramolecular photocatalytic nanocomposite for the remediation of heterogenous wastewater. **S.J. Baker**, **J.L. Tabert**, F.M. Byrne, R.K. McDonough, J.J. Keleher

COLL 265. Seed-mediated synthesis of bimetallic copper-nickel nanoparticles for catalysis. **S. Powell**, S. Jeong, X. Ye

COLL 266. Core-size conversion of plasmonic gold nanomolecules. **S. Eswaramoorthy**

COLL 267. Growth and characterization of bimetallic metallic-organic framework films. **S. Farzandh**, A. Brandt, E. Dolgopolova, O. Ejegbavwo, D.M. Shakya, N.B. Shustova, D.A. Chen

COLL 268. Tuning the surface ordering of self-assembled ionic surfactants on semiconducting single-walled carbon nanotubes: Concentration, tube diameter, and concenterions. **S. Algoul**, S. Sengupta, T. Bui, L.A. Velarde

COLL 269. Stabilizing enzyme on carbon nanotubes with metal-organic frameworks for enzyme delivery and biocatalysis applications. **S. Neupane**, Y. Pan, Z. Yang

COLL 270. Immobilized antioxidants and their radical scavenging activity. **S. Muráth**, A. Szerlauth, D. Kádár, D. Sebök, I. Szilágyi

COLL 271. Dynamic self-assembly of quasi-1D and 3D structures in rotating fluids. **T. Lee**, K. Gizynski, Y. Sobolev, O. Cybulski, B.A. Grzybowski

COLL 272. Probing the interactions between polymeric filtration media and nanoparticle dispersions relevant to copper (Cu) Chemical Mechanical Planarization (CMP). **T. Zubi** , K.M. Wortman-Otto, C.F. Graverson, C. Saucedo, M.G. Salinas, J.J. Keleher

COLL 273. Self-assembly of functionalized carbon nanoparticles on polyurethane foam for low-cost water purification. **T. Riffle**, F. Webster

COLL 274. Synthesis and antibacterial enhancement of biomimetic hydrogel matrices for wound management applications. **T.J. Beckmann**, D. Danhausen, W. Chura, J.J. Keleher

COLL 275. Investigating adsorption of methylene blue on single-walled carbon nanotubes using vibrational sum-frequency generation. **T.T. Bui**, S. Algoul, L.A. Velarde

COLL 276. Detection of mercury ion using surface functionalized gold nanorods. **t. luan**

COLL 277. Use of dynamic light scattering for accurate sizing of gold nanoparticles with particular application to chemical and biological sensing. **T. Zheng**, Q. Huo

COLL 278. Synthesis of all-inorganic Cd-doped $CsPbCl_3$ perovskite nanocrystals with dual-wavelength emission. **T. Cai**

COLL 279. Broad bandwidth excitation profile acquisition for interfacial rhodamine dyes by doubly resonant vibrational-electronic difference-frequency generation spectroscopy. **T.J. Santiago**, L.A. Velarde

COLL 280. Self-assembly, thermal properties and gelation studies of acridine based cholesteryl carbamate as low molecular mass gelators. **T. Sawyer**, A.V. Mallia

COLL 281. Fluorescence detection of Fe^{3+} using Salecan-derived nitrogen and phosphorus doped carbon dots and cell imaging. **W. Dong**, **G. Zuo**

COLL 282. Stability of spin cast poly(vinyl alcohol) thin films on polydimethylsiloxane. **W. Wang**, W. Chen

COLL 283. Assembly of amphiphilic homopolymers into controlled nanoscale particles. **W. Jang**, S. Swan, P.N. Eyimegwu, J. Kim

COLL 284. Functional dual drug-loaded dendrimer/carbon dot nanohybrids for cancer cell fluorescence imaging and enhanced therapy. D. Li, Y. Fan, M. Shen, **X. Shi**

COLL 285. Investigation of ceria-nickel-containing aerogels for catalytic converter applications. **X.P. Li**, M.K. Carroll, A.M. Anderson, B.A. Bruno

COLL 286. Boronic acid materials: Applications in glycoprotein recognition and enhanced cellular delivery. **X. Zhang**, D. Santana Alves, S. Zhang, S. Baek, F.N. Barrera, M. Best

COLL 287. Metal-ligand coordination for single-site catalysts on oxide surfaces. **X. Zhou**, S.L. Tait

COLL 288. Cr (VI) removal with porous Fe/C microspheres prepared from glycerol via ultrasonic spray pyrolysis. **Y. Cui**, J.D. Atkinson

COLL 289. Seed-mediated growth in shape-controlled synthesis of copper nanocrystals. **Z. Lyu**, Y. Xia

COLL 290. Simulations of grain boundaries between ordered colloidal hard sphere domains: Impurity and gravity confinement. **Z. Guo**, J. Kindt

Section B

Orange County Convention Center
West Hall C

Novel Functionalization Methods for Textiles & Fibers

Posters

N. Pomerantz, M. Richards, *Organizers*

6:00 - 8:00

COLL 291. Antimicrobial surface textile treatments. **C.S. Carfagna**

COLL 292. Novel durable, flame retardant textile treatments for nylon/cotton blends. **S. Beck**, F. Mazzini, A. Mullins, B.E. Koene

Section C

Orange County Convention Center
West Hall C

Supramolecular Assemblies at Surfaces: Non-covalent, Covalent & Coordination Bonding

Posters

F. Rosei, S. L. Tait, *Organizers*

6:00 - 8:00

COLL 293. Molecular self-assembly at surfaces: Dynamics, interactions, and design. **H.D. Castillo**, J.M. Espinosa Duran, S. Kim, J. Dobscha, S. Debnath, R.D. Mortensen, S.R. Schrecke, M. Lee, K. Raghavachari, A.H. Flood, D. Lee, P. Ortoleva, S.L. Tait

MONDAY MORNING

Section A

Orange County Convention Center
West Hall B4 - Theater 1

ACS Award in Surface Chemistry: Symposium in Honor of Hajo Freund

Cosponsored by CATL‡ and PHYS
F. C. Calaza, W. Kaden, R. J. Meyer, A. Savara, *Organizers*
J. A. Boscoboinik, *Organizer, Presiding*
R. Meyer, *Presiding*

8:00 Intermission.

8:30 COLL 294. Interface materials on the nanoscale: Dominant media of chemical change and evolution. **G.A. Somorjai**

9:05 COLL 295. Heats of formation of adsorbed catalytic intermediates on well-defined surfaces by single crystal adsorption calorimetry. **C.T. Campbell**

9:40 COLL 296. Model interfaces constructed from ordered oxide films: From heterogeneous catalysis to electrocatalysis, photoelectrocatalysis, and organic-oxide hybrid materials. **J. Libuda**

10:15 Intermission.

10:35 COLL 297. Vinyl acetate formation pathways and selectivity on model metal and alloy catalyst surfaces. **W.T. Tysoe**

11:10 COLL 298. Polarons on TiO_2 and their affinity for water. **G. Thornton**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Biomimetic & Bioactive Materials

Y. Lapitsky, R. Wylie, *Organizers*, *Presiding*

8:30 COLL 299. Bioinspired materials synthesis in microenvironments formed by liquid-liquid phase separation. **C.D. Keating**

9:00 COLL 300. Nature-inspired elastic capsules, tubes and hairy surfaces. **S.R. Raghavan**

9:30 COLL 301. Thermophoretic manipulation of biomaterials mechanical properties in microfluidics. **A. Kosmidis**, D. Vigolo

9:50 COLL 302. Integration of cells with silicon devices for *in vitro* tissue engineering of functional systems for preclinical drug discovery and toxicology. **J.J. Hickman**, C. Long, C. McAleer, C. Oleaga, J. Rumsey, A. Goswami, X. Guo, M.L. Shuler

10:10 COLL 303. Designing biomimetic interfaces for blood-contacting biomaterials: New insights from single-molecule microscopy. **M. Hedayati**, D. Krapf, M. Kipper

10:30 COLL 304. Studying the response of human macrophage-like cells to surface chemistry with diazonium-modified polystyrene substrates. **E. Buck**, S. Lee, L. Stone, M. Cerruti

10:50 COLL 305. Functional microgels for decoration of biointerfaces. **A. Pich**

11:10 COLL 306. Phase-separated liposomes for enhanced chemotherapeutic delivery. **A. Trementozzi**, Z.I. Imam, M. Mendicino, J. Stachowiak

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Quantitative Particle Cell Interaction

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

8:30 COLL 307. Enhanced delivery of quantum dots and gold nanocrystals to live cells. **H.M. Mattoussi**

9:00 COLL 308. Analytical ultracentrifugation of nanocrystals and fullerenes for biolabelling. **P. Mulvaney**

9:30 COLL 309. Gold nanoparticles for specific binding and internalization in cells. **A. Mews**, M. Mutas, L. Prisner, P. Witthöft, C. Strelow, T. Kipp

10:00 COLL 310. Gold nanoparticle-cell interactions. **A. Kanaras**

10:30 COLL 311. Plasmonic nanoparticle assemblies for real-time reaction monitoring. **X. Ling**

11:00 COLL 312. Surface modification strategies for interfacing metal nanoparticles with biological systems. **I. García**, M. Henriksen, J. Mosquera, J. Langer, L. Liz Marzan

11:30 COLL 313. Nanoparticle-cell interactions: Implications on nanomedicine. **N. Feliu**, W.J. Parak

Section D

Orange County Convention Center
West Hall B4 - Theater 4

ACS Award in Colloid Chemistry: Symposium in Honor of Naomi Halas

Cosponsored by PHYS
C. J. Murphy, *Organizer*
M. Moskovits, *Presiding*

8:30 COLL 314. Novel concepts in plasmonics. **P.J. Nordlander**

9:00 COLL 315. Probing molecule-plasmon dynamics with ultrafast SERS. **R.R. Frontiera**

9:30 COLL 316. Shifting the plasmon resonance of gold nanoparticles with incident light intensities as low as those encountered in ordinary UV-visible spectroscopy. **M. Moskovits**

10:00 Intermission.

10:30 COLL 317. Charge injection properties in plasmonic nanocomposites and thin films. **B.G. DeLacy**, Y. Rao, D.L. Kuhn

11:00 COLL 318. Nanotechnology enables hot gold nanorods to kill cancer cells and to stop alive sick cells from migrating to other places in the body. **M.A. El-Sayed**

11:30 COLL 319. Light years: Combined optical and environmental electron microscopy to visualize photonic processes with atomic-scale resolution. **J. Dionne**

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

Advanced Nanoscale Characterization: In Situ TEM & Beyond

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

8:30 COLL 320. Matter in motion by liquid cell TEM: Phase transitions, diffusion, collisions, and growth mechanisms. **N.C. Gianneschi**

9:00 COLL 321. 3D structure study of colloidal nanocrystals using liquid phase TEM. **J. Park**, B. Kim, J. Heo, S. Kim

9:30 COLL 322. *In situ* look at interfacial controls over nucleation and growth of nanostructured materials. **J.J. De Yoreo**, G. Zhu, M.L. Sushko, B.A. Legg, M.D. Baer, S. Huang, Y. Zhang, J.A. Soltis, C.J. Mundy, Y. Min, J. Chun, G.K. Schenter

10:00 COLL 323. Investigating magnetic nanoparticle interactions with Cryo-TEM. **J.D. Watt**, A. Begay, D. Huber

10:30 COLL 324. Gentle etching of metal from polymeric three-dimensional structures: Making scanning electron microscopy a non-destructive technique. **S.M. Kuebler**, R. Sharma

10:50 COLL 325. Two types of water on free-standing reduced graphene oxide revealed by neutron scattering. **Z. Liu**, J. Huang, L. Zhang, V.G. Sakai, C. Yang, L. Hong

11:10 COLL 326. Interface and dynamic indentation of crosslinked polyester films. **S. Ahuja**

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Supramolecular Assemblies at Surfaces: Non-covalent, Covalent & Coordination Bonding

Self-Assembly in 2D

F. Rosei, S. L. Tait, *Organizers*
L. Chi, M. Lingenfelder, *Presiding*

8:30 COLL 327. Complexity in metal-organic redox assembly at surfaces: Bimetallic sites and redox isomer surface structures. T.W. Morris, D. Wisman, I.J. Huerfano, C. Tempas, M. Wang, N. Din, D. Skomski, D. Le, T.S. Rahman, K.G. Caulton, **S.L. Tait**

9:00 COLL 328. Chemical self-assembly strategies for designing molecular electronic circuits. D. Olson, **W.T. Tysoe**

9:30 COLL 329. Balancing noncovalent interactions in self-assembly of nonplanar aromatic carboxylic acid linkers at the solution/solid interface: Progress toward 2D SURFMOFs synthesis. **U. Mazur**, K. Hipps

10:00 COLL 330. Conformal surface-anchored metal-organic frameworks: Characterization of thin film growth, porosity, and electronic transport. **M.E. Anderson**

10:30 Intermission.

10:50 COLL 331. H-bonded and metal-organic coordination networks on graphene. **M. Stoehr**

11:20 COLL 332. Role and tracking of weak interactions in adsorbed layers on surfaces. **A. Rochefort**

11:50 COLL 333. Organic, 2D transition metal dichalcogenide interface. **A. Wee**

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

O. Chen, T. Li, *Organizers*
F. Bai, H. Fan, *Organizers, Presiding*

8:30 COLL 334. Topology and electronic coupling in the assembly of nanoparticle superlattices. I. Coropceanu, E.M. Janke, M. Boles, X. Lan, **D. Talapin**

9:00 COLL 335. Synthesis of morphology controlled Zn-chalcogenide nanocrystals: A few surprises. **U. Banin**

9:30 COLL 336. Surface chemistry of lead halide perovskites nanocrystals. **L. Manna**

10:00 Intermission.

10:10 COLL 337. Synthesis and assembly of chiral nanoparticles. **N. Kotov**

10:40 COLL 338. Making nanoscale chemistry matter: Synthesis & assembly. **S.W. Cranford**

11:10 COLL 339. Colloidal cesium and formamidinium lead halide perovskite nanocrystals: Genesis, properties and applications. **M. Kovalenko**

11:40 COLL 340. Strong plasmon-exciton coupling in collodially assembled Au quantum-dot structures. Y. Luo, **J. Zhao**

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 COLL 341. Simple class of responsive liposomes that transform into micelles upon heating. **N. Agrawal**, S.R. Raghavan

8:50 COLL 342. Annexins induce membrane curvature near hole edges during plasma membrane repair. T. Boye, J. Nylandsted, **A.C. Simonsen**

9:15 COLL 343. Molecular interactions between cell membranes and surface immobilized peptides. **Z. Chen**

9:40 COLL 344. Lipid self-assembly in bulk and at interfaces: Non-lamellar phases and biomolecular interactions. M. Valldeperas, N. Mahmoudi, S. Teixeira, M. Talaikis, I. Matulaitiene, G. Niaura, J. Barauskas, A. Svendsen, **T. Nylander**

10:05 COLL 345. Mapping membrane receptor dynamics, self-association, and oligomerization: Applications of homo-FRET and super-resolution microscopy. **C. Yip**

10:30 COLL 346. Direct comparison between molecular lateral diffusion constant and lipid membrane viscosity using quasi-elastic neutron scattering techniques. **M. Nagao**, E.G. Kelley, T. YAMADA, A. Faraone, K. Shibata, P. Butler

10:55 COLL 347. Understanding the mechanism of antimicrobial peptides using small-angle x-ray and neutron scattering techniques: The lipid`s point of view. J. Eilsoe Nielsen, V. Bjornestad, **R. Lund**

11:20 COLL 348. Heterogeneous dielectric implicit membrane model for the calculation of MMPBSA binding free energies. **R. Luo**, D. Greene

11:45 COLL 349. Growing supergiant liposomes on nanocellulose paper and regenerated cellulose membranes. **A.B. Subramaniam**, J. Pazzi

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

D. Qin, X. Xia, *Organizers*
J. Chen, S. Neretina, *Organizers, Presiding*

8:30 COLL 350. Self-assembly of nanoparticles into two-dimensional arrays for catalytic applications. **S. Sun**

9:00 COLL 351. Use of ligand-binding to form low-index facet metal nanocrystals for catalysis. **R. Tilley**

9:30 COLL 352. Tailoring surface structures of spongy metallic nanoparticles toward optimization of electrocatalysis. **H. Wang**

10:00 Intermission.

10:15 COLL 353. Surface-driven magnetism of Fe-oxide nanocrystals. **J.A. De Toro**, P.S. Normile, E.H. Sánchez, S. Lee, M. Vasilakaki, M.S. Andersson, K.N. Trohidou, R. Mathieu, J. Nogués

10:45 COLL 354. Carbon nitride compounds for heterogeneous photocatalysis. **P. Ricci**

11:15 COLL 355. Surface-modified magnetic nanoparticles as efficient adsorbents for heavy metal removal from wastewater: Progress and prospects. **M.O. Ojemaye**, O.O. Okoh, **A. Okoh**

Molecular Processes at Mineral-Water Interfaces: Predictions via Linking Theory & Experiments

Sponsored by GEOC, Cosponsored by COLL

Engineered Lignocellulosic Materials & Multiphase Systems: Anselme Payen Award Symposium in Honor of Orlando Rojas

Creating Sustainable Polymers & Composites

Sponsored by CELL, Cosponsored by ANYL and COLL

LGBTQ+ Graduate Student & Postdoctoral Scholar Research Symposium

Sponsored by PROF, Cosponsored by AGFD, ANYL, BIOL, BIOT, CARB, CELL, CHED, CMA, COLL, COMP, ENVR, GEOC, I&EC, MEDI, MPPG, NUCL, ORGN, PHYS, PMSE, POLY, PRES, WCC and YCC

Interdisciplinary Chemistry for New Frontiers in Biology and Medicine

Biomarker Discovery

Sponsored by ANYL, Cosponsored by BIOL, COLL‡, MPPG, PHYS‡ and PMSE‡

MONDAY AFTERNOON

Section A

Orange County Convention Center
West Hall B4 - Theater 1

ACS Award in Surface Chemistry: Symposium in Honor of Hajo Freund

Cosponsored by CATL‡ and PHYS
J. A. Boscoboinik, R. J. Meyer, A. Savara, *Organizers*
F. C. Calaza, W. Kaden, *Organizers, Presiding*

1:30 Intermission.

2:00 COLL 356. Rearrangement of bimetallic alloys: understanding through surface science models. **C.M. Friend**, M. van Spronsen, K. Duanmu, P. Sautet, R. Madix

2:35 COLL 357. Control of charge transfer into large organic molecules on ultrathin MgO(001) films. **M. Sterrer**

3:10 COLL 358. Highly active FeNi bimetallic phosphide catalyst gives unprecedented selectivity to the direct desulfurization pathway. **S.T. Oyama**, H. Zhao, K. Asakura

3:45 Intermission.

4:05 COLL 359. Ionic liquid adsorption and ion exchange processes at single crystal surfaces. **H. Steinrueck**

4:40 COLL 360. Selectivity in hydrogenation catalysis. **F. Zaera**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Cellular Interactions with Colloids

R. Wylie, *Organizer*
Y. Lapitsky, *Organizer, Presiding*
S. C. Owen, *Presiding*

2:00 COLL 361. Engineered nanomaterials for cancer immunotherapy. **J.J. Moon**

2:30 COLL 362. Glycodendron modified HES nanocapsules for targeting of dendritic cells. **M. Frey**, M. Krumb, J. Pereira, V. Mailänder, T. Opatz, K. Landfester

2:50 COLL 363. Local reprogramming of antigen presenting cell function using synthetic depots to promote tolerance. **H. Eppler**, C. Jewell

3:10 COLL 364. Transient membrane pore-forming conjugated polymer nanoparticles. P. Manandhar, F. Chen, J. He, **J. Moon**

3:30 COLL 365. Designing biodegradable lipid nanoparticles for enhanced intracellular delivery and genome editing. **M. Wang**

3:50 COLL 366. Intracellular cytotoxic peptide release triggered by *in situ* hybridization of complementary, DNA-conjugated, multicolor carbon dots. **I. Srivastava**, S.K. Misra, K.A. Boateng, J. Soares, A. Schwartz-Duval, D. Pan

4:10 COLL 367. Lipid corona formation from nanoparticle interactions with bilayers. **F. Geiger**

4:30 COLL 368. Erythrocyte membrane-coated piezoelectric sensor for studying the interactions between nanoparticles and surfaces of red blood cells. **T. Islam**, O. Chesnokova, A. Oleinikov, P. Yi

4:50 COLL 369. Polysaccharide coated nanoparticles for biological detection. **X. Huang**, S. HossainiNasr, C. Qian

5:10 COLL 370. Noncovalent protein coating onto porous nanoparticles to prevent protein corona enhances *in vivo* therapeutic efficacy. **J. Ryu**

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Quantitative Particle Cell Interaction

N. Feliu, L. Liz Marzan, W. J. Parak, *Organizers*
R. A. Alvarez-Puebla, *Presiding*

2:00 COLL 371. Aluminum nanostructures with strong visible-range SERS activity for versatile micropatterning of molecular security labels. **I. Phang**

2:30 COLL 372. Degradation of protein coronas exposed to proteolytic environment of pancreatic tumor cells. C. Rodriguez-Quijada, G. Cramer, C. Yelleswarapu, J. Celli, **K. Hamad-Schifferli**

3:00 COLL 373. Combination of SERS and fluorescence for detection and/or characterization in biological systems. **R.A. Alvarez-Puebla**

3:30 COLL 374. Quantitative super-resolution imaging of self-assembled nanocarriers via spectroscopic single molecule localization microscopy (sSMLM). **J. Davis**, Y. Zhang, S. Yi, K. Song, E. Scott, C. Sun, H. Zhang

3:50 COLL 375. Synthesis of highly brilliant SERS-encoded nanoparticles: Plasmonic core-satellites structures. **N. Pazos-Perez**, R.A. Alvarez-Puebla

4:20 COLL 376. Using single-particle spectroscopy to probe nanoparticle uptake by mammalian cells. **C.M. Hill**, J.W. Hill

4:40 COLL 377. TiO_2 nanoparticles, in the absence of light, oxidize the protein corona leading to an oxidative stress response in cells. **D.T. Jayaram**, S. Runa, M.L. Kemp, C.K. Payne

5:00 COLL 378. Nitroxide-liquid crystal nanoparticle conjugates for the protection of cells against reactive oxygen species. **O.K. Nag**, J. Delehanty, J. Naciri

Section D

Orange County Convention Center
West Hall B4 - Theater 4

ACS Award in Colloid Chemistry: Symposium in Honor of Naomi Halas

Cosponsored by PHYS
C. J. Murphy, *Organizer*
D. Zhao, *Presiding*

2:00 COLL 379. Ligand dynamics and chemistry on plasmonic nanoparticle surfaces: Insights from plasmon-enhanced spectroscopy. **H. Wang**

2:30 COLL 380. Commercialization of gold nanoshells. **S. Oldenburg**

3:00 COLL 381. Rational metamaterial design through colloidal crystal engineering. **C.A. Mirkin**

3:30 COLL 382. Correlating carrier density and emergent plasmonic features in $Cu_{2-x}Se$ nanoparticles. **J. Millstone**

4:00 COLL 383. From the beaker to an engineering platform: Scale-up, functionalization, and assembly of plasmonic nanoparticles. K. Park, Y. Yi, C. Mahoney, J. Streit, **R.A. Vaia**

4:30 COLL 384. Quantification of the optical properties of colloidal nanoparticles in solutions: Challenges and opportunities. **D. Zhang**

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

New Colloidal Nanomaterials: Fundamentals, Synthesis, Integration & Properties

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

2:00 COLL 385. Synthesis and characterization of perovskites for energy applications. **S.S. Wong**

2:30 COLL 386. Perovskite colloidal quantum wells: Self-assembly and physics. **C. Shih**

3:00 COLL 387. Sonochemical synthesis of polymorphic lead halide perovskite microcrystals in polar solvents. **S. Cho**, S. Yun

3:20 COLL 388. Boron cluster building blocks for the development of hybrid materials. **A.M. Spokoyny**

3:40 COLL 389. Novel nanohybrids of chemically active boron based nanosheets with gold nanoparticles and graphene: Assembling mixed dimensional heterostructures in solution. **A.L. James**, S. Khandelwal, A. Dutta, K. Jasuja

4:00 COLL 390. Influence of nanoparticle dimensionality on rates of electron transfer between semiconductor nanoparticles. **A. Brumberg**, B. Diroll, G. Nedelcu, M. Sykes, M. Kovalenko, R. Schaller

4:20 COLL 391. Colloidal semiconductor CdS magic-size clusters: Thermally induced reversible structural isomerization. **K. Yu**

4:40 COLL 392. SnGe alloys: Full compositional range at nanoscale. K. Ramasamy, M. Brumbach, N. Modine, P. Kotula, J.M. Pietryga, **S. Ivanov**

5:00 COLL 393. Self-assembly of CdSe nanoplatelets into twisted threads. **B. Abecassis**, S. Jana, P. Davidson

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Supramolecular Assemblies at Surfaces: Non-covalent, Covalent & Coordination Bonding

On-Surface Synthesis

F. Rosei, S. L. Tait, *Organizers*
E. Barrena, D. F. Perepichka, *Presiding*

2:00 COLL 394. Self-assembly of aryl halides for various degrees of dehalogenation. L. Grossmann, M. Fritton, M. Lischka, **M. Lackinger**

2:30 COLL 395. Two-dimensional porphyrin networks: From nucleobase driven self-assembly to covalent-organic frameworks. **M.O. Blunt**, C. Nowicka-Dylag, Y. Hu, N. Goodeal, A.M. Ganose, A. Slater, R.G. Palgrave, C. Toft, W. Lewis, H. Bronstein, N.R. Champness

3:00 COLL 396. On-surface synthesis: strategies towards the targeted products. T. Wang, **J. Zhu**

3:30 COLL 397. Long-range ordered and atomic-scale control of graphene hybridization by photocycloaddition. **M. Yu**

4:00 Intermission.

4:20 COLL 398. Bottom-up fabrication of atomically precise molecular nanostructures through on-surface reactions. **S. Maier**

4:50 COLL 399. Assemblies and reactions of small carboxylated molecules on metal surfaces: diverse chemical and structural outcomes from simple precursor molecules. **J. MacLeod**

5:20 COLL 400. Selective activation of chemical bonds in on-surface chemistry. **L. Chi**

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

O. Chen, T. Li, *Organizers*
F. Bai, H. Fan, *Organizers, Presiding*

2:00 COLL 401. Synthesis and directed assembly plasmonic nanostructures. **D.S. Ginger**

2:30 COLL 402. Organizing nanorods end to end. **C.J. Murphy**

3:00 COLL 403. *In-situ* scattering techniques to study synthesis and crystallization processes of colloidal nanocrystals. **M. Cargnello**, L. Wu, J. Qin, C. Tassone

3:30 COLL 404. Templated evaporative self-assembly as a powerful tool for creating functional superstructures and patterns. **E. Zubarev**

4:00 Intermission.

4:10 COLL 405. *In situ* high-energy XRD studies on the nucleation, growth, and 3D atomic structure of ultrathin Au nanowires in solution. **V. Petkov**

4:30 COLL 406. Understanding the role of soft ligands on nanoparticle assembly using small angle x-ray and neutron scattering techniques. **B. Lee**, E. Shevchenko

5:00 COLL 407. Nanoisland deposition on colloidal nanoparticle substrates. **J. Millstone**

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

2:00 COLL 408. Protein corona formation on nanoparticles and its effect on interaction with biological membranes. **L. Wang**, N. Malmstadt

2:20 COLL 409. Substrate specificity of P4-ATPases. **D.L. Daleke**, S. Smiriti, M.L. Zimmerman, D. Dudek

2:45 COLL 410. Fatty acid flip-flop in lipid membranes. V. Cheng, D. Kimball, **J.C. Conboy**

3:10 COLL 411. Consequences of oxidation of plasma membrane lipds. **N. Malmstadt**

3:35 COLL 412. Compositional and biophysical asymmetry in mammalian membrane bilayers. **I. Levental**

4:00 COLL 413. Supported membranes as a platform for dynamic phenotyping of primary human cells: Quantifying the effect of intrinsic and extrinsic factors. **M. Tanaka**

4:25 COLL 414. Physical properties of simple sphingolipids in phospholipid bilayers: Wild, tamed, and caged tigers. **F.M. Goni**, A. Alonso

4:50 COLL 415. Correlation of an antimicrobial peptide's potency and its influences on membrane elasticity. W. Chang, S. Chen, **Y. Chen**

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

J. Chen, D. Qin, *Organizers*
S. Neretina, X. Xia, *Organizers, Presiding*

2:00 COLL 416. Quantifying the formation of functional colloidal nanoparticles through the understanding of surface chemistry. **H. Yang**

2:30 COLL 417. Manipulation of surface capping for controlled growth, transformation, and assembly of nanocrystals. **Y. Yin**

3:00 COLL 418. Single-crystal electrochemistry reveals why nanowires grow. M.S. Kim, Z. Chen, K.A. Fichthorn, **B.J. Wiley**

3:30 Intermission.

3:45 COLL 419. Temperature-dependent photoluminescence and stability of perovskite nanocrystal superlattices. Y. Zhang, C. Thomas, M. Abney, **B.A. Korgel**

4:15 COLL 420. Autocatalytic surface reduction and its role in the synthesis of metal nanocrystals. **Y. Xia**

4:45 COLL 421. Importance of surface chemistry in synthesis, transformations, and sensing applications of plasmonic metal nanoparticles. **V.V. Kitaev**, N. Cathcart, N. Murshid

Engineered Lignocellulosic Materials & Multiphase Systems: Anselme Payen Award Symposium in Honor of Orlando Rojas

Creating 21st Century Sustainable Materials from Lignin

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LGBTQ+ Graduate Student & Postdoctoral Scholar Research Symposium

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Interdisciplinary Chemistry for New Frontiers in Biology and Medicine

DNA/RNA & Disease Diagnosis

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MONDAY EVENING

Section A

Orange County Convention Center
West Hall C

Sci-Mix

R. Nagarajan, *Organizer*

8:00 - 10:00

139, **144-152**, **154-157**, **160**, **165-166**, **168**, **170-172**, **174-175**, **177**, **181**, **183-186**, **193**, **196-197**, **201**, **205**, **214-217**, **219-223**, **226-228**, **230**, **232-237**, **242**, **245-246**, **249-252**, **255**, **257-258**, **261-263**, **268-270**, **272**, **274-280**, **287-290**. See Previous Listings.

TUESDAY MORNING

Section A

Orange County Convention Center
West Hall B4 - Theater 1

ACS Award in Surface Chemistry: Symposium in Honor of Hajo Freund

Cosponsored by CATL‡ and PHYS
W. Kaden, R. J. Meyer, A. Savara, *Organizers*
J. A. Boscoboinik, F. C. Calaza, *Organizers, Presiding*

8:00 Intermission.

8:30 COLL 422. Surface action spectroscopy: A new tool for the spectroscopy of surface vibrations. **H. Kuhlenbeck**, Z. Wu, A. Plucienik, Y. Liu, H. Freund

9:05 COLL 423. Extracting chemistry from the analysis of core-level spectra. **P.S. Bagus**, C.J. Nelin

9:40 COLL 424. Metal oxide – water interface: Quantum chemical studies compared to experiment. **J. Sauer**

10:15 Intermission.

10:35 COLL 425. Composition and chemistry of liquid/vapor interfaces studied by liquid-jet x-ray photoelectron spectroscopy and molecular dynamics simulations. **J.C. Hemminger**

11:10 COLL 426. Chemical dynamics in heterogeneous catalysis. **R. Schloegl**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Biomolecular Interactions

Y. Lapitsky, R. Wylie, *Organizers, Presiding*

8:30 COLL 427. Structuring of organic solvents at biointerfaces and its ramifications for antimalarial inhibition of hematin crystallization. **J.D. Rimer**, J.C. Palmer, P.G. Vekilov

9:00 COLL 428. Real-time chemical imaging of carbon-dot-templated tubulin-polymerization. **I. Srivastava**, P. Mukherjee, R. Bhargava, D. Pan

9:20 COLL 429. Catechin-mediated restructuring of a bacterial toxin inhibits activity. **E. Chang**, J. Huang, Z. Lin, A.C. Brown

9:40 COLL 430. Molecular dynamics simulation study of the effect of lignin dimers on the gel to liquid-crystalline transition temperature in DPPC bilayers. **X. Tong**, M. Moradipour, B. Novak, B. Knutson, S. Rankin, B. Lynn, D. Moldovan

10:00 COLL 431. Multiscaling method for systematic investigation of nanostructure-biointerface interactions in crowded biological media. **S.A. Hassan**

10:20 COLL 432. Functionalization of cotton fabric substrate for enhanced sequestration of Doxorubicin (DOX) chemotherapeutic agent. **O. Wadsworth**, M. Bardot, L. Dehart, S. Kala, M.D. Schulz

10:40 COLL 433. Blood filtration: Materials to modulate systemic immune responses. **R. Wylie**

11:00 COLL 434. Homogeneous immunoassay for the detection of EGFR-HER2 heterodimerization on cell surfaces. **S.C. Owen**

11:20 COLL 435. Structure and orientation of a small protein on a gold nanoparticle surface. **Y. Perera**, A. Huges, N. Fitzkee

11:40 COLL 436. Reducing protein adsorption on biomimetic superhydrophobic surfaces: Hybrid hydrophilic-hydrophobic arrays prepared by 3D printing. **B. Mondal**, Q. Xu, A.M. Lyons

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Quantitative Particle Cell Interaction

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

8:30 COLL 437. Gold nanoparticle imaging in complex mammalian cell cultures. **M. Henriksen**, D. Jiménez de Aberasturi, J. Langer, I. Garcia, L. Liz Marzan

9:00 COLL 438. Live-cell encoding by single-nanoparticle FRET multiplexing. **C. CHEN**, N. Hildebrandt

9:20 COLL 439. Unraveling the origin of plasmon-coupled circular dichroism from gold nanorod-protein complexes at single-particle level. **Q. Zhang**, T. Hernandez, K.W. Smith, S.H. Jebeli, L. Warning, R. Baiyasi, L.A. McCarthy, H. Guo, C.F. Landes, S. Link

9:40 COLL 440. Engineering nanomaterials for imaging and therapy of bacteria and biofilm-associated infections. **A. Gupta**, R.F. Landis, R. Das, V.M. Rotello

10:00 COLL 441. Magnetic iron oxide nanoparticles grafted with a thermosensitive polypeptide brush: Uptake by tumor cells and cytotoxicity upon magnetic hyperthermia. G. Hemery, C. Genevois, S. Lacomme, S. MacEwan, F. Couillaud, E. Gontier, A. Chilkoti, S. Lecommandoux, **E.B. Garanger**, O. Sandre

10:20 COLL 442. How the toxicity of nanomaterials towards different species could be simultaneously evaluated: A multi-nano-read-across approach. **B. Rasulev**

10:40 COLL 443. Real-time monitoring of “soft” and “hard” protein corona in carbon dots via a microfluidic setup. **I. Srivastava**, M.S. Khan, K. Dighe, T. Ghonge, L.M. Grove, D. Pan

11:00 COLL 444. Deciphering uptake and trafficking of nanostructured materials built from immune signals. **M.L. Bookstaver**, C. Jewell

11:20 COLL 445. Understanding the effects of surface coating and nanocrystal shape on corona formation for gold colloids. **W. Perng**, Z. Jin, L. Du, H.M. Mattoussi

Section D

Orange County Convention Center
West Hall B4 - Theater 4

ACS Award in Colloid Chemistry: Symposium in Honor of Naomi Halas

Cosponsored by PHYS
C. J. Murphy, *Organizer*
R. Bardhan, *Presiding*

8:30 COLL 446. Carrier dynamics in plasmonic nanostructures. **S. Link**

9:00 COLL 447. How adsorbates influence plasmon dephasing and relationships to photocatalysis. **P. Christopher**

9:30 COLL 448. Gold nanorods: SAXS studies of their growth and the effects of hydrostatic pressure. **P. Mulvaney**

10:00 Intermission.

10:30 COLL 449. Gold nanorods with ultranarrow LSPR bands. **L. Liz Marzan**

11:00 COLL 450. Next-generation anisotropic and optical materials: Imaging. **C.J. Murphy**

11:30 COLL 451. Cancer diagnosis and response to treatment with plasmonic nanoprobes. **R. Bardhan**

12:00 Concluding Remarks.

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Nanocrystals Interfaced with Biology

H. M. Mattoussi, *Organizer*
V. M. Rotello, *Organizer, Presiding*
G. F. Strouse, *Presiding*

8:30 COLL 452. Protein adsorption on inorganic nanoparticles in complex environments. **W.J. Parak**

9:00 COLL 453. Integrating nanoparticles and transition metal catalysts for boorthogonal chemistry: Imaging and therapeutics using engineered nanoparticle 'nanozymes'. **V.M. Rotello**

9:30 COLL 454. Tailor-made surface modifications of nanocrystals for applications in materials and life sciences. **H. Weller**

10:00 Intermission.

10:20 COLL 455. Surface peptide mediated quantum dot/ gold uptake. **G.F. Strouse**

10:50 COLL 456. Influence of composition and surface state on the toxicity and fate of indium phosphide quantum dots. **P. Reiss**

11:20 COLL 457. Multiply-binding polymeric imidazole ligands: Influence of molecular weight and monomer sequence on colloidal quantum dot stability. **J.H. Dunlap**, A.F. Loszko, R.A. Flake, Y. Huang, B.C. Benicewicz, A.B. Greytak

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Supramolecular Assemblies at Surfaces: Non-covalent, Covalent & Coordination Bonding

2D to 3D & Biomolecular Assemblies

F. Rosei, S. L. Tait, *Organizers*
M. Lackinger, J. MacLeod, *Presiding*

8:30 COLL 458. Combining electrospray ionisation deposition and scanning tunnelling microscopy to investigate the surface assembly of macromolecules. **G. Costantini**

9:00 COLL 459. Programmable supramolecular self-assembly of DNA at surfaces. **T. Ye**, H. Cao, G. Abel

9:20 COLL 460. Diverse self-assemblies of protein 2D crystalline at solid-liquid interface. **S. Zhang**, R. Alberstein, F.A. Tezcan, J. De Yoreo

9:40 COLL 461. Molecular mechanism of peptide assembly propensity studied with STM. **C. Wang**

10:10 Intermission.

10:20 COLL 462. Chiral organization and charge redistribution in molecular layers on surfaces beyond the monolayer. **E. Barrena**

10:50 COLL 463. Building the next layer. C. Fang, J. He, L. Wilczek, H. Zhu, O. Chen, **M.B. Zimmt**

11:20 COLL 464. Sub-molecular tunneling barrier measurements of molecular adlayers at the solution-graphite interface. **J.A. Olson**, J.C. Baum, M.J. Novak, K. Sriraman

11:40 COLL 465. Understanding cooperative interactions in the polymorphs of self-assembled macrocycles. **S. Debnath**, J. Yang, H.D. Castillo, J. Dobscha, S.L. Tait, A.H. Flood, P. Ortoleva, K. Raghavachari

12:00 COLL 466. Order/disorder phase boundary in supramolecular self-assembly of macrocycles at surfaces. **H.D. Castillo**, J. Yang, S. Debnath, J. Dobscha, C. Trainor, R.D. Mortensen, K. Raghavachari, A.H. Flood, P. Ortoleva, S.L. Tait

12:20 Concluding Remarks.

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, O. Chen, H. Fan, *Organizers*
T. Li, *Organizer*, *Presiding*
Y. Jiang, *Presiding*

8:30 COLL 467. Multi-layered metal-organic framework microcrystals as a host to control the guest-to-host and guest-to-guest interactions. **C. Tsung**

9:00 COLL 468. Nanostructured electrode materials for Li/Na ion storage. **A. Yan**

9:30 COLL 469. Advanced *in situ* X-ray diffraction in revealing the structural changes of high voltage cathode under the effect of different electrolytes. M. He, **M. Cai**

10:00 Intermission.

10:10 COLL 470. From interfacial studies to high-performing catalysts: Synthetic design at nanoscale. **Y. Huang**

10:40 COLL 471. Toward total synthesis of thiolate-protected metal nanoclusters. **J. Xie**

11:10 COLL 472. Synthesis and functionalization of NIR-to-NIR upconversion nanophosphors for oil reservoir application. **W. Wang**

11:40 COLL 473. Investigating the effects of phase transfer procedures on the photoluminescence of aqueous quantum dots. **J.C. Schwabacher**, M.S. Kodaimati, E. Weiss

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, M. Nieh, A. N. Parikh, *Organizers*
R. Ashkar, N. Malmstadt, *Presiding*

8:30 COLL 474. Design efficacious targeting lipid nanoparticles. **M. Nieh**, A.T. Rad, C. Ching-Wen, W. Aresh, P. Lai

8:55 COLL 475. Assembly of receptor tyrosine kinases in the plasma membrane regulates function at the protein, cell and organism levels. S. Kim, X. Shi, **A.W. Smith**

9:20 COLL 476. Mechanism of toxin enrichment in bacterial outer membrane vesicles. J.B. Nice, **A.C. Brown**

9:45 COLL 477. Spin labeling of cysteines for EPR structural studies on type II cannabinoid receptor CB_2. A. Yeliseev, L.T. Hooper, W.E. Teague Jr, K.G. Hines, R.L. Beckner, L. Zoubak, **K. Gawrisch**

10:10 COLL 478. Self-spreading of a phospholipid bilayer in the scaffold of polymerized lipid bilayer. **K. Morigaki**, F. Tamura, Y. Tanimoto, R. Nagai, M. Yamada, F. Hayashi

10:35 COLL 479. Fatty acids of Gb_3 influence its partition in phase separated lipid membranes as well as Shiga toxin binding. **C. Steinem**

11:00 COLL 480. Peering into the lipid world. **N.K. Devaraj**

11:25 COLL 481. Lateral diffusion and fluorescence quenching in lipid bilayer membranes on graphene oxide. **R. Tero**

11:50 COLL 482. Domain dynamics and shape adaptations in osmotically stressed giant lipid vesicles. **A.N. Parikh**

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

J. Chen, X. Xia, *Organizers*
S. Neretina, D. Qin, *Organizers, Presiding*

8:30 COLL 483. Supramolecular, chemistry-based, reversible surface charge reversal. **L. Liz Marzan**

9:00 COLL 484. Competing role of surface chemistry on nanostar stability and SERS activity. **A.J. Haes**, W. Xi

9:30 COLL 485. Understanding the protein corona one molecule and one nanoparticle at a time. **S. Link**

10:00 Intermission.

10:15 COLL 486. Efficient plasmon-induced hot electron transfer at metal/semiconductor junctions. **T. Lian**

10:45 COLL 487. Direct Optical Lithography of Functional Inorganic Nanomaterials (DOLFIN) enabled by novel nanocrystal surface chemistry. Y. Wang, J. Pan, H. Cho, **D. Talapin**

11:15 COLL 488. Optimization of the surface, ligands, and structure of semiconductor nanocrystal quantum dots (QDs) for photocatalytic charge transfer reactions. **K. McClelland**, E. Weiss

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TUESDAY AFTERNOON

Section A

Orange County Convention Center
Room W230D

ACS Awards Lectures

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

2:00 Introductory Remarks.

2:10 COLL 489. Award Address (ACS Award in Colloid Chemistry sponsored by the Colgate-Palmolive Company). Tunable plasmonic nanoparticles: New materials and new applications. **N.J. Halas**

3:00 Introductory Remarks.

3:10 COLL 490. Award Address (ACS Award in Surface Chemistry sponsored by the Procter & Gamble Company) Models for heterogeneous catalysts: Complex materials at the atomic level. **H. Freund**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Basic Research in Colloids, Surfactants & Interfaces

Nanomaterials

R. Nagarajan, *Organizer*
T. Guo, *Presiding*

2:00 COLL 491. Fabrication and flow characteristics of monodisperse bullet-shaped microparticles with controllable structures. **Q. Cai**, X. Ju, C. Chen, Y. Faraj, Z. Jia, J. Hu, R. Xie, W. Wang, Z. Liu, L. Chu

2:20 COLL 492. New insights to optical properties of fluorescent quantum dots by polarized resonance synchronous spectroscopy. **J. Xu**, Y. Yuan, O. Chen, D. Zhang

2:40 COLL 493. Theoretical study of X-ray-Induced Energy Transfer (XIET) from nanomaterial donors to nanomaterial acceptors. **T. Guo**

3:10 COLL 494. *In-situ* analysis of nucleation and growth of transition metal oxalate precursor particles via time evolution of solution composition and particle size distribution. **H. Dong**, A. Wang, G. Smart, D. Johnson, G. Koenig

3:30 COLL 495. Colloidal semiconductor CdSe magic-size clusters with 415 nm bandgap. **K. Yu**

3:50 COLL 496. Applying charge equilibration methods to CdSe quantum dots to gain atomistic insight into the magic-size phenomenon. **K.C. Tvrdy**, N. Weeks

4:10 COLL 497. Effects of branch morphology and crystallinity of Au-Co nanoparticles for enhanced oxygen evolution catalysis. **M. Myekhlai**, L. Gloag, T. Benedetti, R. Tilley, J. Gooding

4:30 COLL 498. Latent fingerprint development and imaging with NIR(980nm)-to-NIR(800nm) upconversion nanocrystals. **A. Baride**, G. Sigdel, P. May

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Basic Research in Colloids, Surfactants & Interfaces

Colloidal Systems

R. Nagarajan, *Organizer*
A. Chervanyov, *Presiding*

2:00 COLL 499. Novel clustered state of colloidal dispersions: Transport properties of concentrated dispersions of particles with competiing interactions validated against measurements of lysozyme with application to biopharmaceuticals. **N.J. Wagner**, G. Naegele, J. Bergenholtz

2:30 COLL 500. Strategies of optimizing CO_2-responsive assemblies by understanding their switching behaviors and feasibility in application. **Y. Lu**, Y. Zhu, D. Sun, Q. Liu, Z. Xu

2:50 COLL 501. Polymer mediated interaction between colloids and their effect on thermodynamic properties of filled polymer melts and blends. **A. Chervanyov**

3:20 COLL 502. How do surfactants control the agglomeration of clathrate hydrates? **P.M. Naullage**, A.A. Bertolazzo, V. Molinero

3:40 COLL 503. Effects of antifreeze proteins and their hyperactive mutants on calcite crystallization. **A. Kishishita**, J.J. Lugo, J.O. Castellon, F. Rojas, X. Wen

4:00 COLL 504. Controllable fabrication of ultra-thin capsules encapsulated with smart nanogels for simple detection of lead(II) ions. **L. Wenying**, X. Ju, R. Xie, W. Wang, Z. Liu, L. Chu

4:20 COLL 505. Rheological properties of hard-sphere suspensions in biaxial shear flow. **R. Tao**, Z. Tsinas, L. Guerrero, A. Forster

4:40 COLL 506. Stabilization of nano-HMX suspensions with PVP to improve the milling process. **M. Doukkali**, E. Gauthier, r. patel, V. Stepanov, H. Hadim

5:00 COLL 507. Effect of electrolyte type and concentration on the electrokinetic behaviour of clay- polyelectrolyte dispersions. **M. Nasser**, S. Shaikh, A. Benamor

Section D

Orange County Convention Center
West Hall B4 - Theater 4

Novel Functionalization Methods for Textiles & Fibers

N. Pomerantz, M. Richards, *Organizer, Presiding*

2:00 COLL 508. Nanocellulose coatings on cellulose non-woven fabrics: High flux affinity membranes for water purification. **B. Jalvo**, A. Aguilar, A. Mathew

2:25 COLL 509. Garment-integrated thermoelectric devices. **T.L. Andrew**

2:50 COLL 510. Electrochemical properties of 3-dimensional flexible substrates with iridium oxide nanoparticles for use as a supercapacitor. **S. McGraw**, D. Wickramasinghe, K. Chow, M. Craps, R. Czerw, K. Senecal

3:15 COLL 511. Textile functionalization by porous protein crystal conjugation and guest molecule loading. L. Hartje, D. Andales, L. Gintner, L. Johnson, Y. Li, **C. Snow**

3:40 COLL 512. Inorganic nanocoating technology for functional textile. **A. Abbas**

4:05 COLL 513. Directed evolution of tandem repeat protein fibers. **M.C. Demirel**, H. Jung

4:30 COLL 514. Colloidal chemistry of NFC based sustainable textile dyeing technology and factors affecting dye performance. **A. Liyanapathiranage Dona**, S. Sharma, S. Minko

4:55 COLL 515. Fabric modification with nanocellulosic fibers as functional carriers. **S. Seyedi Ghezghapan**, M. Savchak, A. Liyanapathiranage Dona, S. Sharma, S. Minko, I.A. Luzinov

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Characterization of the Ligand Coating on Nanocrystal Surfaces

H. M. Mattoussi, V. M. Rotello, *Organizers*
J. Vela, E. A. Weiss, *Presiding*

2:00 COLL 516. Fluorinated quantum dots. K. Perez, B. Nagasing, **E.A. Weiss**

2:30 COLL 517. What calorimetry can teach us about quantum dots: A tale of ITC. L. Hicks, Z.B. Di Giusto, **J.D. Keene**

2:50 COLL 518. Design of histone-mimic nanoparticles for DNA and RNA compaction using molecular modeling. M. Manning, J.A. Nash, **Y.G. Yingling**

3:20 COLL 519. Spatially controlled bioorthogonal catalysis for imaging and drug delivery. **R. Das**, A. Gupta, G.Y. Tonga, R.F. Landis, T. Mizuhara, V.M. Rotello

3:40 Intermission.

4:00 COLL 520. Atomistic modeling of nanoparticles self-assembly with complex coupling. **P. Kral**

4:30 COLL 521. Unveiling the surface chemistry of colloidal $NaPnE_2$ nanocrystals (Pn = Sb, Bi; E = S, Se). **J. Vela**

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Basic Research in Colloids, Surfactants & Interfaces

Emulsions, Foams & Dispersions

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

2:00 COLL 522. Structure and collective dynamics of boehmite-oriented aggregation. **E. Nakouzi**, J.A. Soltis, B.A. Legg, G.K. Schenter, X. Zhang, T.R. Graham, K. Rosso, L. Anovitz, J. Chun, J. De Yoreo

2:20 COLL 523. Enhancement of anaerobic digestion sludge dewatering performance using *in-situ* crystallization in combination with cationic organic polymers flocculation. **P. Yang**

2:40 COLL 524. Chemical fusion of the soft matter under the mechanical stirring. **M. Lisunova**

3:10 COLL 525. Entry, bridging and spreading of *n*-hexane at the air/zwitterionic surfactant solution interface in presence of salts with respect to foamability and foam stability. **S. Varade**

3:30 COLL 526. Synthesis of magnetically responsive Janus particles using biodegradable natural chemicals for functional magnetic emulsions. **X. He**, C. Liang, Q. Liu, Z. Xu

3:50 COLL 527. Reversible sol-gel phase-changing electro-responsive smart particles-dispersed colloidal suspensions. **T. Do**, U. Choi

4:10 COLL 528. Improving BFFT of waterborne polyurethane coating by building encapsulated polyisocyanate emulsion with hydrophobic inter-facial agent. **R. Wang**, Z. Jiang, Z. Wang, M. Zhao, J. Zhang, J. Li

4:30 COLL 529. Structure-property relationship of commercial surfactants and bilgewater emulsions stability. **M.R. Willner**, J.K. Church, J. Lundin, D. Diaz, W. Lee, D.M. Paynter

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Basic Research in Colloids, Surfactants & Interfaces

Colloids, Ions & Interactions

R. Nagarajan, *Organizer*
A. Karmakar, *Presiding*

2:00 COLL 530. Multicomponent self-assembled gels: Compositional effects on rheological and tribological responses. **B.V. Farias**, S.A. Khan

2:20 COLL 531. Combined supramolecular and mesoscale modelling of liquid–liquid extraction of rare earth salts. **A. Karmakar**

2:50 COLL 532. Studies of caffeine interactions with cations and osmolytes. **Y. Zhang**, T.S. Thompson, W.T. Price, N. Johnson, A.P. Allsbrook, J. Skubal, G. MacDonald

3:10 COLL 533. Mineralization in balanced salt solutions. **M.V. Phelps**

3:30 COLL 534. Effect of electrolyte type and concentration on the electrokinetic behaviour of clay-polyelectrolyte dispersions. **M. Nasser**, A. Benamor

3:50 COLL 535. Unprecedented volume exclusion co-ion effect in self-assembly of macroions. **J. Chen**, K. Qian, K. Xiao, J. Luo, H. Li, M. Tsige, T. Liu

4:10 COLL 536. Reverse binding affinities of metal cations in nanoconfined cavity. **J. Luo**, S. Ye, T. Li, E. Sarnello, H. Li, T. Liu

4:30 COLL 537. Simple method for visual detection of lead (II) based on smart polymeric materials. **Y. Liu**, X. Ju, R. Xie, W. Wang, Z. Liu, L. Chu

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Basic Research in Colloids, Surfactants & Interfaces

Carbon Materials

R. Nagarajan, *Organizer*
S. Srivastava, *Presiding*

2:00 COLL 538. Colloidal and chemical properties of graphene oxide and step wisely reduced graphene oxide. **S. Azizighannad**, S. Mitra

2:20 COLL 539. Exploring the role of induced defects in carbon nanotubes through a novel camphor-mediated combustion approach in electromagnetic interference shielding application. **S. Srivastava**, K. Manna

2:50 COLL 540. Ionic strength dependence of short DNA conformations at carbon nanotubes: Free energy landscape study. **A.A. Alizadehmojarad**, L. Vukovic

3:10 COLL 541. Effect of the metal substrate on interlayer interactions in bilayer graphene. **M. Christian**, E.R. Johnson

3:30 COLL 542. Examining charge carrier mobility in graphene oxide-titanium oxide thin films. **E. Barrios**, L. Zhai

3:50 COLL 543. Anchoring Ti^{4+}/WO_3 onto functionalized graphene oxide: Enhanced adsorption capacity and photocatalytic activity. **Q. Zhang**, J. Pu

4:10 COLL 544. Structure-dependent Fluorescence Resonance Energy Transfer (FRET) in aqueous, carbon, quantum-dots-embedded PC60-PC_{61}BM colloids. **Y. Kim**, P. Guo, R. Schaller

4:30 COLL 545. Melt-rheology and morphology of multi-walled carbon nanotube-based polypropylene composites: Assessing the state of nanotube dispersion. **A. Bhattacharyya**, D. Parija

4:50 COLL 546. Carbon nanodots (CNDs): Fundamentals of the optoelectronic properties and antioxidation. **J. Wei**, W. Zhang, Z. Ji, Z. Zeng, A.T. Sheardy, D. Arvapalli

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Basic Research in Colloids, Surfactants & Interfaces

Lipids, Peptides, Proteins

R. Nagarajan, *Organizer*
T. Wei, *Presiding*

2:00 COLL 547. Confocal Raman microscopy investigation of small-molecule partitioning in hybrid supported bilayers. **M. Zare**, J.P. Kitt, J.M. Harris

2:20 COLL 548. Surface chemistry and spectroscopic study of α-synuclein and its NAC part. **C. Wang**

2:40 COLL 549. Interactions of gold nanoparticles with phospholipid bilayer studied with coarse-grained molecular dynamics simulations. **T. Wei**

3:10 COLL 550. Novel route to designing radiofrequency and near-infrared responsive multifunctional nanostructures using lipid templates for cancer theranostics. **G.D. Bothun**, A. Pan, S. Meenach, J. Mdgolam

3:40 COLL 551. Vitamin K analog, menaquinone-2, adopts a folded conformation in solution and at a model membrane interface. **J.T. Koehn**, E. Magallanes, B.J. Peters, D.C. Crick, D.C. Crans

4:00 COLL 552. Understanding the role of interfacial and bulk interactions between novel cellulose ethers and bile salts to modulate lipid digestion. J. Zornjak, J. Liu, A. Esker, D. Novo, K.J. Edgar, **C. Fernandez Fraguas**

4:20 COLL 553. Interaction of surfactant with model lipid membranes: Influence of surfactant hydrophobic chain fluidity. **Y. Chen**, j. webster, p. li

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WEDNESDAY MORNING

Section A

Orange County Convention Center
West Hall B4 - Theater 1

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Chemistry & Physics of Colloidal Nanocrystals

H. M. Mattoussi, V. M. Rotello, *Organizers*
M. Kovalenko, D. Talapin, *Presiding*

8:30 COLL 554. Ligand density and conformation on gold nanoparticles inferred by NMR. **C.J. Murphy**

9:00 COLL 555. Improving the stability of $CsPbX_3$ (X=Cl, Br, I) perovskite quantum dots via ligand design. **S. Wang**, L. Du, H.M. Mattoussi

9:20 COLL 556. Small angle x-ray scattering for sizing of semi-conducting colloidal nanoparticles. **B. Abecassis**, J. Maes, N. Castro, Z. Hens

9:50 Intermission.

10:10 COLL 557. Colloidal atomic layer deposition. W. Cho, A. Hazarika, K. Mulloy, J. Portner, **D. Talapin**

10:40 COLL 558. Surface chemistry of colloidal $Cu_{2-x}S$ and $CuInS_2$-based nanocrystals. **C. de Mello Donega**

11:10 COLL 559. Interrogating, J, spectral overlap in terbium(III) doped nano-spinels as green emitters for solid-state lighting. **D.A. Hardy**, R.A. Tigaa, G.F. Strouse

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Basic Research in Colloids, Surfactants & Interfaces

Drops, Wetting & Interface Dynamics

R. Nagarajan, *Organizer*
R. M. Espinosa-Marzal, *Presiding*

8:30 COLL 560. Understanding uniform, fast and scalable buoyancy-driven macro-sized drop generations. **J. Youngkyun**, T. Do, U. Choi, S. Choi

8:50 COLL 561. Mechanistic modeling of wetting behaviors of complex rock/oil/water systems for estimating rupture disjoining pressure: A comparison of experimentally-estimated values with published, theoretically derived values. **D. Saini**

9:10 COLL 562. Spontaneous displacement of high viscosity micron-size oil droplets from a curved solid in aqueous solutions. **R. LI**, R. Manica, A. Yeung, Z. Xu

9:30 COLL 563. Structural and dynamic properties of Ionic liquid-solid interfaces. M. Han, **R.M. Espinosa-Marzal**

10:00 COLL 564. Spreading of wetting liquids on surfaces with irregular roughness. **M. Varady**, E. Emmons, A. Tripathi, D. Boyne, T. Pearl, B.A. Mantooth

10:20 COLL 565. Droplets sliding down a vertical surface under increasing horizontal forces. **S. Tang**, Y. Valkya Reddy Bhimavarapu, S. Gulec, R. DAS, R. de la Madrid, R. Tadmor

10:40 COLL 566. Interactions at submerged liquid-repellent surfaces: Gas meniscus formation and development. **M. Eriksson**, M. Järn, M. Tuominen, V. Wallqvist, P. Claesson, H. Teisala, D. Vollmer, M. Kappl, H. Butt, P. Gane, J. Schoelkopf, A. Swerin

11:00 COLL 567. Dynamic surfactant behaviour and interface coverage during single droplet formation in microfluidics. **I. Kiratzis**, D. Vigolo, M. Simmons

11:20 COLL 568. Porous liquid infused surfaces in microfluidics: Pressure and heat transfer measurements. **R.L. Goodwin**, A. Shiave, R.V. Mohan, J.R. Alston

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Basic Research in Colloids, Surfactants & Interfaces

Biosensing, Bioimaging & Drug Delivery

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

8:30 COLL 569. Microscale droplets of thermotropic liquid crystals that respond to rhamnolipids and amphiphiles involved in the regulation of bacterial quorum sensing. **B.J. Ortiz**, M.E. Boursier, D. Manson, H.E. Blackwell, D.M. Lynn

8:50 COLL 570. Design of chiral gold nanoparticles for biosensing. **H. Jang**, N. Kotov

9:10 COLL 571. Shaping magnetic fields for effective drug transport across liposome membranes. **V. Chikan**

9:40 COLL 572. Aqueous 0D, 1D, and 2D semiconductor nanocrystals: Single nanoparticle analysis and bioimaging applications. **J. Geng**, L. Ma, S. Lim, S. Sarkar, A. Smith

10:00 COLL 573. Antimicrobial-peptide-conjugated MoS_2-based nanoplatform for multimodal synergistic inactivation of superbugs. **P.C. Ray**

10:20 COLL 574. Surface-supportive Fe-Mil88B thin films for drug delivery. **A. Bui**, J. Dinh, F. Tian

10:40 COLL 575. Physicochemical characterisation of PAMAM dendrimer as multifunctional nanocarriers. **B. Jachimska**

11:00 COLL 576. Dynamic liquid colloids: A new sensing material for the rapid detection of food-borne pathogens. **L. Zeininger**, T.M. Swager

11:20 COLL 577. Surface chemistry and spectroscopic studies of β-galactosidase-carbon dots conjugate: Its use in biosensing. **S.K. Sharma**, S. Paudyal, K.J. Mintz, Y. Zhou, E.M. Zaharan, R.M. Leblanc

Section D

Orange County Convention Center
West Hall B4 - Theater 4

New Frontiers in Hybrid Nanosized Metallic & Semiconductor Materials

B. P. Chauhan, *Organizer, Presiding*

8:30 COLL 578. Electronic and optical properties of (4,8) boron-group V nanosheets. P.A. Brown, **K.L. Shuford**

9:00 COLL 579. Submicron surface-plasmon-polariton perovskite laser. **S. Cho**, Y. Yang, M. Soljacic, S. Yun

9:25 COLL 580. Hybrid nanocluster-catalyzed, one-pot, mild, and unprecedented stereoselective synthetic route to functional silanes and germanes. **B.P. Chauhan**, T. Hopkins, A. Sarkar

9:55 Intermission.

10:15 COLL 581. Self-Assembled Monolayer Field-Effect Transistors (SAMFETs) and their application in organic integrated circuits. **B. Zhao**, B. Gothe, M. Halik

10:40 COLL 582. Bulk assembly of metal halide clusters and their tunable photophysical properties. **C. Zhou**, H. Lin, M. Worku, J. Neu, Y. Zhou, Y. Tian, S. Lee, P.I. Djurovich, T. Siegrist, B. Ma

11:05 COLL 583. Engineering supraparticle assemblies. **N.S. Ramesar**, G. Silveira, T. D. Nguyen, J. Bahng, S.C. Glotzer, N. Kotov

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

Surface Chemistry in Biology & Nanomedicine

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

8:30 COLL 584. Surface modification of core/shell quantum dots enables dynamic visualization of neuronal membrane proteins implicated in mental illness. **S.J. Rosenthal**

9:00 COLL 585. Assessment of binding avidity and adhesion forces by multivalent dendrimer nanoprobes. S. Tang, J. Cannon, **S. Choi**

9:30 COLL 586. Zwitterionic multidentate polymer coating for non-fouling quantum dots. **Z. Han**, A. Smith

9:50 COLL 587. Short-wave infrared quantum dots with compact sizes for microscopic molecular imaging in cells and tissues. **S. Sarkar**, P. Le, J. Geng, Y. Liu, Z. Han, M.U. Zahid, A. Smith

10:10 COLL 588. Ring DNA-carbon nanotube conjugates. **A.A. Alizadehmojarad**, A.G. Beyene, P. Kral, M. Landry, L. Vukovic

10:30 COLL 589. Computational design of nanoparticles with tunable water-mediated interactions. B.C. Dallin, **R. Van Lehn**

10:50 COLL 590. Lipase-catalyzed enzymatic biodegradation of carbon dots follow sequential oxidation pathways. **I. Srivastava**, D. Sar, P. Mukherjee, A. Schwartz-Duval, Z. Huang, R. Bhargava, D. Pan

11:10 COLL 591. Engineering of safe nanocapsules for targeted antibacterial applications. **K. Ivanova**, E. Ramon, A. Ivanova, T. Tzanov

11:30 COLL 592. Functionalization of gold nanoparticles for generation of drug and nucleic acid delivery nanoplatforms. A. Shabana, U.K. Mondal, A. Kizewski, **M.A. Ilies**

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Surface Chemistry

Biomaterials & Membranes

S. L. Tait, *Organizer*
N. Jiang, S. Youm, *Presiding*

8:30 COLL 593. Chemically resolving metal-supported regioisomeric assemblies at nanoscale by ultra-high vacuum, tip-enhanced Raman spectroscopy: Conformation & interaction. S. Mahapatra, J. Schultz, L. Li, **N. Jiang**

8:50 COLL 594. Amusements with salt-water oscillator. **A.K. Das**

9:10 COLL 595. Changes in protein's secondary structure as a result of its interaction with a gold surface. **P. Komorek**, E. Martin, M. Walek, I. Brand, B. Jachimska

9:30 COLL 596. Genomic DNA functionalized 3D printed architected materials for drug capture. **D. Yee**, S. Krishnamoorthy, R.H. Grubbs, S. Hetts, J.R. Greer

9:50 COLL 597. Substituent effects on the organization of methacrylate monomers and existing intermolecular interactions at air-liquid interface using sum frequency generation spectroscopy. **U.I. Premadasa**, K.A. Cimatu

10:10 Intermission.

10:20 COLL 598. Parallel orientation to the interface: Surface chemistry and spectroscopic study of α-synuclein and the NAC part. **C. Wang**

10:40 COLL 599. Semiconducting block copolymer thin films via surface-initiated polymerization. **S. Youm**, E.E. Nesterov

11:00 COLL 600. 3D structure fabrication using 2D controlled wetting surfaces. **T. Shimosaka**, T.J. McCarthy

11:20 COLL 601. *Operando* PM-IRAS+Raman spectroscopy for elucidating surface poisoning mechanisms of Pd-based hydrogen separation membranes in complex reaction mixtures. **C. O'Brien**

11:40 COLL 602. SuFEx-based hydrolysis strategy for the preparation of sulfate cation exchange resins. **L. Chen**, A. Kassick, S. Averick, J.J. Locklin

12:00 COLL 603. Facile grafting of zwitterions on membrane surface using bio-inspired polydopamine. **H. Lin**

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

F. Bai, O. Chen, H. Fan, *Organizers*
T. Li, *Organizer*, *Presiding*
Y. Jiang, *Presiding*

8:30 COLL 604. Janus-type MnOx-AgI nanoparticles as self-sensitized oxygen-evolving catalysts. L. Zhang, L. Jin, Y. Yang, P. Kerns, X. Su, M. Meng, B. Liu, **J. He**

9:00 COLL 605. High-pressure nanocrystals: New structures and new optical properties. **B. Zou**

9:30 COLL 606. Sub-50nm ultra-thin hybrid ED membrane made by colloidal self-assembly and plasma-defined atomic layer deposition. **Y. Jiang**, T. Zhang, C. Fan, S.L. Rempe

10:00 Intermission.

10:10 COLL 607. Architecting nanomaterials for naval applications. **A. Smith**

10:40 COLL 608. Crystal structure of $Au_{36}(SPhCH_3)_{24}$ gold nanomolecules. **V. Ganesh Raj**, A. Antonysamy

11:00 COLL 609. Self-assembly of non-spherical nanoparticles into functional supercrystals. **Z. Quan**

11:20 COLL 610. Electric field-driven assembly of silver nanocrystal superlattices. Y. Yu, D. Yu, **C. Orme**

11:40 COLL 611. Pressure response to the structure and optical properties of metal halide perovskite nanocrystals. **G. Xiao**

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 COLL 612. Measuring the transverse lipid diffusion of peptidolipidic systems using a novel SANS approach. **M.H. Nguyen**, D. Marquardt, M. DiPasquale, B. Rickeard

8:50 COLL 613. Self-assembly/disassembly of giant double-hydrophilic polymersomes at biologically-relevant pH. **W. Paxton**, S. Shin, P. Mcaninch, I.M. Henderson, A. Gomez, A.C. Greene

9:15 COLL 614. Effect of cholesterol on DOPC lipid membranes. **R. Ashkar**, M. Doktorova, F. Heberle, H.L. Scott, E.G. Kelley, M. Nagao, R. Usery, F.N. Barrera, J. Katsaras, G.W. Feigenson, G. Khelashvili

9:40 COLL 615. Imaging membrane viscosity through nonlinear light scattering. **H. Dai**, M. Wilhelm, M. Sharifian

10:05 COLL 616. Determination of biomembrane elastic properties via analysis of thermal fluctuations of lipid orientation in molecular simulations. **F.L. Brown**

10:30 COLL 617. Interrogating cell membrane organization with secondary ion mass spectrometry. **M.L. Kraft**, A.N. Yeager, P. Weber, J. Zimmerberg

10:55 COLL 618. Transverse lipid organization dictates bending fluctuations in model plasma membranes. B. Rickeard, M.H. Nguyen, M. DiPasquale, E.G. Kelley, M. Nagao, **D. Marquardt**

11:20 COLL 619. Correlated membrane bound protein conformational transitions and lipid dynamics provides new insights into leakage kinetics by pore forming toxins. I. I. P., R. Cheerla, **G.K. Ayappa**, J. Basu

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

J. Chen, X. Xia, *Organizers*
S. Neretina, D. Qin, *Organizers*, *Presiding*

8:30 COLL 620. Impact of surface potential on plasmonic and electronic properties of metal oxide nanocrystals. **D.J. Milliron**

9:00 COLL 621. Surface matters: Interface effects on optoelectronic behavior of semiconductor nanocrystals and hybrid semiconductor-metal nanoparticles. **U. Banin**

9:30 COLL 622. Cooperative action of hot carrier and surfactant in SPR-driven growth of Au nanostars. **W. Wei**

10:00 Intermission.

10:15 COLL 623. Surface chemistry effects on the ultrafast dynamics of propagating surface plasmon polaritons in metal nanostructures. **G.V. Hartland**

10:45 COLL 624. Computational prediction of activation energy without transition state calculation. M. Liu, **S. Zou**

11:15 COLL 625. Plasmonic hot-carrier-mediated tunable photochemical reactions. **Y. Zhang**, T. Nelson, H. Guo, S. Tretiak, G.C. Schatz

Producing Equilibrium Amorphous Packings

Vapor Deposited Glasses

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Producing Equilibrium Amorphous Packings

Vapor Deposited Glasses

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Nanoparticles in Nature: Detection, Characterization, Origin & Formation Mechanisms

Sponsored by GEOC, Cosponsored by COLL

Environmental Interfaces under Nano-scale Confinement

Sponsored by GEOC, Cosponsored by COLL

Bio-Based Gels & Porous Materials

3D printing & Rheology of Cellulose & Nanocellulose

Sponsored by CELL, Cosponsored by ANYL, BIOL and COLL

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Sponsored by CATL, Cosponsored by COLL, ENFL, I&EC, INOR and PHYS

WEDNESDAY AFTERNOON

Orange County Convention Center
West Hall B4 - Theater 1

Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials

Energy & Charge Transfer Interactions in Nanoparticle Complexes

V. M. Rotello, *Organizer*
H. M. Mattoussi, *Organizer, Presiding*
B. E. Cohen, *Presiding*

2:00 COLL 626. Challenging the polymer barricades around quantum dots: keeping copper ions away from the surface during click reactions. **B.E. Cohen**, V. Mann, A. Powers

2:30 COLL 627. Energy transfer controlled by the semiconductor nanocrystal to ligand interface. **E. Raulerson**

2:50 COLL 628. Understanding charge transfer from semiconductor nanocrystals to organics following LSPR excitation. **M. Blemker**

3:10 COLL 629. Investigating the energy transfer between organic and inorganic semiconductor two-dimensional material. **M.A. Mahmoud**

3:30 Intermission.

3:50 COLL 630. Characterizing the Brownian diffusion of nanocolloid and molecular solutions: Diffusion ordered NMR spectroscopy versus dynamic light scattering. C. Zhang, Z. Jin, G. Palui, **H.M. Mattoussi**

4:20 COLL 631. Point of anchor: Charge transfer between acetylenyl ligands and nanoparticles. **Y. Peng**, B. Lu, S. Chen

4:40 COLL 632. Dendrimer-stabilized gold nanoflowers embedded with ultrasmall iron oxide nanoparticles for multimode tumor theranostics. S. Lu, X. Li, J. Zhang, C. Peng, M. Shen, **X. Shi**

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Biomaterials & Biointerfaces

Bacteria at Interfaces & Antibacterial Materials

Y. Lapitsky, R. Wylie, *Organizers, Presiding*

2:00 COLL 633. Role of shape, chemical heterogeneity, and modulus on bacterial adhesion. M. Shave, **M.M. Santore**

2:30 COLL 634. Biofilm bridge formation of *Staphylococcus aureus* biofilms, a gram positive bacteria, on slippery, lubricant-infused porous surface. **H. Valquier-Flynn**, W. Lei, J. Bruchmann, P. Levkin, T. Schwartz, C. Wilson, A.E. Holmes

2:50 COLL 635. Novel microbe-resistant hybrid membranes for healing burns, wounds, and scars. **K. Mukhopadhyay**, K. Crawford

3:10 COLL 636. Single-cell optical trapping technique for real-time antibacterial characterization of novel wound management materials. T.J. Beckmann, D. Danhausen, W. Chura, **J.J. Keleher**

3:30 COLL 637. Multiphoton, FRET-based, theranostic nanoplatform for two-photon bioimaging and two-photon excited photodynamic therapy of multiple drug-resistant bacteria. **P.C. Ray**

3:50 COLL 638. Metal-protein nanocomposites with bactericidal and antibiofilm efficacies. **G. Ferreres Cabanes**, K. Ivanova, A. Bassegoda, J. Torrent-Burgués, T. Tzanov

4:10 COLL 639. Nano-forest chitosan-gelatin films: An implant coating model for enhanced bone regeneration. **S. Altuntas**, H. Dhaliwal, N. Bassous, A.E. Radwan, P. Alparslan, T. Webster, F. Buyukserin, M. Amiji

4:30 COLL 640. Lectin-conjugated nanocarriers to treat chronic oral diseases. **S. Wijetunge**, Y. Sun

4:50 COLL 641. Ag-Cu alloy nanoparticle synthesis and targeting infection in osteoblast cells. **S.M. Qadri**, T. Abdulrehman, Y. Haik

5:10 COLL 642. Antibacterial polyurethane foam with incorporated lignin-capped silver nanoparticles for chronic wound treatment. **A.G. Morena**, I.S. Stefanov, T. Tzanov

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Basic Research in Colloids, Surfactants & Interfaces

Nanocolloids: Applications

R. Nagarajan, *Organizer*
S. Menegatti, *Presiding*

2:00 COLL 643. Microfluidic synthesis of hollow nanoparticles by using flow-induced interfacial self-assembly of polystyrene-block-poly(ethylene glycol). **X. Nguyen**, H. Jeon, D. Park, J. Huh, J. Go

2:20 COLL 644. Sealable spherical mesoporous silica shell nanoreactors as fiducial nanoscale probes for x-rays. **T. Guo**

2:50 COLL 645. Tuning the surface chemisrtry of graphene oxide nanoparticles for controlling drug release: modeling and experiments. J.D. Schneible, K. Shi, E.E. Santiso, K.E. Gubbins, **S. Menegatti**

3:20 COLL 646. Development of magnetic surfactants for low energy separations: Effect of surfactant stability on magnetic response. **A.E. Smith**, P. Scovazzo, A.W. Fortenberry, D.M. Reed

3:40 COLL 647. Controlled assembly and reduction of graphene oxide networks for conductive composites. **M. Meloni**, S. Víctor-Román, A. King, G. Fratta, E. Istif, M. Large, M. Peláez Fernández, S. Ogilvie, R. Arenal, A. Benito, W. Maser, A. Dalton

4:00 COLL 648. Microfluidic based chips for SERS ultrasensitive detection. **S. Gómez**, D. García-Lojo, I. Pastoriza-Santos, J. Perez-Juste

4:20 COLL 649. Building random alloy surfaces from intermetallic seeds as a general route to strain-engineered electrocatalysts. **J.T. Gamler**, H. Ashberry, X. Sang, R. Unocic, S.E. Skrabalak

4:40 COLL 650. Janus liposomes: Gel-assisted formation and functionalization. **Z. Liu**

Section D

Orange County Convention Center
West Hall B4 - Theater 4

Basic Research in Colloids, Surfactants & Interfaces

Nanoparticles Synthesis & Assemby

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

2:00 COLL 651. Formation of 2D semiconductors with mesoporosity. T. Hsieh, **Y. Liu**

2:20 COLL 652. Layer-dependent charge transfer kinetics in atomically thin MoS_2: PbS/CdS quantum dot hybrids. **M. Cotlet**

2:50 COLL 653. Switchable surfactants for the preparation of monodisperse, sinter-resistant, supported nanoparticle catalysts. **K.N. Bryant**, S.R. Saunders

3:10 COLL 654. Time evolution of CsPbBr3 nanocrystal synthesis: Cesium-bromine complexation dictates growth. **J. Wen**, B. Roman, F. Rodriguez Ortiz, N. Mireles Villegas, N. Porcellino, M. Sheldon

3:30 COLL 655. Upconversion luminescence enhancement using patterned reflective surfaces with applications in security printing. A. Baride, M.Y. Hossan, A. Schaum, D. Lewis, M.T. Berry, **P.S. May**

3:50 COLL 656. Role of gold oxidation state in the synthesis of Au-$CsPbX_3$ heterostructure nanoparticles. **F. Rodriguez Ortiz**, B. Roman, N. Mireles Villegas, J. Wen, M. Sheldon

4:10 COLL 657. Light-assisted cation exchange in $CsPbX_3$ nanocrystals. **T. Qiao**, D.H. Son

4:30 COLL 658. Deposition of graphene stabilized droplets for conductive surfaces. **F. Chen**, I. George, D.H. Adamson, D. Varghese

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

Hierarchical & Controlled Nanomaterial Assembly: Strategies & Functionality

J. A. Hollingsworth, R. Nagarajan, *Organizers*
N. B. Shustova, *Presiding*

2:00 COLL 659. Directing nanoscale self-assembly through valence control. **O. Gang**

2:30 COLL 660. Synthetic approaches for preparation of binary, heterogeneous nanoparticle composites for solid-state photonics. **M.A. Firestone**, A. Singh, J.A. Hollingsworth, P. Welch

3:00 COLL 661. Properties of three-dimensional flow-through electrodes made from solution-synthesized metal nanowires. M. Kim, **B.J. Wiley**

3:30 COLL 662. Synthesis and characterization of stimuli responsive poly(N-vinylcaprolactum-co-itaconic acid) mcrogel containing silver nanoparticles with tunable optical and catalytic properties. **M. Ajmal**

3:50 COLL 663. Molecular spacing of nanostructured carbon materials for energy storage: Synthesis and characterization. **W. Hixson**, J. Zuczek, N. Elathram, N. Zelenka, M. Bonfield, J.C. Poler

4:10 COLL 664. Nanostructured graphite-based materials for hydrogen energy storage. **Y. Zhang**

4:30 COLL 665. Atomistic simulations of carbon nanotube deposition on functionalized silicon substrates. **Z. Shen**, R. Van Lehn, J. Dwyer, P. Gopalan

4:50 COLL 666. 3-Dimensional templates from self-assembled 2-dimensional graphene. D. Varghese, C.D. Liyanage, A.V. Dobrynin, **D.H. Adamson**

5:10 COLL 667. Optical behavior of lipid bilayer encapsulated black phosphorous. **J.A. Maurer**, S.F. Bartolucci

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Surface Chemistry

Self-Assembled Monolayers & Surface Functionalization

S. L. Tait, *Organizer*
R. F. Farias Perez, E. Nakouzi, *Presiding*

2:00 COLL 668. Vapor-phase plotting of organosilane chemical gradients. **J. Bautista-Gomez**, A.V. Forzano, J.M. Austin, M.M. Collinson, D.A. Higgins

2:20 COLL 669. Optimized surface functionalization with self-assembled monolayers for enhanced alpha detection from uranium hexafluoride (UF_6). **K. Knight**, K. Charbonnet, W.A. Alexander

2:40 COLL 670. Enantiospecific interactions between chiral molecules and magnetic surfaces. **F. Tassinari**, K. Banerjee-Gosh, R. Naaman, Y. Paltiel

3:00 COLL 671. Structure and reactivity of NO_2-functionalized N-heterocyclic carbene monolayers on Au (111) surface. **E. Gross**

3:20 COLL 672. Patterned alkylsilane self-assembled monolayers for *in vitro* study of cardiac and neurodegenerative diseases. **A. Goswami**, C. Long, J.J. Hickman

3:40 Intermission.

3:50 COLL 673. Modification of inorganic oxides with poly(hydridomethyl)siloxanes as an approach to mixed functional surfaces. R. Perez, G. Fardella, **J.W. Krumpfer**

4:10 COLL 674. Visualizing mineral-solution interfaces using 3D atomic force microscopy. **E. Nakouzi**, B.A. Legg, S. Zhang, G.K. Schenter, J. Chun, C.J. Mundy, M.D. Baer, S.N. Kerisit, J. De Yoreo

4:30 COLL 675. Robust and transparent zwitterionic polymer with antifogging and self-cleaning properties under UV irradiation. **Q. Liu**, J.J. Locklin

4:50 COLL 676. Suitable characteristics for surfactants substituent of antifoam silicon oil. **R.F. Farias Perez**, C.R. Mansur

5:10 COLL 677. Surface reactivity of sodium silicate glasses in aqueous environment and its effects on mechanochemical wear: a ReaxFF molecular dynamics study. **S. Hahn**, A.C. Van Duin

5:30 COLL 678. Pre-treatment of dentin with chondroitin sulfate modulates dentinal tubule occlusion by toothpaste components. **S. Saeedi**, G. Sereda

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

O. Chen, H. Fan, T. Li, *Organizers*
F. Bai, *Organizer, Presiding*
Y. Jiang, *Presiding*

2:00 COLL 679. Evidence of stratification in binary colloidal films using microbeam small-angle X-ray scattering. **A.J. Carr**, W. Liu, K. Yager, A.F. Routh, S. Bhatia

2:20 COLL 680. Independent control of diameter and length of silver nanowires, assembly in the form of percolative networks for transparent electrodes and advanced optoelectrical characterizations in functional devices. **J. Simonato**, C. Celle, D. Toybou, D. Bellet, T. Sannicolo

2:40 COLL 681. DNA-programmed nanoparticle crystallization at interfaces. **R. Macfarlane**

3:00 COLL 682. Synthesis of Janus gold nanoprisms and high yield gold nanoprism dimers in solution. **M. Chowdhury**, C.A. Grapperhaus, M. O'Toole

3:20 COLL 683. Template-confined DNA-mediated nanoparticle assembly on surfaces. **W. Zhou**, C.A. Mirkin

3:40 Intermission.

3:50 COLL 684. Microfluidic studies of colloidal perovskite quantum dots. **M. Abolhasani**

4:10 COLL 685. Monte Carlo simulation of gold nanowire self-assembly driven by van der Waals forces. **O. Jahanmahin**, D. Kirby, C.D. Keating, K.A. Fichthorn

4:30 COLL 686. Synthesis and applications of chiral Au nanoparticles. **N. Shukla**, A. Pradhan, Y. Han, A.J. Gellman

4:50 COLL 687. Controllable synthesis and shape-directed self-assembly of gold nanoarrows. **L. Qi**

5:10 COLL 688. Effect of crystal quality on the brilliance of structural color from self-assembled colloidal crystals. **T. Liu**, B. Vansaders, S.C. Glotzer, M.J. Solomon

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

2:00 COLL 689. Interfacial behavior between lipid films and soluble saccharides: A cooperative adsorption model. **K. Link**, G.N. Spurzem, R.A. Walker

2:20 COLL 690. Lipid-lipid interactions in *Escherichia coli* mimetic inner membrane. **J. Hoyo**, J. Torrent-Burgués, T. Tzanov

2:45 COLL 691. Quantification of weak and ultraweak carbohydrate-carbohydrate interactions in cellular recognition. **A. Janshoff**

3:10 COLL 692. Design of polymer-based asymmetric membranes and compartmentalized vesicles. L. Beaute, E. Ibarboure, J. Le Meins, O. Sandre, N. McClenaghan, **S. Lecommandoux**

3:35 COLL 693. Connecting cell plasma membrane lipid oxidation to cell dysfunction in oxygen toxicity. **K. Ren**, N. Malmstadt

4:00 COLL 694. a-Synuclein disrupts inter-membrane interactions. **P. Chung**, Z. Qingteng, H. Hwang, A. Leong, P. Maj, R. Szczygiel, E. Dufresne, S. Narayanan, E. Adams, K.C. Lee

4:25 COLL 695. Morphogenesis of lipid domains in the presense of melatonin. **D. Bolmatov**, M. Lavrentovich, J. Katsaras

4:50 COLL 696. Probing the translational dynamics of MAC-derived lipid bilayers as a component of synthetic cells. **A. Smith**, L. Keranen Burden, S. Virolainen, T. Larsen, D. Burden

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

S. Neretina, X. Xia, *Organizers*
J. Chen, D. Qin, *Organizers, Presiding*

2:00 COLL 697. Interface synthesis and machine learning for controlling stability and energy alignment of nanoparticles. **Y. Wu**

2:30 COLL 698. Collapsed polymer-protected synthesis of complex nanocrystals and their arrays. **Z. Nie**

3:00 COLL 699. Bio-inspired approaches for the generation of multifunctional inorganic nanoparticles via responsive and reactive peptide ligands. **M.R. Knecht**

3:30 Intermission.

3:45 COLL 700. Ion-mediated ligand exchanges in semiconductor nanocrystals. **M. Zamkov**

4:15 COLL 701. Synthesis of trimetallic nanorods and nanoframes as electrocatalyts. X. Wang, Y. Wang, **J. Zhao**

4:45 COLL 702. Synthesis and characterization of highly branched ruthenium nanoparticles for oxygen evolution reaction. **A.R. Poerwoprajitno**, L. Gloag, T. Benedetti, S. Cheong, J.D. Watt, D. Huber, J. Gooding, R. Tilley

Producing Equilibrium Amorphous Packings

Making & Transforming Stable Glasses

Sponsored by PHYS, Cosponsored by COLL and PMSE‡

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Sponsored by CATL, Cosponsored by COLL, ENFL, I&EC, INOR and PHYS

Bio-Based Gels & Porous Materials

Gels in Medical Applications

Sponsored by CELL, Cosponsored by ANYL, BIOL and COLL

WEDNESDAY EVENING

Hydrocarbon/Water/Mineral Interactions in the Subsurface

Sponsored by GEOC, Cosponsored by COLL

Molecular Processes at Mineral-Water Interfaces: Predictions via Linking Theory & Experiments

Sponsored by GEOC, Cosponsored by COLL

THURSDAY MORNING

Section A

Orange County Convention Center
West Hall B4 - Theater 1

Basic Research in Colloids, Surfactants & Interfaces

Interface Science

R. Nagarajan, *Organizer*
L. Zarzar, *Presiding*

8:30 COLL 703. Multilayering of α-alkyl ester sulfonate at the air-water interface. **P. Li**, J. Penfold, R.K. Thomas

8:50 COLL 704. Structural coloration by cascading total internal reflection and interference at microscale concave interfaces. A. Goodling, S. Nagelberg, B. Kaehr, C. Meredith, S. Cheon, A. Saunders, M. Kolle, **L.D. Zarzar**

9:20 COLL 705. Potential-induced reorganization of redox-active self-assembled monolayers in the presence of anionic surfactants. **f. ben amara**, K. Tu, A. Storelli, I. Burgess, A. Badia

9:40 COLL 706. Formation of surface multilayers at the air-water interface from sodium polyethylene glycol monoalkyl ether sulfate/AlCl3 solutions. **J. Webster**, P. Li, J. Penfold, R.K. Thomas

10:00 COLL 707. AFM colloidal probe measurements implicate capillary condensation in punch-particle surface interactions during tableting. M. Badal Tejedor, **N. Nordgren**, M. Schuleit, A. Millqvist-Fureby, M.W. Rutland

10:20 COLL 708. Static friction of hydrogel interfaces. T. Shoaib, **R.M. Espinosa-Marzal**

10:50 COLL 709. Mapping surface wetting with trifunctional organosilanes bound at the vapor/solid interface. **J.C. Garno**, N. Kuruppu Arachchige

11:10 COLL 710. Exploration of surface cleaning and surface interactions via atomic force microscopy. **M. Belioka**, M.S. Reid, T. Pettersson

11:30 COLL 711. Probing the surface structure of fluorinated bottlebrush polymers with vibrational sum frequency generation spectroscopy and molecular dynamics simulations. **A. Chowdhury**, D. Chang, J.Y. Carrillo, Y. Ma, S.T. Retterer, K. Hong, B. Doughty

11:50 COLL 712. Development of microscopy systems for the visualization of Langmuir monolayer films. **B. Allen**, S. Croslow, A. Sostarecz

Section B

Orange County Convention Center
West Hall B4 - Theater 2

Basic Research in Colloids, Surfactants & Interfaces

Surfactant Science

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

8:30 COLL 713. Multiscale approach to study molecular and interfacial characteristics of vesicles. X. Yu, **M. Dutt**

9:00 COLL 714. Structures and kinetics of monodisperse platonic micelles: Part 5. **K. Sakurai**

9:30 COLL 715. Self-assembly, rheology, and surface properties of biosurfactant-surfactant mixtures. **S. Amin**, L. Xu, Y. Zhou

9:50 COLL 716. Synergistic interaction in mixed surfactant system in presence of oil and various counter-ions: Effects on foam stability and emulsification. **S. Varade**

10:10 COLL 717. Tunable surfactant phase transition in the presence of additives: a deposition study. **R.A. Gonçalves**, B. Lindman, M.G. Miguel, T. Iwata, Y.M. Lam

10:30 COLL 718. Study of temperature-induced coacervate-to-vesicle transition of globular fusion proteins towards engineered protein vesicles. **Y. Jang**, M. Hsieh, M. Grover, J. Champion

10:50 COLL 719. Developing a data set of experimental results to support model development for simulations of the CnEm nonionic surfactants. **W.C. Swope**, M. Johnston, A. Duff, J. McDonagh, R. Anderson, G. Alva, A. Tek

11:10 COLL 720. Heads up: Molecular interactions between surfactant head groups at an oil-water interface. **R. Ciszewski**, G. Richmond

11:30 COLL 721. Poly: Gone! Desorption of polymer upon formation of bulk micelles. **B. Schabes**, E. Hopkins, G. Richmond

Section C

Orange County Convention Center
West Hall B4 - Theater 3

Basic Research in Colloids, Surfactants & Interfaces

Colloids Functionalized with Soft Matter

R. Nagarajan, *Organizer*
J. E. Smith, *Presiding*

8:30 COLL 722. Antimicrobial peptide-modified transition metal dichalcogenide nanosheets for the optical sensing of bacteria. **T. Kang**, L. Sin, I. Hwang, S. Jeon, C. Choi, J. Kim

8:50 COLL 723. Controlled fabrication of multifunctional clay/calixarene nanocomposite through ultra-fast photoinduced thiol-yne addition for an efficient heavy metal removal from industrial waste water. **K. Jlassi**, K. Eid, M. H. Sliem, A. Abdullah

9:10 COLL 724. Digital microfluidic applications of polymer-encapsulated quantum dot nanofluids. **N.P. Godman**, U.N. Tohgha, E.L. Alvino, S.T. Iacono

9:30 COLL 725. Structured DNA and aptamer interactions with gold nanoparticle surfaces. **J.E. Smith**

10:00 COLL 726. Shape-control, fluorescence functionality, and interfacial assemblies of polymer nanoparticles. **N.R. Visaveliya**

10:20 COLL 727. Phase transferable polymer encapsulated metallic nanoparticles. **M. Confer**, S. Street

10:40 COLL 728. Antifouling zwitterionic quantum dot surface chemistry: Impact on intracellular diffusion. **M. Debayle**, E. Balloul, F. Dembele, X. Xu, M. Hanafi, C. Monzel, M. Coppey, M. Dahan, A. Fragola, T. Pons, N. Lequeux

11:00 COLL 729. Polymeric coating of individual lead halide perovskite microcrystals in polar solvents. **S. Cho**, S. Yun

Section D

Orange County Convention Center
West Hall B4 - Theater 4

Basic Research in Colloids, Surfactants & Interfaces

Molecular & Colloidal Assemblies

R. Nagarajan, *Organizer*
J. J. Richardson, *Presiding*

8:30 COLL 730. Low temperature, polarization resolved, magneto-photoluminescence spectroscopy of individual colloidal lead salt quantum dots. **Y. Kim**, Z. Hu, A. Singh, S. Goupalov, J.A. Hollingsworth, H. Htoon

8:50 COLL 731. Formation and controlled growth of imine-linked covalent organic framework nanoparticles. **R.L. Li**, N. Flanders, A.M. Evans, W. Ji, I. Castano, N.C. Gianneschi, L.X. Chen, W.R. Dichtel

9:10 COLL 732. Nano-bionics: Assembly of functional metal-organic nanomaterials inside plants. **J.J. Richardson**, K. Liang

9:40 COLL 733. Zwitterion/thiol copolymers for antifouling. **S. Lteif**, J.B. Schlenoff

10:00 COLL 734. Probing synthesis, bandgaps and stability of a family of Cs2AgMX6 lead-free double perovskite nanocrystals (M = Sb, Bi, In; X = Cl, Br). **J. Dahl**, E. Chan, P. Alivisatos

10:20 COLL 735. Quantitative understanding of aggregation-induced emission with polarized resonance synchronous spectroscopy and polarized stokes'-shifted fluorescence spectroscopy. **J. Xu**, D. Zhang

10:40 COLL 736. Nonphotochemical laser-induced nucleation of a "dense liquid droplet" of aqueous glycine formed by optical gradient forces. **O. Gowayed**, J.J. Fuentes Rivera, T. Tasnim, J. Aber, B.A. Garetz

11:00 COLL 737. Iron sulfide supraparticles as artificial viruses for gene and gene editing therapies. **E.S. Turali-Emre**, A.E. Emre, N. Kotov

11:20 COLL 738. Self-recognition introduced by host-guest complexation in charge regulated self-assembly of gamma-cyclodextrin derivative. **J. Chen**, **J. Luo**, **T. Liu**

Section E

Orange County Convention Center
West Hall B4 - Theater 5

Nanomaterials

Metallic & Semicondcuting Nanomaterials: Synthesis & Properties

J. A. Hollingsworth, R. Nagarajan, *Organizers*
Y. Kim, *Presiding*

8:30 COLL 739. One-dimensional carrier confinement in excitonic nanoshells. **L. Royo Romero**, M. Zamkov

8:50 COLL 740. Biexciton dynamics in CdS/CdSe/CdS nanoshell quantum dots. **D. Porotnikov**, P. Moroz, M. Zamkov

9:10 COLL 741. Metal amidinate precursors for general solution-phase synthesis of intermetallic nanocrystals. **A. McGrath**, F. Ronning, S. Ivanov

9:30 COLL 742. Intrinsic exciton photophysics of PbS nanocrystals revealed by low-temperature single dot spectroscopy. **Z. Hu**, Y. Kim, S. Krishnamurthy, J.R. McBride, S.J. Rosenthal, J.A. Hollingsworth, H. Htoon

9:50 COLL 743. Structural transformations of functional nanoparticles. **Z. Quan**

10:10 COLL 744. Crystal structure and optical properties of the smallest piece of metallic gold: Faradaurate-279. **N. Sakthivel**, S. Theivendran, V. Ganeshraj, M. Stener, L. Sementa, A. Fortunelli, R. Guda, A.G. Oliver, A. Antonysamy

10:30 COLL 745. Optical spectroscopy of plasmonic aerosols. **J. Geldmeier**, P. Johns, N. Greybush, J. Naciri, J. Fontana

Section F

Orange County Convention Center
West Hall B4 - Theater 6

Surface Chemistry

Nanomaterials

S. L. Tait, *Organizer*
M. Ganguly, I. Schweigert, *Presiding*

8:30 COLL 746. Controlled intra-particulate surface cross-linking synthesis of multi-color carbon dots from a single source. **I. Srivastava**, T. Kampert, H. Rezvani, P. Fathi, D. Pan

8:50 COLL 747. Single-step hybrid nanocoating on contact lenses to face associated conditions and discomfort. **J. Hoyo**, K. Ivanova, E. Guaus, T. Tzanov

9:10 COLL 748. Direct thermodynamic investigation of CdSe quantum dots & their ligand exchange interactions using isothermal titration calorimetry. **M.Y. Gee**, A.B. Greytak

9:30 COLL 749. Iron-oxide nanocomposites for ice nucleation and environmental remediation. **M. Ganguly**, P.A. Ariya

9:50 Intermission.

10:00 COLL 750. Use of oleophilic magnetite nanoparticles as efficient sorbent for water contaminants. **M. Sarcletti**, D. Vivod, T. Luchs, T. Rejek, L. Portilla, A. Hirsch, D. Zahn, M. Halik

10:20 COLL 751. Potent method of extracting glyphosate from water using superparamagnetic nanoparticles. **H. Park**, M. Sarcletti, M. Halik

10:40 COLL 752. Preparation of pure and decorated metal oxide materials for energy-environmental applications using novel physical deposition methods and their characterization. **D. Paradiso**, J.Z. Larese

11:00 COLL 753. Surface reactions of atmospheric species on amorphous zirconium hydroxide and hydroxylated titanium oxide from cluster models. **I. Schweigert**

Section G

Orange County Convention Center
West Hall B4 - Theater 7

Colloidal Nanoparticle Synthesis & Assembly

O. Chen, H. Fan, T. Li, *Organizers*
F. Bai, *Organizer, Presiding*
Y. Jiang, *Presiding*

8:30 COLL 754. Orientation of CdSe nanoplatelets for advanced magneto-optical characterization. **A. Brumberg**, S. Harvey, B. Diroll, B. Lee, S. Crooker, R. Schaller

8:50 COLL 755. High-temperature crystallization of nanocrystals into three-dimensional superlattices. **L. Wu**, M. Cargnello, C. Tassone

9:10 COLL 756. Self-assembling of neutral and charged nanoparticles into core-shell nanohybrids with size control. **K. Hussain**, P. Yi

9:30 COLL 757. Probing crystal growth of gibbsite and boehmite nanocrystals. **X. Zhang**, Y. Chen, J. Hu, N. Washton, C. Pearce, K. Page, Z. Wang, J.J. De Yoreo, S.B. Clark, K. Rosso

9:50 COLL 758. Reversible aggregation of covalently cross-linked gold nanocrystals by linker oxidation. **Z. Luan**, A. Abelson, M. Law

10:10 Intermission.

10:20 COLL 759. Base side of noble-metal clusters: An efficient route to exceptional captamine-protected gold, $Au_n(DMAET)_p$, n = 25 - 144. **M. Hoque**, D.M. Black, K. Mayer, R.L. Whetten

10:40 COLL 760. Coupling radio- and photo-luminescent emitters in crystalline colloidal arrays. M. Burdette, I. Bandera, G. Gray, **S.H. Foulger**

11:00 COLL 761. Towards precise control of colloidal plasmonic nanoparticles: Synthesis and surface engineering. **G. Chen**, R. Gallagher, X. Zhang

11:20 COLL 762. Effect of pH on the synthesis of monodispersed gold bipyramids with finely tunable LSPR peaks. **X. Zhang**, R. Gallagher, D. Lawrence, G. Chen

11:40 COLL 763. Circulary polarized light-driven assembly of gold nanostructures and their chirality measure. **J. Kim**, J. Yeom, H. Calcaterra, G. Zhao, P. Zhang, N. Kotov

Section H

Orange County Convention Center
West Hall B4 - Theater 8

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

8:30 COLL 764. Investigating the physical presence of vitamin E in lipid membranes. **M. DiPasquale**, M.H. Nguyen, B. Rickeard, D. Marquardt

8:50 COLL 765. Hybrid polymer/lipid vesicles made from amphiphilic block copolymer poly(dimethylsiloxane)-b-poly(ethylene oxide) as cell-membrane-mimic: Formation, structure, and membrane properties. **M. Fauquignon**, E. Ibarboure, M. Schmutz, A. Brulet, J. Le Meins

9:10 COLL 766. Molecular thermodynamics of receptor competition for uptake by endocytosis. **A. DeGroot**, C. Zhao, C. Hayden, S. Mihelic, M. LaMonica, J. Stachowiak

9:30 COLL 767. Compartments and crowding: Biophysical features of living cells. **W. Su**, D.L. Gettel, M. Chabanon, P. Rangamani, A.N. Parikh

9:50 COLL 768. Activation of the EphA2 receptor tyrosine kinase by a conditional transmembrane peptide. **F.N. Barrera**

10:15 COLL 769. Direct cytosolic delivery of macromolecules via connectosomes. **C. Zhao**, A. Meriwether, H. Ali, M. Wu, J. Stachowiak

10:35 COLL 770. Supported lipid bilayers of *Escherichia coli* extracted lipids and their substrate and calcium dependence. **Y. Kakimoto**, R. Tero

10:55 COLL 771. Lipids alter rhodopsin function via solvent-like and ligand-like interactions. **L. Salas**, N. Leioatts, A. Grossfield

11:15 COLL 772. Cholestrol-induced microdomains formation in completely miscible lipid bilayers which promotes the fusion of proteoliposome. **M.W. Goh**, A. Hirano-Iwata, M. Niwano, R. Tero

11:35 COLL 773. Investigating interactions and stability of bacteriorhodopsin upon entrapment in sol-gel derived porous materials. **S. Gakhar**, K. Johnson, C. Tan, S. Risbud, M.L. Longo

11:55 COLL 774. Sizes and yields of giant unilamellar vesicles using cellulose paper and cotton fabric. **J. Pazzi**, M. Xu, A. Subramaniam

Section I

Orange County Convention Center
West Hall B4 - Theater 9

Surface Chemistry of Colloidal Nanocrystals

J. Chen, S. Neretina, *Organizers*
D. Qin, X. Xia, *Organizers, Presiding*

8:30 COLL 775. Multi-coordinating polymer ligand for the functionalization of semiconductor, metal, and metal-oxide nanoparticles. **L. Du**, W. Wang, C. Zhang, Z. Jin, G. Palui, H.M. Mattoussi

8:50 COLL 776. Interchange of L-, Z-, and bound-ion-pair X-type ligation on cadmium selenide quantum belts. **Y. Yao**, W.E. Buhro

9:10 COLL 777. Controlled synthesis of single and binary alkanethiolate-capped Pd nanoparticle catalysts for understanding the isolated effects of surface ligands. **Y. Shon**

9:30 COLL 778. Molecular dynamics simulations of metastable peptide crystals: A cross beta transformation and selective adsorption of charged gold nanoparticles. **P. Rehak**, P. Kral

9:50 Intermission.

10:05 COLL 779. Ligand exchange on ternary sodium bismuth dichalcogenide using multidentate ligands. **A.M. Medina-Gonzalez**, B.A. Rosales, J. Vela

10:25 COLL 780. Ligand design for direct optical (254nm, 365nm and 405 nm) and e-beam lithography of functional all-inorganic nanomaterials. **Y. Wang**, J. Pan, D. Talapin

10:45 COLL 781. Photoligation with lipoic acid ligands is an effective strategy for preparing biocompatible gold colloids. **Z. Jin**, Y. Sugiyama, C. Zhang, L. Du, H.M. Mattoussi

11:05 COLL 782. Basal plane functionalization of group V and VI layered transition metal dichalcogenides. **A. Jawaid**, R.A. Vaia

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