

PROGRAM SUMMARY

Division of Colloid & Surface Chemistry

COLL

R. Nagarajan, Program Chair

Moscone Center	S	M	Tu	W	Th
Basic Research in Colloids, Surfactants & Nanomaterials	AE			D	A
Applied Biosensing Based on Functional Colloids <i>AMTSP</i>	D	D	A	A	
Biomembrane Synthesis, Structure, Mechanics & Dynamics	D	D	A	D	A
Molecular Surface Science, Nanomaterials & Catalysis: Symposium in Honor of Gabor Somorjai at 80 **	D	D	A	D	
Coacervation: Physics, Chemistry & Biology <i>AMTSP</i>	D	D			
Chemistry & Physics of Tribology <i>AMTSP</i>	D		A	D	
Colloidal Nanoparticle Synthesis & Assembly	DE	D	A	D	A
Interfacial Phenomena & the Oil-Water Interface <i>AMTSP</i>	DE	D			
Nanoscale Chemical Patterning & Characterization	DE	D			
Deposition & Etching of Nanostructures ** <i>AMTSP</i>	DE		D		
Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion <i>AMTSP</i>	P	D	A		
Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment	E	D	A	D	A
Fundamental Research in Colloids, Surfaces & Nanomaterials	E				
ACS Award in Colloid Chemistry: Symposium in Honor of Nicholas A. Kotov		D	A		
Sci-Mix		E			
ACS Award for Research at an Undergraduate Institution: Symposium in Honor of Maria Hepel			A		
ACS Award Lectures **			P		
Mineral-Water Interface Chemistry <i>(GEOC)</i>	D	A	D	AE	

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Moscone Center	S	M	Tu	W	Th
Elucidation of Mechanisms & Kinetics on Surfaces <i>(CATL)</i>	D	D	D	D	D
Janus Particles: Synthesis, Characterization & Applications <i>(PMSE)</i>	D	D			
ACS Award in Surface Chemistry: Symposium in Honor of Cynthia M. Friend <i>(CATL)</i>	D	D			
LGBT Graduate & Postdoctoral Student Chemistry Research Symposium <i>(PROF)</i>	D	D			
Separation of Macromolecules & Particulates <i>(POLY)</i>	D				
Synthesis of Catalysts by Nontraditional Methods <i>(CATL)</i>	D				
Holy Grails in Chemistry: Celebrating the 50th Anniversary of <i>Accounts of Chemical Research Journal</i> <i>(PRES)</i>	PE				
Functional Lignocellulosics & Nanotechnology <i>(CELL)</i>		D	D	D	D
Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis <i>(CATL)</i>		D	D	D	
Science for a Sustainable Energy Future <i>(PRES)</i>		D			
ACS Award in Industrial Chemistry: Symposium in Honor of Jane Frommer <i>(I&EC)</i>		P			
Chemical Principles of Environmental, Cellular & Organismal Nanotoxicology <i>(ENVR)</i>					AE
Biobased Gels & Porous Materials <i>(CELL)</i>				D	D
Deposition & Etching of Nanostructures <i>(INOR)</i>				D	
Evolving Nanoparticle Reactivity Throughout Nucleation, Growth & Dissolution <i>(GEOC)</i>				D	

Cosponsored symposium with primary organizer shown in parentheses; located with primary organizer.

******Primary organizer of a cosponsored symposium.

AMTSP: Advanced Materials, Technologies, Systems & Processes

A = AM AE = AM/EVE P = PM D = AM/PM

E = EVE DE = AM/PM/EVE PE = PM/EVE

COLL

Division of Colloid and Surface Chemistry

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OTHER SYMPOSIA OF INTEREST:

ACS Award in Surface Chemistry: Symposium in honor of Cynthia M. Friend (see *CATL*, Sun, Mon)

Chemical Principles of Environmental, Cellular & Organismal Nanotoxicology (see *ENVR*, Wed)

Deposition & Etching of Nanostructures (see *INOR*, Wed)

Janus Particles: Synthesis, Characterization & Applications (see *PMSE*, Sun, Mon)

Molecular Engineering of Peptide Assembly (see *PMSE*, Mon, Tue, Wed)

Plasmonic Nanomaterials: From Physical Chemistry Fundamentals to Societal Impacts (see *PHYS*, Wed, Thu)

SOCIAL EVENTS:

Social Hour with Poster Session, 6:00 PM: Sun

Luncheon, 12:00 PM: Tue

BUSINESS MEETINGS:

COLL Program & Executive Committee Meeting, 4:00 PM: Sat

Business Meeting, 5:30 PM: Sun

SUNDAY MORNING

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

K. Morigaki, D. Y. Sasaki, *Presiding*

8:30 COLL 1. Rationally designed peptoids insert into edge and face of bicelle structure. H. Najafi, S.L. Servoss

8:50 COLL 2. Transport across droplet interface lipid bilayers via a pH gradient. S. Dixit, B. Guo, B. Tasseff, G.W. Faris

9:15 COLL 3. Second harmonic generation studies of water-soluble peptoids adsorbed to phospholipid membranes. G.Y. Stokes, A.A. Fuller, A. Calkins, J. Rangel, M.R. Landry

9:40 COLL 4. Lipid structure, lateral order and inter-membrane forces. U. Raviv, L. Fink

10:05 COLL 5. Probing model membrane local dynamics. T. Gutberlet, M. Trapp, J. Peters, D. Posselt

10:30 COLL 6. Tubulin on biomimetic mitochondrial membranes: Structural features and identification of lipid binding domain. D.P. Hoogerheide, S. Noskov, D. Jacobs, H. Nanda, T.K. Rostovtseva, S.M. Bezrukov

10:55 COLL 7. Cell-free expression of biologically active integral membrane protein. A. Vaish, C. Chen, S. Guo

11:20 COLL 8. Determining the mRNA nanoparticle structure using SANS and SAXS. Y. Xia, C.J. Bowerman, J. Chan, C. Clemente, A. Esposito, E. Miracco, B. Kangarlou, M. Nieh, E. Cheung, O. Almarsson

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly**Nanoparticle Synthesis**

H. Htoon, Y. Sun, S. Wu, *Organizers*

H. Fan, *Organizer, Presiding*

H. Zhang, *Presiding*

8:30 COLL 9. How is the metal precursor reduced during a synthesis of colloidal nanocrystals? Y. Xia

9:00 COLL 10. Crystal phase-controlled synthesis of novel noble metal nanomaterials. H. Zhang

9:30 COLL 11. Synthesis of branched and polyhedral Pd-Cu nanostructures by seed-mediated co-reduction. M. Kunz, S.E. Skrabalak

9:50 COLL 12. Solvent effect on ligand-metal interactions in Pd nanoparticle synthesis. W. Li, S. Ivanov, S. Mozaffari, A.M. Karim

10:10 COLL 13. Colloidal synthesis of anisotropic noble metal nanostructures. Q. Zhang

10:30 COLL 14. Salt-triggered deposition of polymer-coated noble metal nanoparticles on solid surfaces. B. De Geest

10:50 COLL 15. Exotic syntheses of supported metal nanoparticles via metal-in-Li solutions. T. Xu

11:10 COLL 16. Seeded growth of catalytically active copper-based nanostructures. J. Chen

11:40 COLL 17. Designer noble metal nanostructures: Controlled synthesis and beyond. Y. Yin

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80**Surface Science is Alive & Well**

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

8:30 COLL 18. Surface science meets homogeneous catalysis: Cooperative properties of electrophilic organometallic ensembles. T.J. Marks

9:00 COLL 19. First-principles, microkinetic modeling, and experiments for reaction mechanisms and improved catalysts. M. Mavrikakis

9:30 COLL 20. Sum frequency generation microscopy of surfaces. S. Baldelli

10:00 COLL 21. Surface spectroscopy and surface microscopy of catalytic processes: From model to technological materials, from UHV to *operando* conditions. G. Rupprechter, C. Rameshan, K. Foelttinger, Y. Suchorski

10:30 COLL 22. Vinyl acetate formation pathways and selectivity on model metal and alloy catalyst surfaces. W.T. Tysoe

11:00 COLL 23. Surface science for the 21st century. M. Salmeron

Section D

Mosccone Center
2008

Chemistry & Physics of Tribology

Tribology Perspectives & Tribochemistry

F. Mangolini, M. Ruths, *Organizers, Presiding*

8:30 COLL 24. Lowering friction while saving the world: New approaches to lubrication. N.D. Spencer

9:05 COLL 25. Thermal and shear effects in boundary film formation. W.T. Tysoe

9:40 COLL 26. Measuring atomic wear of graphene using local stress and heat. S. Raghuraman, M.B. Elinski, J.D. Batteas, J. Felts

10:00 COLL 27. Tribochemistry of GaN, a surprisingly wear resistant semiconductor. G. Zeng, X. Yang, B.E. Koel, D. Borovac, C. Tan, N. Tansu, B. Krick

10:20 COLL 28. Optimization of a ReaxFF reactive force field for modeling tribochemical reactions of Cu-S and Cu-thiol/alkoxy systems. J. Yeon, W.T. Tysoe, A. Martini

10:40 COLL 29. Tribochemical aspects of mechanical mixing in tribological contacts. M. Dienwiebel, P. Stoyanov, P. Romero, R. Merz, P. Stemmer, M. Moseler

11:00 COLL 30. Effect of hydrogen and oxygen partial pressure on the tribochemistry of silicon oxide-containing hydrogenated amorphous carbon. F. Mangolini, K. Koshigan, M.H. Van Benthem, J. Ohlhausen, J.B. McClimon, J. Hilbert, J. Fontaine, R. Carpick

11:20 COLL 31. Wear mechanisms and regime transitions for self-mated silicon nitride lubricated by ionic liquid/water mixtures. A. Arcifa, A. Rossi, N.D. Spencer

11:40 COLL 32. Mechanochemistry at sliding interfaces – Tribo-polymerization of adsorbed molecules upon mechanical shear. S.H. Kim

Section E

Mosccone Center
2010

Coacervation: Physics, Chemistry & Biology

R. Stewart, *Organizer*

P.L. Dubin, *Organizer, Presiding*

8:30 COLL 33. RNA-based complex coacervates. C.D. Keating

9:10 COLL 34. Spanning length scales in polymeric complex coacervate self-assembly. T.K. Lytle, J. Madinya, C.E. Sing

9:40 COLL 35. Sequence-encoded phase behavior of intrinsically disordered proteins. R.V. Pappu

10:10 COLL 36. Asymmetric segregation of P-granules by position dependent phase separation. F. Julicher

10:40 COLL 37. Intra- and intermolecular electrostatic complexes of cationic antimicrobial peptides with their anionic propeptides. N. Gomes de Oliveira Júnior, O. Franco, R. de Vries

11:10 COLL 38. Intrinsic disorder and overcrowding. V.N. Uversky

Section F

Mosccone Center
2012

Applied Biosensing Based on Functional Colloids

R. Alvarez Puebla, L. Liz Marzan, J. Sagalés, G. F. Strouse, *Organizers*

W. Parak, *Organizer, Presiding*

8:30 COLL 39. Composite porous colloids for SERS-based biosensing. L. Liz Marzan

9:00 COLL 40. Functionalizing various metallic nanostructures with highly effective multi-coordinating polymers. W. Wang, A.K. Kapur, X. Ji, H.M. Mattoussi

9:30 COLL 41. Towards SERS-enabled diagnostics: Quantitative detection of glucose and other biomarkers. A. Henry

9:50 COLL 42. *In-situ* SERS detection at picoliter scale using substrate-less Ag nanoparticle-based liquid marbles. X. Ling

10:20 COLL 43. Low frequency vibrational mode surface enhanced Raman spectroscopy characterization of gold interactions with aqueous halides. M. Chan, W. Leng, P.J. Vikesland

10:40 COLL 44. High throughput optofluidic Surface-Enhanced Raman Spectroscopy (SERS) interrogation: Proof of concept via lectin detection of cancerous cells. M. Willner, K. McMillan, M. Zagnoni, D. Graham, P.J. Vikesland

Section G

Mosccone Center
2001

Interfacial Phenomena & the Oil-Water Interface

Financially supported by The Dow Chemical Company

C. Acevedo, C. J. Tucker, *Organizers*

C. E. Mohler, *Organizer, Presiding*

8:30 COLL 45. Nanoengineering water-in-diesel/biodiesel microemulsion interfaces to minimise particulate and NOx emissions from diesel engines to minimise atmospheric pollution. P.A. Sermon

8:50 COLL 46. *Ulloborus walckenaerius* bioinspired attachable, self-standing, nanofibrous membrane for versatile use in oil-water separation. M. Tenjimbayashi, K. Sasaki, J. Abe, S. Shiratori

9:10 COLL 47. Interfacial interactions of granular particles with floating crude oil under different granular flow regimes. D. Boglaenko, B. Tansel

9:30 COLL 48. Fabricating reservoir micromodels by *in situ* grown calcium carbonate nanocrystals in microfluidic channels. W. Wang, S. Chang

9:50 COLL 49. Effects of confinement and composition on oil/water interface in nanopore environment. A. Alizadehmojarad, L. Vukovic

10:10 COLL 50. Impact of microemulsions on mobilization, emulsification, and solubilization of oil in heterogeneous rocks. T. Qin, L. Goual

10:30 COLL 51. Nanoengineering at the oil-water interface to maximize hydrocarbon production. P.A. Sermon, G. Georgiades

10:50 COLL 52. pH-responsive polymer coated nanoparticles for controlled emulsification of heavy oil. L. Qi, C. Song, G.J. Hirasaki, R. Verduzco

11:10 COLL 53. Surfactant Enhanced Oil Recovery (EOR): Role of reservoir wettability and oil-water interfacial tension in designing efficient surfactant systems. C. Acevedo, W. Yu, P.D. Patil

11:30 COLL 54. Formulation and utility of microemulsions in cleaning applications. C.J. Tucker, M.H. Keefe, K. Harris

Section H

Mosccone Center
2003

Nanoscale Chemical Patterning & Characterization

S. A. Claridge, *Organizer*

W. Liao, *Organizer, Presiding*

8:30 COLL 55. Biodegradable and biocompatible regular nanopatterned surfaces for selective cell enrichment. G. Sicilia, A. Grabowska, I. Notingher, M. Alexander, M. Marlow

8:50 COLL 56. Tailoring 5–10 nm chemically orthogonal surface patterns on layered materials using sitting phases of polymerizable amphiphiles. J. Bang, K.K. Rupp, S.R. Russell, S.W. Choong, T.C. Davis, T. Hayes, A.G. Porter, J.T. Brooks, S.A. Claridge

9:10 COLL 57. Artificial membranes composed of fluid and polymerizable lipids: Fractional polymerization produces nanoscale domains with retained fluidity and enhanced stability. S.S. Saavedra

9:40 COLL 58. Chemical lift-off lithography and sensors. W. Liao

10:10 COLL 59. Patterning arrays of geometrically complex nanostructures on planar surfaces. P.S. Cremer, Z. Zhao, Y. Cai

10:40 COLL 60. Self-assembly of proteins into periodic nanostructures through spatially-confined nanofluids. J. Li

11:10 COLL 61. Modified soft lithographic approach for Surface-Enhanced Infrared Spectroscopy (SEIRA) substrates and their application to live cell monitoring. V. Colvin, N. Taheri, A. Bohoul

11:40 COLL 62. Characterizing and manipulating mercaptoalkanoic acid molecular ruler multilayers using scanning probe lithography. J.E. Neuman, A.M. Patron, C.P. Causey, T.J. Mullen

Section I

Mosccone Center
2005

Basic Research in Colloids, Surfactants & Nanomaterials

Colloids

R. Nagarajan, *Organizer*

U. Scheeler, *Presiding*

8:30 COLL 63. Counterion-specific counterion condensation. U. Scheeler

9:00 COLL 64. Carbonate rock wettability investigated with finer spatial resolution. O.B. Wani, C. Lai, M. Almahri, M. Chiesa, S. Al Hassan

9:20 COLL 65. Light scattered by hedgehog particles. J. Bahng, D. Montjoy, W. Chang, S. Link, N. Kotov

9:40 COLL 66. Cross-linked cationic diblock copolymer worms are superflocculants for micrometer-sized silica particles. N. Penfold, Y. Ning, P. Verstraete, J. Smets, S.P. Armes

10:00 COLL 67. Spray coating of colloidal and organic layers. W. Ohm, P. Zhang, S. Yu, A. Plech, D. Soderberg, S. Roth

10:20 COLL 68. Elucidating the reactivity and solution dynamics of redox active polymers and colloids. M. Burgess, E. Montoto, K. Hernandez-Burgos, J. Schuh, T. Wei, N. Gavvalapalli, J. Moore, J. Lewis, R. Ewoldt, J. Rodriguez Lopez

10:40 COLL 69. Particle zeta potentials remain finite in saturated salt solutions. A. Garg, C. Cartier, K.J. Bishop, D. Velegol

11:20 COLL 70. Issue of interchangeable use of reactivity assessment assays for nanoparticle colloids in liquid solution. X. Bi, P.K. Westerhoff

11:40 COLL 71. Propagation and separation of charged colloids by cylindrical gel electrophoresis. D.A. Bikos, T.G. Mason

12:00 COLL 72. Morphology and properties of fibers obtained by emulsion electrospinning. A. Samanta

Section J

Mosccone Center
2007

Deposition & Etching of Nanostructures

Cosponsored by INOR

L. McElwee-White, A. V. Walker, *Organizers*

H. Fairbrother, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 COLL 73. New strategies for selective deposition of nanoscale materials. F. Minaye Hashemi, D. Bobb-Semple, S.F. Bent

9:05 COLL 74. Using surface chemistry to direct the morphology of thin films and nanoobjects of energy materials. A.V. Walker

9:35 COLL 75. Laser-assisted focused electron beam induced synthesis: Photothermal enhancements to athermal electron beam induced reactions. P.D. Rack

10:05 Intermission.

10:20 COLL 76. Time is of the essence: Using a fourth dimension to improve chemical vapor deposition. H. Pedersen

10:50 COLL 77. Real-time XPS monitoring of atomic layer deposition of HfO_2 on Si surfaces. P. Shayesteh, J. Gallet, F. Bournel, J. Schnadt

11:10 COLL 78. Directed deposition and etching of functional nanostructures using electron beam and plasma irradiation. C.J. Lobo

Mineral-Water Interface Chemistry

A Tribute to Glenn Waychunas

Sponsored by GEOC, Cosponsored by COLL and ENVR

LGBT Graduate & Postdoctoral Student Chemistry Research Symposium

Emerging Applications in Inorganic Chemistry: Energy, Materials, Catalysis, & Spectroscopy

Sponsored by PROFI, Cosponsored by ANYL⁺, BIOL⁺, CHED, CMA, COLL, COMP, CWD, ENVR, INOR⁺, MEDI, MPPG, ORGN, PHYS, PMSE⁺, POLY, PRES⁺ and WCC

ACS Award in Surface Chemistry: Symposium in honor of Cynthia M. Friend

Honoring the Contribution to Single Crystal Catalysis

Sponsored by CATL, Cosponsored by COLL and WCC

Separation of Macromolecules & Particulates

Sponsored by POLY, Cosponsored by ANYL, COLL and PMSE

Janus Particles: Synthesis, Characterization & Applications

Sponsored by PMSE, Cosponsored by COLL and MPPG⁺

Synthesis of Catalysts by Non-Traditional Methods

Nanoparticle Catalysts

Sponsored by CATL, Cosponsored by COLL and INOR

Elucidation of Mechanisms & Kinetics on Surfaces

Theory

Sponsored by CATL, Cosponsored by COLL and ENVR

SUNDAY AFTERNOON

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

M. L. Longo, A. B. Subramaniam, *Presiding*

2:00 COLL 79. Lipid non-lamellar phases at the solid/liquid interface - structure and dynamics. T. Nylander, O. Soltwedel, M. Kaneva, C. Hirst, J. Holdaway, M. Yanez Arteta, M. Wadsater, J. Barauskas, H. Frielinghaus, O. Holderer

2:25 COLL 80. Stimulus-responsive behavior of giant vesicles consisting of amphiphilic diblock copolymers. E. Yoshida

2:50 COLL 81. Selective blood vessel deletion using liposomes: Studying the effect of liposome composition on *in vivo* behavior. A. Kros

3:15 COLL 82. Physical clotting of blood cells using associating biopolymers as the connective glue: An investigation into the mechanism using optical microscopy. S.R. Raghavan

3:40 COLL 83. Elastic and viscous properties of lipid bilayers: Application of neutron spin echo spectroscopy. M. Nagao, E.G. Kelley, R. Ashkar, R. Bradbury, P. Butler

4:05 COLL 84. Kinetic pathways of self-assembled systems by time-resolved small-angle scattering techniques. R. Lund

4:30 COLL 85. Neutron and X-ray scattering approaches for interdisciplinary structural biology. T. Forsyth

4:55 COLL 86. Opening the SANS toolbox for studying mRNA nanoparticle structure. C.J. Bowerman, Y. Xia, J. Chan, C. Clemente, A. Esposito, E. Miracco, B. Kangarou, M. Nieh, E. Cheung, O. Almarsson

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

Y. Sun, S. Wu, *Organizers*

H. Fan, H. Htoon, *Organizers, Presiding*

2:00 COLL 87. Silicon nanocrystal assemblies. B.A. Korgel

2:30 COLL 88. Induction and microwave heating in syntheses of CdSe quantum dots: Effects of extreme high heating rate on their nucleation and growth kinetics. H. Luo, B.A. Kebede, E.J. McLaurin, V. Chikan

2:50 COLL 89. Enhanced emission of nanocrystal solids featuring slowly diffusive excitons. N.N. Kholmicheva, M. Zamkov

3:10 COLL 90. Detecting material state change in surface coated tensile samples using ultrasml CdSe quantum dots. T. Frecker, C. Brubaker, I. Njoroge, G. Jennings, D. Adams, S.J. Rosenthal

3:30 COLL 91. Ligand-induced freeze of gold nanostars and their SERS activities. X. Meng, C. Jiang

3:50 COLL 92. Chiral inorganic nanostructures. N. Kotov

4:20 COLL 93. Organic nanophotonic materials and devices. Y. Zhao

4:50 COLL 94. Study of Au nanoparticles self-assembly by in-situ transmission electron microscopy. Y. Liu, Y. Sun, X. Lin, T. Rajh

5:20 COLL 95. Synthesis and assembly of plasmonic metal oxide nanocrystals. D.J. Milliron

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Catalyst Design

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

2:00 COLL 96. Dynamic evolution of catalytic surfaces. C.M. Friend

2:30 COLL 97. Metal nanoparticle catalysts based on classically immiscible and metastable alloys. S.M. Humphrey, G. Henkelman, P. Kunal, H. Li, H. Guo, G.W. Piburn

3:00 COLL 98. Catalysis on singly dispersed bimetallic sites. F. Tao

3:30 COLL 99. Ordered bimetallic catalysts for selective hydrogenation and dehydrogenation reactions. W. Huang

4:00 COLL 100. Ideal catalysts beyond single crystals: MOFs with metal oxide-like nodes. D. Yang, V. Bernales, C.J. Cramer, O.K. Farha, J.T. Hupp, L. Gagliardi, B.C. Gates

4:30 COLL 101. Catalyst synthesis by atomic layer deposition. P.C. Stair

5:00 COLL 102. New nanostructures for increased selectivity and stability in catalysis. F. Zaera

Section D

Moscone Center
2008

Chemistry & Physics of Tribology

Theoretical & Computational Advances in Tribology

F. Mangolini, *Organizer*

M. Ruths, *Organizer, Presiding*

C. M. Mate, *Presiding*

2:00 COLL 103. Scale dependence of friction and contact of nanometer to millimeter radius tips. T.A. Sharp, J. Monti, L. Pastewka, M.O. Robbins

2:35 COLL 104. Limits of Lifshitz theory. O. Siles-Brugge, C. Hunter, G.J. Leggett, N.H. Williams

2:55 COLL 105. Effect of load on current across gold-graphite nanocontacts. A. Martini, X. Hu, V. Zade, H. Kang, M. Lee

3:30 COLL 106. Examination of DLC adhesion and wear using MD and in-situ nanoindentation. J.D. Schall, R. Bernal, P. Chen, P. Tsai, Y. Jeng, R. Carpick, J.A. Harrison

3:50 COLL 107. Nonequilibrium molecular dynamics simulations of organic friction modifiers. J. Ewen, C. Gattinoni, H. Spikes, N. Morgan, D. Dini

4:10 COLL 108. Molecular dynamics simulations of multiply alkylated cyclopentane-based lubricant oils. V. Oklejas, P.P. Frantz, S.V. Didziulis

4:30 COLL 109. Dynamics and thermodynamics of lubricants in flow: A molecular and tribological approach. Y. Guo, L. di Mare, J. Wong

4:50 COLL 110. Withdrawn.

Section E

Moscone Center
2010

Coacervation: Physics, Chemistry & Biology

P. L. Dubin, R. Stewart, *Organizers*

Y. Wang, *Presiding*

2:00 COLL 111. Entropy the assembler (of polyelectrolytes). J.B. Schlenoff

2:30 COLL 112. Simple coacervation of polyguanidiniums and organic polyphosphates. R. Stewart, J.P. Jones, G.M. Weerasakare, I. Song

3:00 COLL 113. Exploring the coacervation/precipitation interface. P.L. Dubin, F. Cornet, A.J. Malanowski

3:30 COLL 114. Material dynamics in complex coacervates. S.L. Perry

4:00 COLL 115. Complex coacervation as a dynamic reservoir of intrinsically disordered proteins. S. Han

4:30 COLL 116. Coacervates from biopolymers for cartilage tissue regeneration. Ö. Karabiyik Acar, A. Kayitmazer, G. Kose

Section F

Moscone Center
2012

Applied Biosensing Based on Functional Colloids

R. Alvarez Puebla, L. Liz Marzan, W. Parak, J. Sagalés, *Organizers*

G. F. Strouse, *Organizer, Presiding*

2:00 COLL 117. Plasmonic supercrystals for SERS detection. R. Alvarez Puebla

2:30 COLL 118. Nanoparticles and stem cells, a powerful combination? W. Parak

2:50 COLL 119. Control of primary particle spacing in gold nanoparticle clusters for both high NIR extinction and full reversibility. E. Moaseri, B. Changalvaie, T. Truskett, K.P. Johnston

3:10 COLL 120. Modeling of degradation of virus and amyloid fibril by pre-designed nanoparticles. S. Sen, P. Kral

3:30 COLL 121. Spectroscopic quantification of surface groups on micro- and nanoparticles with conventional and cleavable reporter. T. Behnke, M. Moser, N. Nirmalananthan, U. Resch-Genger

4:00 COLL 122. *In vivo* biomolecule corona onto clinically-used blood-circulating liposomes. M. Hadjidemetriou, K. Kostarelos

Section G

Moscone Center
2001

Interfacial Phenomena & the Oil-Water Interface

Financially supported by The Dow Chemical Company

C. Acevedo, C. E. Mohler, C. J. Tucker, *Organizers, Presiding*

2:00 COLL 123. Continuous fabrication of hierarchical and asymmetric bijel structures via Solvent Transfer-Induced Phase Separation (STRIPS). K.J. Stebe

2:30 COLL 124. Molecular structure and bonding at nanoemulsion and planar oil/water interfaces. G.L. Richmond

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- 3:00 COLL 125.** Molecular structures of polymer surfaces in different chemical environments. **Z. Chen**
- 3:30 COLL 126.** Molecular studies of the assembly of co-surfactants at the oil-water interface. **R. Ciszewski, B. Muller, G. Richmond**
- 3:50 COLL 127.** Mass transfer of lipid-based amphiphiles to water-triglyceride interfaces. **T. Xu, S.R. Dungan**
- 4:10 COLL 128.** Investigating mass transfer and microstructures formation at liquid/liquid interfaces using FT-IR imaging spectroscopy. **R. Toor, M. Schmitt, R. Denoyel, M. Antoni**
- 4:30 COLL 129.** Specific anion effects on caffeine partitioning between aqueous and cyclohexane phases. **Y. Zhang, B.A. Rogers, N.O. Johnson, T.P. Light, T.S. Thompson, G. MacDonald**
- 4:50 COLL 130.** Protein mixture segregation at coffee ring: Real-time imaging of protein ring precipitation by mid-FTIR spectromicroscopy. **S. Choi, G. Birarda**
- 5:10 COLL 131.** Surface and interfacial exploration of a smooth liquids repellent sol-gel coating. **C. Urata, A. Hozumi**

Section H

Moscone Center
2003

Nanoscale Chemical Patterning & Characterization

S. A. Claridge, *Organizer*

W. Liao, *Organizer, Presiding*

- 2:00 COLL 132.** Self-assembly in confined spaces: Using defects to advantage. **N. Nakatsuka, H. Cao, W. Liao, A. Vaish, T.J. Mullen, P.S. Weiss, A.M. Andrews**
- 2:30 COLL 133.** Controlling biomolecular structure and function at the bio/abio interface. **L.J. Webb**
- 3:00 COLL 134.** Probing nano-environments with high-throughput single-molecule tracking. **D.K. Schwartz**
- 3:30 COLL 135.** Stable by design: Understanding the role of monomer architecture in stabilizing noncovalent monolayers toward thermal and solvent processing of layered materials. **S.R. Russell, T. Villarreal, S.A. Claridge**
- 3:50 COLL 136.** Optically directed assembly of colloidal particles. **Y. Zheng**
- 4:20 COLL 137.** Laser directed crystallization and patterning of methylammonium lead halide perovskites from solution. **S. Chou, B. Swartzentruber, M.T. Janish, K.C. Meyer, L. Biedermann, S. Okur, B. Burckel, C.B. Carter, B. Kaehr**
- 4:40 COLL 138.** Tarnishing silver into semiconducting hybrid chalcogenides. **J. Hohman**
- 5:10 COLL 139.** Bottom-up preparation of ordered Rh(I) diisocyanide coordination polymers on gold surfaces and their conductivity and electrochemical stability. **G. Lee, C.P. Kubiak**

Section I

Moscone Center
2005

Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion

Financially supported by MilliporeSigma-Energy Materials; CH Instruments, Inc.; The University of Alabama (Chemistry, College of Arts & Science)

N. Hammer, S. Pan, *Organizers*

C. M. Hill, *Presiding*

- 2:00 COLL 140.** Investigation of charge-transfer complexes between TCNQ and indium phosphide quantum dots. **L. Beck, E.J. McLaurin**
- 2:20 COLL 141.** Anchoring group affects triplet energy transfer from semiconductor nanocrystals to molecules. **Z. Huang, X. Li, P. Xia, M.L. Tang**
- 2:40 COLL 142.** Long-range exciton transport in cesium lead halide perovskite nanocrystals organized in ordered nanoscale assemblies. **E. Penzo, A. Loujice, E. Barnard, N. Borys, A. Schwartzberg, R. Buonsanti, S. Cabrini, A. Weber-Bargioni**
- 3:00 COLL 143.** Stable n-type thermoelectric multilayer thin films with high power factor from carbonaceous nanofillers. **C. Cho, C. Yu, J.C. Grunlan**
- 3:20 COLL 144.** Rational design of Bi₂Te₃/graphene quantum dot hybrid nanosheet for enhanced thermoelectric performance. **S. Li, T. Fan, X. Liu, J. Luo, F. Liu, H. Meng, Y. Liu, F. Pan**
- 3:40 Intermission.**
- 3:50 COLL 145.** Polarized optical spectroscopy of semiconducting polymers in an aligned mesoporous silica system for the study of polaron dynamics. **K. Winchell, M.E. Voss, B.J. Schwartz, S.H. Tolbert**
- 4:10 COLL 146.** Ultrasensitive probing of the local electronic structure of nitrogen doped carbon and its applications to 2D electronics, catalysis and bio-physics. **S. Lee, R.A. Mori, B.K. Alpert, M.L. Baker, J. Berry, H. Cho, E. Denison, W.B. Doriese, J.W. Fowler, K.J. Gaffney, B. Gao, J. Gard, G.C. Hilton, K.D. Irwin, Y.I. Joe, S. Kaya, C. Kenney, J. Knight, T. Kroll, D. Li, R. Marks, M. Minitti, K. Morgan, D. Nordlund, G. O'Neil, H. Ogasawara, P. Pianetta, C. Reintsema, T. Schiros, D. Schmidt, D. Sokaras, Y. Song, D.S. Swetz, C. Titus, J. Ullom, T. Weng, C. Williams, A. Wolcott, B.A. Young**
- 4:30 COLL 147.** Probing the local electronic structure of a porphyrin-based single-layer covalent organic framework using STS. **C. Chen, T. Joshi, H. Li, H. Li, A.D. Chavez, Z. Pedramrazi, J.E. Bredas, W.R. Dichtel, M. Crommie**
- 4:50 COLL 148.** Structure formation, phase behavior, and dynamics of liquid crystals confined to nanopores. **H. Duran, T. Yildirim, M. Steinhart, H. Butt, G. Floudas**
- 5:10 COLL 149.** NiS doped 3D MoS₂/graphene nanostructured hybrids as high performance hydrodesulfurization catalysts. **S. Lonkar, V. Pillai, S. Al Hassan**
- 5:30 COLL 150.** Flexible impedance biosensor for folate receptor detection in cancer diagnostic. **J.J. Fuentes-Rivera, C.R. Cabrera, G. Hernandez**

Section J

Moscone Center
2007

Deposition & Etching of Nanostructures

Cosponsored by INOR

H. Fairbrother, L. McElwee-White, *Organizers*

A. V. Walker, *Organizer, Presiding*

- 2:00 COLL 151.** Deposition of self-assembled monolayers on TiO₂ in air and solution: Implications for photoreactivity and CO₂ photoreduction. **M.A. Hines, E.S. Skibinski, W.J. DeBenedetti**

- 2:30 COLL 152.** Microplasma-based deposition of functional nanomaterials for energy storage applications. **K.E. Mackie, M.J. Gordon**

- 2:50 COLL 153.** Deposition of mixed metal nanostructures from bimetallic precursors using electrons: Insights from surface science. **H. Fairbrother, J.A. Spencer, I. Unlu, R. Kumar, R. Thorman, O. Ingolfsson, S. Barth, K. Johnson, L. McElwee-White**

- 3:20 Intermission.**

- 3:35 COLL 154.** Selectivity in liquid phase etching of III-V materials on the path to developing a gas phase self-limited etching method. **A.J. Muscat**

- 4:05 COLL 155.** Surface chemistry issues relevant to ALD processes. **F. Zaera**

- 4:25 COLL 156.** From fundamental electron-induced chemistry to novel unconventional FEBID precursor materials. **J. Warneke, M. Rohdenburg, G.E. Johnson, J. Laskin, P. Swiderik**

Holy Grails in Chemistry: Celebrating the 50th Anniversary of Accounts of Chemical Research Journal

Sponsored by PRES, Cosponsored by BIOL, BMGT, CARB, CATL, CELL, COLL, ENVR, HIST, I&EC, MEDI, MPPG[†], ORGN and PROF

LGBT Graduate & Postdoctoral Student Chemistry Research Symposium

Novel Reactions, Methodologies & Syntheses in Organic Chemistry

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

Mineral-Water Interface Chemistry A Tribute to Glenn Waychunas

Sponsored by GEOC, Cosponsored by COLL and ENVR

ACS Award in Surface Chemistry: Symposium in honor of Cynthia M. Friend

Honoring the Contribution to Single Crystal Catalysis

Sponsored by CATL, Cosponsored by COLL and WCC

Janus Particles: Synthesis, Characterization & Applications

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

Separation of Macromolecules & Particulates

Sponsored by POLY, Cosponsored by ANYL, COLL and PMSE

Synthesis of Catalysts by Non-Traditional Methods

Model Catalysts, Microporous Materials & Oxides

Sponsored by CATL, Cosponsored by COLL and INOR

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Science

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SUNDAY EVENING

Section A

Moscone Center
Halls B/C

Fundamental Research in Colloids, Surfaces & Nanomaterials

R. Nagarajan, *Organizer*

6:00 - 8:00

- COLL 157.** Influence of biomimetic brush nanostructures on the tribology of natural fiber bio-interfaces. **C. Cazeneuve, J. Vazquez, N. Baghdadli, G.S. Luengo**
- COLL 158.** Coacervation and precipitation in polysaccharide-protein systems. **F. Comert, A.J. Malanowski, F. Azarikia, P.L. Dubin**
- COLL 159.** miRNA sensing plasma modified magnetic micromotor. **L. Oksuz, G. Yurdabak Karaca, F. Kuralay, U. Koc, E. Uygun, A. Uygun Oksuz**
- COLL 160.** Nanotransformation of vancomycin for overcoming Gram-negative bacteria intrinsic resistance. **J. Hoyo, K. Ivanova, M. Fernandes, A. Francesko, T. Tzanov**
- COLL 161.** Fabrication of vanadium oxide thin films from colloidal vanadium oxide (VO₂) nanocrystals for smart window applications. **Y. Jung, S. Chung**
- COLL 162.** Organic-inorganic microcapsules via immobilizing biocomponent colloidal particles at oil-water interface. **Y. Wu, J. Shen**
- COLL 163.** Templated formation of fullerene stripes with tunable nanometer spacing onto physisorbed monolayers. **C. Fang, M. Zimmt**
- COLL 164.** Forming supported lipid multilayers by self-spreading. **T. Liu, C. Hu, B. Sani**
- COLL 165.** Manganese-engineered iron oxide nanoparticles as T₁-T₂ dual-modal contrast agents. **C. Lu**
- COLL 166.** Water buffer action under nanoscale confinement studied by fluorescent pH indicator. **J. Fu, L. Zhang**
- COLL 167.** Quartz Crystal Microbalance with Dissipation (QCM-D) study of bacterial attachment process on surfaces of different hydrophilicity. **Y. Lee**
- COLL 168.** Synthesis of CeO₂ supported noble metal nanoparticles using mixed-valent Mn₂O₃ phase via galvanic replacement reaction. **D. Lee, I. Lee**
- COLL 169.** Control of dynamic wetting behaviors on smooth surface for liquid manipulator and slippery surface with multi functionality. **M. Tenjimbayashi, R. Togasawa, M. Higashi, S. Shiratori**
- COLL 170.** Anisotropic emission-tuned polymer nanoparticles through a scalable direct approach. **J.D. Ruiz Perez, S. Mecking**

[†] Cooperative Cosponsorship

- COLL 171.** Biofunctionalized silica-nanopores: Synthesis and characterization by solid state CP-MAS-NMR. **M. Brodrecht**, H. Breitzke, B. Kumari, T. Gutmann, G. Buntkowsky
- COLL 172.** Investigation of a nanoscale surface area coverage by a self assembly of amyloidogenic peptides. **P.J. Shevlin**, K. Brown, M. Abdelmalik, A. Olatunbosun, K. Yokoyama
- COLL 173.** Investigation of reversible self-assembly of amyloidogenic peptides at nano-scale interface. **J. Battaglia**, **J. Ehret**, M. Endo, A. Islam, K. Yokoyama
- COLL 174.** Fabrication of antifreeze infused hydrophilic polymer/nanoparticle composite anti-icing coating for solar cells via spray layer by layer method. **T. Yamazaki**, T. Moriya, T. Matsubayashi, M. Komine, M. Tenjimbayashi, S. Shiratori
- COLL 175.** Shea butter infused with natural oils to generate a novel and natural antimicrobial moisturizer. **A. Tremblay**, K. Melkonian, J.I. Rizzo
- COLL 176.** Effect of silica size on superhydrophobic property of filter media for water oil/separation. **P. Seeharaj**
- COLL 177.** Withdrawn.
- COLL 178.** Fabrication of nanoporous carbon as electrodes for supercapacitors. **P. Suwannasarn**, S. Wongkasemjit, T. Chaisuwan
- COLL 179.** Silver nanoplate shape control: Use of halide ions to promote vertical growth. **Y. Park**, S. Park, M. Kim
- COLL 180.** Luminescent solar concentrators using ZnTe/CdSe/CdS core/shell quantum dots. **A. McDarby**, D. Khon, M. Zamkov
- COLL 181.** Infusion of native oils to synthesize novel antimicrobial surfaces. **K. Velez**, J.I. Rizzo
- COLL 182.** Tuning localized surface plasmon resonances in Sn-doped In_2O_3 through radial distribution of dopant atoms and core/shell architectures. **B. Crockett**, A. Jansons, K.M. Koskela, J.E. Hutchison
- COLL 183.** Pilot-plant study of using protein to reduce the lipophilic contaminants in paper mills. **A.H. Tayeb**, O.J. Rojas, L. Pal, M. Hubbe
- COLL 184.** Unraveling the importance of controlled architecture in bimetallic multilayer electrode toward efficient electrocatalyst. **M. Gu**, B. Kim
- COLL 185.** Rational design and fabrication of TiO_2 p-n homojunction for photoelectrochemical and photocatalytic water splitting. **L. Pan**, G. Shen, J. Zou, X. Zhang
- COLL 186.** Preparation of 2D porous Co_2O_4 nanofoils via graphene mimicking. **T. Han**
- COLL 187.** Morphological control of colloidal aluminum nanocrystals. **D. Renard**, C.J. Desantis, B. Clark, M. McClain, N.J. Halas
- COLL 188.** Room-temperature formation of Cu-Ag bimetallic heterostructured nanocrystals via galvanic exchange. **W.T. Osowiecki**, X. Ye, A. Alivisatos
- COLL 189.** Effect of ZnS on structural and optical properties of CuInS_2 quantum dots. **A. Nguyen**, C.D. Heyes
- COLL 190.** Combined ionic and hydrogen bonding in polymer multilayer thin film for high gas barrier and stretchiness. **C. Cho**, F. Xiang, J.C. Grunlan
- COLL 191.** Direct amination of HPHT ND surfaces for biodetection. **P. Tran**, E.S. Favre, A. Hernandez, D. Nordlund, A. Wolcott
- COLL 192.** Assessment of color strength and pigment stabilization using microencapsulation of anthraquinone dyestuffs with epoxy resin. **S. Liao**
- COLL 193.** Control of cesium lead halide perovskite nanocrystal morphology and photonic properties. **M.J. Jurow**, A. Pan, J. Kang, A. Buyanin, M.A. Koc, M. Salmeron, P. Alivisatos, L. Wang, Y. Liu
- COLL 194.** Use of a simple and general approach to modify the surfaces of monodisperse metal oxide nanocrystals with a wide variety of silane coupling agents. **A.W. Jansons**, K.M. Koskela, R. Maust, J.E. Hutchison
- COLL 195.** Nano-tribological properties of single monolayers and mixed monolayers of octadecylcarboxylic acid and octacosanoic acid. **R. Thomas**, L. Clark, T. Perry, E.S. Gawalt, **M. Lim**
- COLL 196.** Synthesis and characterization of novel hydrogel beads for selective interactions with carbonaceous nanomaterials. **K.C. Tvrđy**, J. Rowland, N. Sundquist
- COLL 197.** Exploration of the growth mechanism of AgGaS_2 semiconductor nanoparticles. **S. Paderick**, S. Hughes
- COLL 198.** Tuning the optical properties of AgGaS_2 nanocrystals. **S. Hughes**, S. Paderick, M. Kessler
- COLL 199.** Tunable whiteness coloration behavior on rutile TiO_2 ceramic pigment. **Y. Kim**, R. Yu, J. Yun
- COLL 200.** Describing the mechanisms involved in Amot associated membrane binding and fusion. **S. Sears**, A.C. Kimble Hill
- COLL 201.** Ferrocene-modified PEI microgels. **N. Sahiner**, S. Demirci, M. Yildiz
- COLL 202.** Decrystallization of crystals using gold nano-bullets and the metal-assisted and microwave-accelerated decrystallization technique. **N. Thompson**, Z. Boone-Kukoyi, R. Shortt, C. Lansiquot, B. Kioko, E. Bonyi, K. Aslan
- COLL 203.** Tailoring the surface architecture of gold nanoparticles to engage nanoparticle-cell interactions. **K.L. Kinnison**, G.W. Marquart, M.R. Mackiewicz
- COLL 204.** Withdrawn.
- COLL 205.** Withdrawn.
- COLL 206.** Withdrawn.
- COLL 207.** Laponite bioactive nanocomposites for orthopedic applications. **J.T. Wilk**, M.E. Hagerman
- COLL 208.** Withdrawn.
- COLL 209.** Probing the catalytic properties of Ni-based bimetallic phosphides for deep hydrodesulfurization. **P.J. Topalian**, D. Lyanage, S. Brock, M.E. Bussell
- COLL 210.** Dabrafenib drug release system based on gold nanoparticle carriers for treatment of melanoma cancer. **L. Running**, R. Espinal, M.R. Hepel
- COLL 211.** Controlled release of lenvatinib from multi-functional nanoparticles monitored by surface-enhanced Raman scattering. **T. Santiago**, **T. Durgan**, M.R. Hepel
- COLL 212.** Growth of SiO_2 shells on fluorescent nanodiamond cores for biodetection. **P.J. Sandoval**, A.A. Len, A. Arreola, D. Nordlund, P. Cigler, A. Wolcott
- COLL 213.** Room temperature monolayer ZnS growth on CdS and CdSe cores. **M. Augspurger**, N. Razzgoniaeva, M. Zamkov, D. Khon
- COLL 214.** Ligand influence on the branching of gold nanocages. **L.M. Bouchet**, J. Berqueiro, E.A. Glitscher, M. Calderon
- COLL 215.** Proposing a two-molecule multiplexed neuromorphic system: The first step towards a chemically based artificial brain. **N. Nakatsuka**, C. Zhao, J. Abendroth, H. Chen, K.M. Cheung, S. Dominik, **L. Scarabelli**, K. Yang, B. Zhu, H. Yang, Y. Yang, M. Stojanovic, P.S. Weiss, A.M. Andrews
- COLL 216.** Synthesis of $\text{MoS}_2/\text{Fe}_3\text{O}_4$ nanocomposites with peroxidase-like activity for applications in H_2O_2 and glucose detection. **V. Nandwana**, W. Huang, E.W. Roth, V.P. Dravid
- COLL 217.** Hydrothermal formation of various metal oxides using oxalic acid as a capping agent. **Z. Zander**, D. McCarthy, B.G. DeLacy
- COLL 218.** Production and characterization of activated carbon containing polyvinyl alcohol microcapsules. **Q.T. Truong**, **C.A. Zoto**, N. Orbey, A. Moinaro, J. Ogilvie Battersby
- COLL 219.** Single step dipping method of fabricating $\text{Fe}_3\text{O}_4/\text{PVDF-HFP}$ composite porous material for magnetically controllable oil-water separation. **J. Li**, M. Tenjimbayashi, S. Shiratori
- COLL 220.** Synthesis and characterization of metallic nanoparticles using dendrimer-templating technology. **S. Merlus**, M.L. Curry, A. Ethridge
- COLL 221.** Synthesis and surface properties of poly(methyl methacrylate-butyl acrylate)/polythiourethane core-shell nanoparticles by new click reaction with soap-free emulsion polymerization. **J. Kook**, Y. Kim, K. Hwang, J. Kim, J. Lee
- COLL 222.** High density immobilization of oligonucleotides on semiconductor and gold nanoparticles within seconds. **A. Sedighi**, U.J. Krull
- COLL 223.** *In situ* synthesis of Ag nanocrystal-embedded metal-organic framework microneedles showing electrical bistability properties. **S. Park**, K. Park, S. Im, M. Kim
- COLL 224.** One-step synthesis of silver nanoplates with high aspect ratios: Using coordination of silver ions to enhance lateral growth. **Y. Park**, B. Lee, M. Kim
- COLL 225.** Sum-frequency vibrational spectroscopy of electrified water interfaces. **H. Wang**, W. Liu, Y. Shen
- COLL 226.** Withdrawn.
- COLL 227.** Systematic examination of bimetallic architecture in Pt-Pd nanocatalysts. **J. Legere**, S.E. Skrabalak
- COLL 228.** Reporting rotational dynamics of intracellular cargos with Janus particles. **Y. Gao**, S.M. Anthony, Y. Yi, Y. Yu
- COLL 229.** Smart colorimetric patches based on plasmonic nanoparticle-decorated thermoresponsive microgels. **A. Choe**, J. Yeom, M. Kim, H. Ko
- COLL 230.** Antibacterial layer-by-layer coating of nanoparticles. **K. Ivanova**, A. Ivanova, T.J. Heinze, T. Tzanov
- COLL 231.** Optical properties and controllable chiro-optical handedness of symmetric and asymmetric dimer nanocrystals. **P.F. Stevenson**, M. Swartz, C. Coplan, V.A. Tamma, V.A. Apkarian, J.S. Shumaker-Parry
- COLL 232.** Peelable temporary coatings by waterborne self-crosslinkable urethane dispersions. **S. Shin**, H. Oh
- COLL 233.** Identification of Gram-positive bacterial cell wall components responsible for interactions with cationic nanoparticles. **K. Johnson**, E. Caudill, J.A. Pedersen, C.L. Haynes, V. Feng
- COLL 234.** Impact of natural organic matter on the interaction of functionalized diamond nanoparticles with model bacterium *S. oneidensis* MR-1. **J. Kuether**, R. Tapia Hernandez, A.C. Mensch, J.A. Pedersen, R.J. Hamers, V. Feng
- COLL 235.** Adsorption and decomposition of a chemical warfare agent simulant on copper and molybdenum oxides. **L. Trotochaud**, A.R. Head, R. Tsyshkevsky, S. Pletincx, Y. Yu, O. Karslioglu, B.W. Eichhorn, M.M. Kuklja, H. Bluhm
- COLL 236.** Withdrawn.
- COLL 237.** Encapsulation of responsive liquids in coaxial nanofibers via electrospinning. **J. Lundin**, D. Ratchford, R. Ananth, R. Casalini, J.H. Wynne
- COLL 238.** Efficient photocatalytic activity of SnO_2 -deposited ZnS nanoparticles. **J. Lee**, J.K. Kim, D. Jeong, **D. Jang**
- COLL 239.** Carbon nanomaterials for biomedical applications as antioxidants and drug delivery vehicles. **L.G. Niewski**, W.K. Sikkema, E.L. Samuel, A.S. Jalliov, K. Mendoza, R. Zhang, R. Huq, C. Beeton, M. Sharpe, D. Baskin, T.A. Kent, J.M. Tour
- COLL 240.** Magnetically induced heat generation in magnetic nanoparticles for environmental remediation. **K.J. Coopersmith**, G. Larsen, S. Hunyadi Murph
- COLL 241.** Fabrication of Si nanopillar array for ultralow reflectivity. **F. Teng**, N. Li, L. Liu, D. Xu, N. Lyu
- COLL 242.** Nucleobase and nucleotide coordinated Au(I/III) nanoparticles for anticancer therapeutics. **Y. Huang**, W. Yeh
- COLL 243.** Identification of promising electrografting precursors for the modification of electrode surfaces. **S.E. Shaner**, S.N. Doden, M. Moin, F. Mujid, J.E. Newhouse
- COLL 244.** Synthesis and characterization of ceramic-coated α -FeOOH yellow pigments. **Y. Kim**, R. Yu, J. Yun
- COLL 245.** Zwitterionic polymers for chronic wound management. **K. Ruseva**, K. Ivanova, E. Vasileva, T. Tzanov

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- COLL 246.** Solvent free synthesis of nanostructured MoS₂/S-TiO₂ photocatalysts for visible light driven water splitting and dye removal. V. Pillai, S. Lonkar, S. Al Hassan
- COLL 247.** Second harmonic generation studies of indomethacin adsorption to phospholipid membranes. A.D. Fearon, G.Y. Stokes
- COLL 248.** Targeted detection of mRNA biomarkers using graphene oxide and upconversion nanoparticles. A. Kanaras, P. Vilela, A. El-Sagheer, T. Brown, T. Millar, O. Muskens
- COLL 249.** Synthesis of large spherical and anisotropic gold nanoparticle dimers using a seeded-growth method. J. Midelet, A. Heuer-Jungemann, A. El-Sagheer, T. Brown, M. Werts, A. Kanaras
- COLL 250.** Aptamer-gold nanoparticle colorimetric assay evaluation of the role of DNA, small molecule targets, and gold nanoparticle interactions via NMR. J.E. Smith, B. Orzech, D. Russel, C. Medley
- COLL 251.** Modification of zinc oxide nanoparticles with perfluorophosphonic acids. D. Shoup, R. Quinones
- COLL 252.** Modification of nitinol nanoparticles with self-assembled alkylphosphonate films. S. Garretson, R. Quinones
- COLL 253.** Withdrawn.
- COLL 254.** Withdrawn.
- COLL 255.** Designing a model cell membrane to investigate the absorption of nanoparticles in our skin. B. Yoder, A. Sostarecz
- COLL 256.** pH-induced conformational switch in novel amide-based amphiphiles and their potential application in liposomes for targeted drug delivery. C. van Beek, M. Beltran-Sanchez, N.M. Samoshina, V.V. Samoshin
- COLL 257.** Two-dimensional nanoparticle array and cluster formation by supercritical fluid deposition. J. Wang, G. Brown, C.M. Wai, S. Apt
- COLL 258.** Epoxide chemistry on the Si(100)-(2x1) surface. J.L. McCracken, A.J. Pohlman, S.M. Casey
- COLL 259.** Targeted delivery of chemotherapeutic drugs and adjuvants using gold nanoparticle carriers. M. Palmer, A. Marotta, A. Ortiz, M.R. Hepel
- COLL 260.** Static light scattering studies of the aggregation process in the isotropic phase of chromonic surfactants in water. L.E. Stevenson, G.R. Van Hecke, K.K. Karukstis
- COLL 261.** Withdrawn.
- COLL 262.** Highly active cuprous oxide photocathode for the selective photoelectrochemical reduction of carbon dioxide. S. Alden, D.A. Rider
- COLL 263.** Stabilization and reaction of small molecules on TiO₂/Au(111) inverse model catalysts. J. Wilke, D. Boyle, D. Schlosser, V.H. Lam, W. Andahazy, A.E. Baber
- COLL 264.** Phenothiazine cored poly(aryl ether) dendrons: Phase selective gelation, hydrophobization, oil spill recovery, antiwetting property and formation of fluorescent ink. N. Lakshmi
- COLL 265.** Synthesis of perfluoro-acrylate-silane co-polymer nanocapsules using emulsifier-free emulsion polymerization: Water-oil repellent and surface properties. Y. Kim, J. Kook, K. Hwang, J. Ahn, J. Lee
- COLL 266.** Synthesis of lanthanum doped titanate nanotube through a facile hydrothermal route. N. Wongsrisujarit, M. Hasan, K. Yeung
- COLL 267.** Performance enhancement of fluorescent dyes using nanoparticle encapsulation strategies for LED applications. X. Ning, J. Chittigori, Y. Li, G. Horner, R. Sharma, C. Ullal, L. Schadler
- COLL 268.** Synthesis of carboplatin like Pt²⁺ complexes with azide and alkyne functionalities for nanomedical applications. M.T. Wlodarczyk, O. Camacho-Vanegas, S.A. Dragulska, A. Jarzecki, P.R. Dottino, J.A. Martignetti, A.J. Mieszawska
- COLL 269.** Field theory for ligand alignment on nanoparticles: Prospects for self-assembly driven by phase transitions. P. Satish, J. Haberstroh, P.L. Geissler
- COLL 270.** Delivery of biomolecules into solid-supported lipid bilayers using nanolipoprotein particles. A. Dang, M. Coleman, T. Kuhl
- COLL 271.** Polyelectrolyte multilayers for controlled FGF-2 release and improved cell attachment on cell culture surfaces. I. Ding, A.M. Peterson
- COLL 272.** Removal kinetics of 2-Chloroethylthyl Sulphide (CEES) by iron oxide nanoparticles. S. Kim, Y. Choe, K. Baek, Y. Lee
- COLL 273.** Assembly and disassembly of fluorescent graphene oxide for optical detection of enzymatic activity. J. Ju, S. Jeon, T. Kang, H. Kim, M. Kim, S. Lee, J. Kim
- COLL 274.** Modification of the surface of zinc oxide nanoparticles in order to increase efficiency of solar cells. G. Behnke, R. Quinones
- COLL 275.** Alkyl desorption from Si(100)-2x1 by nonadiabatic hydrogen elimination. A. Pohlman, D. Kaliaikin, S.A. Varganov, S.M. Casey
- COLL 276.** Aqueous multiphase emulsion droplets as cellular mimics: Production and utilization. C. Crowe, P. Torre, R. Poudyal, P.C. Bevilacqua, S.S. Mansy, C.D. Keating
- COLL 277.** Novel DNA origami structure for Doxorubicin delivery. S. Palazzolo, V. Kumar, C. Russo Spena, M. Hadla, S. Bayda, G. Corona, V. Canzonieri, G. Toffoli, F. Rizzolo
- COLL 278.** Label-free detection and quantification of specific proteins in complex biological fluids through clogging in cellulose paper. J. Pazzi, M. Xu, W. Cheung, A.B. Subramaniam
- COLL 279.** Paper-based growth of liposomes and proteoliposomes using PAPYRUS in ionic buffers. M. Xu, A.B. Subramaniam
- COLL 280.** Photochemical study of silver nanoparticles formed from the reduction of silver ions by humic acid. R. Leslie, D. Pullman
- COLL 281.** Nanoparticle system based on tripeptide oil in water emulsion to deliver Au nanocrystals and taxol for cancer therapy. S.A. Dragulska, M.T. Wlodarczyk, R. Uljin, A.J. Mieszawska
- COLL 282.** Decoupling mechanisms of palladium nanoparticle synthesis on a biotemplate. E. Retzlaff-Roberts, O. Adigun, G. Novikova, L. Wang, B. Kim, J. Ilavsky, J. Miller, S. Loesch-Fries, M.T. Harris
- COLL 283.** Direct correlation of atomic structure and emission dynamics in single colloidal core/shell nanostructures. K.R. Reid, J.R. McBride, S.J. Rosenthal, J. Macdonald, A.D. LaCroix
- COLL 284.** Effect of fluctuations on excited state rates in core/shell quantum dots. A. Balan, H. Eshet, J.H. Olschansky, E. Rabani, A. Alivisatos
- COLL 285.** Adsorption and decontamination of alpha-synuclein from medically and environmentally-relevant surfaces. H. Phan, S.L. Bartelt-Hunt, J.C. Bartz, J. Ayers, B. Giasson
- COLL 286.** Effects of ice-binding proteins from cold-adapted insect *Tenebrio molitor* on calcite crystallization. A. Kishishita, J. Lugo, X. Wen
- COLL 287.** Characterization of ordered naphthalene diimide films deposited in soils substrates from floating films at the air-water interface. J. Dillenburger, A. Muentner Edwards, J. Reczek
- COLL 288.** Investigations of cationic gemini surfactants by NMR relaxation and diffusion. B.J. Schepbergerdes, S.J. Bachofer, M.D. Lingwood
- COLL 289.** Modular approach for the attachment of protein domains to the exterior of the P22 virus-like particle scaffold. D. Patterson, M. Hicks, M. Terra, B. Western, P. Krugler, T. Douglas
- COLL 290.** Zinc chalcogenide nanostructures as flame retardant coatings. Y. Wang, T. Athauda, Y. Vasquez, Q. Wang
- COLL 291.** Withdrawn.
- COLL 292.** Giant Nanocrystal Quantum Dots (gNQDs) as Förster Resonance Energy Transfer (FRET) donors. M. Chern, T. Nguyen, A. Mahler, A.M. Dennis
- COLL 293.** Advances in correlating the optical and structural behavior of single quantum dots. N. Orfield, J.R. McBride, N. Mishra, S.M. Click, S. Majumder, H. Htoon, J.A. Hollingsworth
- COLL 294.** Potential of indium tin oxide nanoparticles to produce reactive oxygen species in environmental systems as a result of Sn level and location. J. Grundy, C. Ngan, N.B. Saleh, L.E. Katz, M. Kirisits, C. Saez Cabezas, D.J. Milliron
- COLL 295.** Effect of micelle polydispersity on first order phase transitions in polyelectrolyte-colloid systems. D. Marco, P.L. Dubin
- COLL 296.** Modification of magnetite nanoparticle surface through Sn₂ substitution of the hydroxide functional group with a chloride group. I. Rios Cruz, P. Velez Vega, C. Beauchamp Perez, G.E. Alvarez, T. Massas Le'Cleres, F. Roman, V. Fernandez-Alos, O. Perales
- COLL 297.** Asymmetric silica encapsulation toward colloidal Janus nanoparticles: Concave nanoreactor for template-synthesis of electrocatalytic hollow Pt nanodendrite. J. Koo, D. Kim, K. Jin Goo, I. Lee
- COLL 298.** Functional interphases based on peptidomimetic-coated gold surfaces. C. Sugnaux, A. Kelleghan, P. Messersmith
- COLL 299.** pH-responsive Fenton reaction performing polymeric micelles: Applications in anticancer and antibacterial therapy. D. Yoo, J. Noh, E. Jung, D. Lee
- COLL 300.** Potential of nontoxic materials to treat dental hypersensitivity and promote tooth remineralization. A.D. Fritza, K. Rashwan, B. Karels, G. Sereda
- COLL 301.** Substitution effects in aniline on electrochromic properties of hybrid flexible device. A. Uygun Oksuz, E. Eren, C. Alver, G. Yurdabak Karaca
- COLL 302.** Removal of car batteries heavy metals contaminants from aqueous solutions with composite chitosan/alginate coated magnetite beads. K.M. Molina, V. Fernandez-Alos, F. Roman
- COLL 303.** Antitumoral activity of (-)-epicatechin loaded chitosan nanoparticles *in vitro* and *in vivo*. A. Perez Ruiz, I. Olivares Corichi, F. Ganem Rondero, J. Suarez Sandoval, J. García Sánchez
- COLL 304.** Morphology-controlled self-assembly and synthesis of photocatalytic nanocrystals. Y. Zhong, J. Wang, F. Bai
- COLL 305.** Morphology-controlled synthesis and metalation of porphyrin nanoparticles with enhanced photocatalytic performance. J. Wang, Y. Zhong, F. Bai
- COLL 306.** Investigation into the synthesis and oxidative toxicity associated with colloidal C₆₀ nanoparticles. S. Irving, K. Shumard, K.D. Ausman
- COLL 307.** Study on protein conformation and bio-activity of antibodies immobilized on varied nanofibrous membranes. C. Zhao, Y. Deng, B. Pan, Y. Si, G. Sun
- COLL 308.** Microfluidic multifunctional capacitive sensors using ionic liquid electrodes and CNT/PDMS composites for simultaneous sensing of pressure and temperature. S. Yoon, S. Chang
- COLL 309.** Surface modification of conductive polymer thin films by femtosecond laser direct writing. S. Chae, J. Choi, H. Kim
- COLL 310.** Photothermal heating of nanoparticles for activation of initiators for radical polymerization. T.M. Steeves, R.C. Steinhardt, A. Esser-Kahn
- COLL 311.** Ambient STM study of sequentially adsorbed octanethiol and biphenylthiol monolayers on Au(111). G. Avila-Bront
- COLL 312.** Rotating disk electrode characterization of soluble redox active polymers for use in nonaqueous redox flow batteries. J. Davila, K. Hernandez-Burgos, E. Montoto, J. Moore, J. Rodriguez Lopez
- COLL 313.** Synthesis of WS₂ by low-pressure chemical vapor deposition. Z. Luo, J. Qian, Z. Sun, D. Zhang
- COLL 314.** Effect of substituents on anthracene transmitters on triplet transfer from CdSe nanocrystals. P. Xia, Z. Huang, X. Li, J.J. Romero, V.I. Vullev, G.S. Pau, M.L. Tang
- COLL 315.** X-ray imaging observation of interfacial changes between epoxy and metal particles during thermal curing. S. Lee, Y. Kim, H. Lee, H. Kim, D. Noh
- COLL 316.** Effects of OH and Cl adsorption on the surface structure of α-Fe₂O₃: A density functional theory study. Q. Pang, H. DorMohammadi, O. Isgor, L. Arnaudottir
- COLL 317.** Solid-liquid equilibrium of binary mixtures with curved interface. F. Liu, L. Zargarzadeh, H. Chung, J.A. Elliott

- COLL 318.** Peptide loaded microgels as antimicrobial surface coatings. **L. Nyström**, R. Nordstrom, G. Frenning, B. Saunders, R. Alvarez-Asencio, M.W. Rutland, M. Malmsten
- COLL 319.** Coexisting coacervate systems to model aqueous phase separated compartments in biology. **G.A. Mountain**, C.D. Keating
- COLL 320.** Responsive nanogels as carriers for antimicrobial peptides. **R. Nordstrom**, L. Nyström, B. Saunders, M. Malmsten
- COLL 321.** Withdrawn.
- COLL 322.** Three dimensional (3D) plasmonic hot spot for label-free sensing and effective photothermal killing of multiple drug resistant superbugs. **S.J. Jones**, S.S. Sinha, A. Pramanik, P.C. Ray

Section B

Moscone Center
Halls B/C

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, H. Htoon, Y. Sun, S. Wu, *Organizers*

6:00 - 8:00

- COLL 323.** Asymmetric and multi-compartment polymersomes as structural analogues of eukaryotic cells. **A. Peyret**, E. Ibarboure, S. Lecommandoux
- COLL 324.** Assessing the influence of oxidizing agents when preparing colloidal spinel-type $MgMn_2O_4$ nanocrystals. **G. Nolis**, J. Bolotnikov, J. Cabana
- COLL 325.** Hollow silica particles: Measurement of mechanical stability through mercury porosimetry, and development of a low cost, scalable process for hollow silica. **J. Lasio**, F. Woerner, A. Allgeier, C. Chan, J.D. Londono
- COLL 326.** Polyampholyte microgels: From molecular design to ionic traps and switches. **A. Pich**, W. Xu
- COLL 327.** Tannin-mediated layer-by-layer assembly of titania nanocrystals for efficient UV-protective colloidal materials. **H. Son**, B. Koo, J. Lee, K. Kim, J. Jang, M. Yoon, J. Cho, J. Kim, Y. Nam
- COLL 328.** Withdrawn.
- COLL 329.** Development of supramolecular particles made from guanosine derivatives to study and modulate the immune system. **M. Acosta Santiago**, S.E. Quiñonez González, J.M. Rivera
- COLL 330.** Fabrication and characterization of platinum coated with solution processed graphene. **Y. Zhang**
- COLL 331.** Electron microscopy in color: Revealing chemical complexity in emergent nanocrystal systems utilizing advanced STEM-EDS. **J.R. McBride**, K. Reid, S.J. Rosenthal
- COLL 332.** Hybrid lipid-coated silver nanoparticles differentially shielded from Ag⁺ release. **M.R. Mackiewicz**, T.J. Miesen
- COLL 333.** Gadolinium oxide nanocrystals as T₁ MRI contrast agents: Balancing colloidal stability with surface accessibility. **V. Colvin**, N. Taheri, G. Stinnett, R. Paultler, P. Decuzzi, I. Al-Dhahir, A. Mendoza-Garcia
- COLL 334.** Engineering a thermoresponsive nanogel with a photothermal core for cancer cell specific binding. **Z. Yu**, D. Tang, K.J. Shea, X. Qi, H. Gu

- COLL 335.** Magnetic nanocapsule: A novel theranostic agent in biomedicine. **V. Nandwana**, A. Singh, J. Higham, M.M. You, T.S. Zheng, S. Shankar, V.P. Dravid
- COLL 336.** Using molecular dynamics to investigate the effect of intra- and inter-strand hydrogen bonding on sequence-chirality specific adsorption of single-stranded DNA (ssDNA) onto Single-Walled Carbon Nanotubes (SWCNTs). **K. Hinkle**, F.R. Phelan
- COLL 337.** Chiroptical responses of helical arrays of plasmonic nanoparticles around anisotropic nanopillars. **A. Jung**, C. Kim, B. Yeom
- COLL 338.** Solution-processed photovoltaic devices utilizing Semiconductor Excitonic Nanoshells (SENS). **N. Razgoniaeva**, M. Zankov
- COLL 339.** Hybrid nano-antibacterials to control biofilm-associated infections. **K. Ivanova**, J. Hoyo, T. Tzanov
- COLL 340.** Withdrawn.
- COLL 341.** Oxidation state dependence of capping agent for site-selective silica coating of gold nanorods. **J.G. Hinman**, J. Eller, J. Li, J. Li, C.J. Murphy
- COLL 342.** Precisely tuning size, dopant incorporation, and radial distribution of dopants in metal oxide nanocrystals via a continuous, living growth synthesis. **A.W. Jansons**, B. Crockett, K.M. Koskela, J.E. Hutchison
- COLL 343.** Biopolymer hydrogels embedded with lignin-silver nanocomposites with broad activity against antibiotic-resistant clinical isolates. **T. Tzanov**, P. Petkova, K. Ivanova, N. Slavin, H. Bach, I.S. Stefanov
- COLL 344.** Microwave-assisted synthesis and characterization of nanomaterials. **P.N. Njoki**, P. Nwokogu, T. Williams, R. Yehdego
- COLL 345.** Nitrogen enriched hierarchically nanoporous carbon derived from one-pot sol-gel synthesis of polybenzoxazine precursor for CO₂ capture and storage. **T. Chaisuwan**, S. Wongkasemjit, N. Manmuanpom
- COLL 346.** Occlusion of sulfate-based diblock copolymer nanoparticles within calcite: Effect of varying the surface density of anionic stabilizer chains. **S.P. Armes**, Y. Ning
- COLL 347.** Core@Shell architecture: Enhancing catalytic performance. **K. Koczur**, J. Legere, D. Chen, E.W. Harak, S.E. Skrabalak
- COLL 348.** Biocatalytic synthesis and characterization of ultra-long-chain fatty acid sugar alcohol monoesters. **Z. Guo**
- COLL 349.** Interaction of size-tailored PEGylated iron oxide nanoparticles with lipid membranes and cells. **N. Gal**, A. Scheberl, A. Lassenberger, L. Herrero Nogareda, E. Reimhult
- COLL 350.** Aqueous synthesis, characterization and optimization of novel nanostructures for water purification. **T. Eldred**, J.C. Poler
- COLL 351.** MRI reporter contrast agents for ultrasound ablative therapy. **J. Wang**, J. Yang, G. Anthony, S. Sammet, W.C. Trogler, A. Kummel
- COLL 352.** *Sapindus mukorossi* fruit extract mediated synthesis of silver nanoparticle and study of its catalytic and antibacterial activity. **A. Mitra**, G. Dinda, D. Halder, N. Pal, C. Vazquez Vazquez, M. Lápez-Quintela

- COLL 353.** Autocatalytic sol-gel synthesis of organic-inorganic hybrid material. **R. Francis**, G.P. Gopalan
- COLL 354.** Synthesis and adsorption studies of quaternized magnetic cellulose nanocomposite as adsorbent for hexavalent chromium removal. **J. Wanathampong**, T. Witoon, K. Kasemwong
- COLL 355.** Hybrid microemulsion (uE)/sol-gel chemistry to synthesize and harvest $CaTiO_3:Cr^{3+}$ NIR nanophosphors. **P.A. Sermon**, J. Eloi
- COLL 356.** Effects of the template removal methods and pH on formation of hierarchical porous silica using natural rubber as template. **C. Phattharachindanuwong**, N. Hansupalak, C. Warakulwit, J. Plank, Y. Chisti
- COLL 357.** Miniaturised continuous processing units for rapid synthesis and purification of liposomes. **N. Dimov**, E. Kastner, Y. Perrie, N. Szita
- COLL 358.** Nanoparticle synthesis and harvesting from W/O microemulsions (uE). **P.A. Sermon**, M. Worsley, J. Eloi

Section C

Moscone Center
Halls B/C

Basic Research in Colloids, Surfactants & Nanomaterials

R. Nagarajan, *Organizer*

6:00 - 8:00

- COLL 359.** Platonic micelles: A novel aggregation behavior of sulfonatocalix[4]arene-based micelles. **S. Fujii**, K. Sakurai
- COLL 360.** Visible light photoactivity of 1-D TiO₂ by targeted decoration of transition metal nanodots. **M. Hasan**, S. Ferdousi, K. Yeung
- COLL 361.** Effects of osmolytes on caffeine partitioning thermodynamics. **T.S. Thompson**, A.P. Allsbrook, Y. Zhang
- COLL 362.** Elucidating distinct Au(111) and TiO₂/Au(111) surface sites for the selective oxidation of ethanol to acetaldehyde. **D. Boyle**, J.A. Wilke, V.H. Lam, A.E. Baber

Section D

Moscone Center
Halls B/C

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

A. H. Flood, S. L. Tait, *Organizers*

6:00 - 8:00

- COLL 363.** Tuning dynamic two-dimensional supramolecular self-assemblies at surfaces by molecular design. **H.D. Castillo**, J. Dobscha, J.M. Espinosa Duran, S. Kim, S. Debnath, Y. Liu, D.C. Ashley, Y. Serada, B. Hirsch, M. Baik, D. Lee, K. Raghavachari, P. Ortoleva, A.H. Flood, S.L. Tait
- COLL 364.** Controllable self-assembly of peptoid material. **F. Jiao**, H. Jin, P. He, C. Chen, J.J. De Yoreo
- COLL 365.** Towards the design, synthesis, and characterization of the self-assemblies of shape-persistent tricarbo macrocycles. **J. Dobscha**, H.D. Castillo, Y. Liu, J.M. Espinosa-Duran, S. Debnath, Y. Serada, K. Raghavachari, P. Ortoleva, S.L. Tait, A.H. Flood

- COLL 366.** Self-assembly of designed helical-repeat protein on mica characterized using atomic force microscopy. **S. Zhang**, H. Pyles, D. Baker, J.J. De Yoreo
- COLL 367.** Rapid electro-formation of robust and transparent biopolymer gels in prescribed shapes. **A. Gargava**, H. Mani, S.R. Raghavan
- COLL 368.** Synthetic lipids for liposome derivatization, targeting and triggered release towards drug delivery applications. **M. Best**, A.M. Bayer, S. Alam, S. Whitehead
- COLL 369.** Interfacial carbene reactions on hard and soft material interfaces. **A. Shestopalov**
- COLL 370.** Carboranethiol self-assembled monolayers on gold surfaces. **N. Sohrabnia**, A. Yavuz, A. Yilmaz, **M. Danisman**
- COLL 371.** Withdrawn.

Section E

Moscone Center
Halls B/C

Deposition & Etching of Nanostructures

Cosponsored by INOR

H. Fairbrother, L. McElwee-White, A. V. Walker, *Organizers*

6:00 - 8:00

- COLL 372.** Interfacial stress induced metal thin film surface reorganization. **J. Chen**, I. Tevis, M. Thurgon
- COLL 373.** Size and aging effects on antimicrobial efficiency of silver nanoparticles coated on polyamide fabrics activated by atmospheric DBD plasma. **A. Zille**, M. Fernandes, A. Francesco, T. Tzanov, M. Fernandes, F. Oliveira, L.M. Almeida, A.P. Souto, N. Carneiro, T. Amorim, M.F. Esteves
- COLL 374.** Hot Splash Coating (HSC): A method to create thin layers of doped carbon on metal surfaces. **M.R. Alves**, R. Silva

Section F

Moscone Center
Halls B/C

Nanoscale Chemical Patterning & Characterization

S. A. Claridge, W. Liao, *Organizers*

6:00 - 8:00

- COLL 375.** Control of surface energy to optimize post CMP cleaning efficiency for microelectronics fabrication. **S. Ozbek**, T. Walker, **G. Basim**

Section G

Moscone Center
Halls B/C

Interfacial Phenomena & the Oil-Water Interface

Financially supported by The Dow Chemical Company

C. Acevedo, C. E. Mohler, C. J. Tucker, *Organizers*

6:00 - 8:00

- COLL 376.** Self-propelled ionic gel at air-water interface. **K. Furukawa**, T. Teshima, Y. Ueno

MONDAY MORNING

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

K. Gawrisch, N. Malmstadt, *Presiding*

8:30 COLL 377. Lipid phase separation enhances fusion. Z. Imam, L.E. Kenyon, G. Ashby, M. Mendicino, F. Nagib, J.C. Stachowiak

8:50 COLL 378. Molecular interactions between model cell membranes and nanoparticles. Z. Chen

9:15 COLL 379. Phospholipid flippases of the human erythrocyte. S. Cook, M. Hosek, J. Lyles, J. Paterson, S. Smriti, M.L. Zimmerman, D.L. Daleke

9:40 COLL 380. Exploring the interactions of transition metal ions with lipid membranes. P.S. Cremer, M. Poyton, X. Cong, A. Sendek, S. Pullanchery, A. Baxter, S. Sun

10:05 COLL 381. Model system for separating viral membrane binding and fusion. S.G. Boxer, R. Rawle, P. Kasson, E. Webster

10:30 COLL 382. Stochastic molecular mechanisms in membrane traffic. J. Stachowiak

10:55 COLL 383. Blue fluorescent amino acid for studying membrane protein structure and dynamics. F. Gai

11:20 COLL 384. Novel application of cellulose paper as a platform for fabricating giant liposomes. K. Kresse, M. Xu, J. Pazzi, M. Garcia-Ojeda, A.B. Subramaniam

11:45 COLL 385. Investigating the mechanism of electromechanical coupling in voltage-gated ion channels by time-resolved x-ray & neutron interferometry. J.K. Blasie

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

H. Htoon, Y. Sun, S. Wu, *Organizers*

H. Fan, *Organizer, Presiding*

Z. Jiang, *Presiding*

8:30 COLL 386. Enriching Ag nanocrystals with gold. D. Qin, X. Sun, Y. Wu

9:00 COLL 387. Configurational behavior and charge correlation of Zwitterionic brushes at the solid-water interface. W. Chen, J. Mao, J. Yu, M.V. Tirrell

9:30 COLL 388. Shape switchable patchy particles. X. Zheng, D. Pine, M. Weck

9:50 COLL 389. General strategy for assembling metal chalcogenide capped semiconductor nanocrystals into open, mesoporous films with precisely controlled properties. J. Ondry, S. Robbenolt, Y. Yan, E. Harr, H. Kang, S.H. Tolbert

10:10 COLL 390. Reversible self-assembly of monodisperse gold nanoparticle clusters in aqueous solution via pH-tunable interactions between surface ligands. E. Moaseri, B. Changalvaie, J. Bollinger, L. Johnson, T. Truskett, K.P. Johnston

10:30 COLL 391. Two-dimensional bipyramid plasmonic nanoparticle superstructure with four distinct orientational packing orders. Q. Shi

10:50 COLL 392. Watching nanoparticle growth with tandem *in situ* SAXS-XAS. T. Li

11:20 COLL 393. Multimodal resonant soft x-ray scattering for soft materials. C. Wang

11:50 COLL 394. Self-assembly of two-dimensional nanoparticle superlattice membranes: A study by synchrotron x-ray scattering. Z. Jiang

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Soft Interfaces

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

8:30 COLL 395. Investigations of water structure at lipid interfaces. P.S. Cremer, S. Pullanchery, S. Sun

9:00 COLL 396. Interactions of surfactants and polyelectrolytes at water surface studied by surface tension and phase-sensitive sum frequency generation. K. Chou

9:30 COLL 397. Biomedical surface analysis: Recent advances and opportunities for characterizing immobilized proteins and functionalized gold nanoparticles. D.G. Castner

10:00 COLL 398. Surface-modified nanoparticles for biomedical imaging. P. Chen

10:30 COLL 399. Structure and function of surface immobilized peptides and enzymes in air. Z. Chen

11:00 COLL 400. *In-situ* surface spectroscopy and imaging: From electrocatalytic to live cell interfaces. D.H. Gracias

Section D

Moscone Center
2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

S. L. Tait, *Organizer*

A. H. Flood, *Organizer, Presiding*

8:30 Introductory Remarks.

8:40 COLL 401. Hierarchical self-assembly of functionalized tricarbazolo triazolophane macrocycles at the liquid-solid interface. H.D. Castillo, J. Dobscha, B. Hirsch, Y. Liu, J.M. Espinosa-Duran, S. Debnath, Y. Serada, K. Raghavachari, P. Ortoleva, A.H. Flood, S.L. Tait

9:00 COLL 402. Predicting crystalline structures of organic photovoltaic materials involving alkoxybenzotrioles via multiscale computer-aided design. J.M. Espinosa Duran, H.D. Castillo, J. Dobscha, S. Debnath, S.L. Tait, A.H. Flood, K. Raghavachari, P. Ortoleva

9:20 COLL 403. First-principles modelling of supramolecular organic assembly driven by electrostatic interactions. A. De Vita

9:50 COLL 404. Electronic effects in the self-assembly of strong donor/acceptor mixtures on metal surfaces. R. Otero

10:20 COLL 405. Playing with electrons: How physics meets organic chemistry in the engineering of molecular interfaces. W. Hofer

10:50 COLL 406. Electronic structure of two-dimensional pi-conjugated networks: Impact of lattice symmetry. J.E. Bredas

11:20 COLL 407. Tuning charge transport in supramolecular assemblies of porphyrins on Au. J.D. Batteas

11:50 COLL 408. Entropic intermixing in a binary molecular system: A two-dimensional hydrogen-bonded molecular substitutional solid solution. J. MacLeod, J. Lipton-Duffin, D.F. Perepichka, F. Rosei

12:10 COLL 409. Self-assembly under confinement: Nanocorrals for understanding fundamentals of 2D crystallization. L. Verstraete, J. Greenwood, B. Hirsch, S. De Feyter

Section E

Moscone Center
2010

Coacervation: Physics, Chemistry & Biology

P. L. Dubin, *Organizer*

R. Stewart, *Organizer, Presiding*

8:30 COLL 410. Build-up and breakdown of a cytoskeleton in complex coacervate synthetic cells. J. Groen, E. Te Brinke, E. Spruijt, W. Huck

9:00 COLL 411. Actin encapsulation and assembly in polypeptide coacervates. S. Srivastava, P. McCall, S.L. Perry, D. Kovar, M. Gardel, M.V. Tirrell

9:30 COLL 412. Cell-like structures by coacervation: Polymer microcapsules with addressable inner compartments that can harbor biomolecules, colloids or microbial species. S.R. Raghavan, A. Lu, W.E. Bentley

10:00 COLL 413. Protein coacervation in the processing of biomolecular composites. A. Miserez, B. Gabryelczyk, C. Hao

10:30 COLL 414. Alternative solvent for biology. T. Nott, T. Craggs, P. Farber, J. Forman-Kay, A. Baldwin

11:00 COLL 415. Measuring the intracellular dew point: Phase transitions in cells. C. Brangwynne

Section F

Moscone Center
2012

Applied Biosensing Based on Functional Colloids

R. Alvarez Puebla, W. Parak, J. Sagalés, G. F. Strouse, *Organizers*

L. Liz Marzan, *Organizer, Presiding*

8:30 COLL 416. Designing bio-functionalised colloids for biosensing. M. Stevens

9:00 COLL 417. Functionalizing iron oxide with genomic DNA: Materials for drug capture. C. Blumenfeld, M.D. Schulz, S. Hettis, R.H. Grubbs

9:20 COLL 418. Silica coated ferromagnetic nanoparticles in trace glycoprotein recovery for LC-MS. N. Sortedahl, E.J. Rodriguez, P. Wei, Y. Hua, D.A. Egas, M.J. Wirth

9:40 COLL 419. Synthesis, characterization and functionalization of inorganic, water soluble nanoparticles. J. Huehn, N. Feliu, W. Parak

10:00 COLL 420. Interpreting sensing mechanisms in nucleic acid-wrapped nanotube sensors through computational approaches. A. Alizadehmojarad, A. Beyene, E.G. Tindall, M.P. Landry, L. Vukovic

10:20 COLL 421. Fluorescent nanodiamond labelled with gold nanoparticles for enhanced optical and electron microscopy imaging. W. Liu, T. Weil

10:40 COLL 422. Understanding the interaction of nanoparticles and cells. N. Feliu, W. Parak

Section G

Moscone Center
2001

Interfacial Phenomena & the Oil-Water Interface

Financially supported by The Dow Chemical Company

C. Acevedo, C. E. Mohler, C. J. Tucker, *Organizers, Presiding*

8:30 COLL 423. Amphiphilic block copolymers at the oil-water interface. P. Alexandridis

9:00 COLL 424. Dynamic and thermodynamic factors controlling transient Marangoni flow at the oil/water interface under convective diffusion surfactant adsorption conditions. R.D. Tilton, G. Duner, S. Garoff, T.M. Przybycien

9:30 COLL 425. Dynamics of oil-water interfaces: Adsorption, polymerization, and transport. T. Squires

10:00 COLL 426. Formation of multi-nanoemulsions for colloidal synthesis. M. Zhang, P. Malo de Molina, M.E. Helgeson

10:30 COLL 427. Exploring the interfacial synergy between polymers and surfactants. B. Schabes, C. Steen, G. Richmond

10:50 COLL 428. Pickering nanemulsions using bespoke sterically-stabilized diblock copolymer nanoparticles. S.P. Armes

11:10 COLL 429. One-step formation of stable multiple emulsions. P.M. Guenoun, M. Protat, N. Bodin, N. Pantoustier, J. Dailant, F. Gobeaux, F. Malloggi, P. Perrin

11:30 COLL 430. Microemulsion interfacial tension and characteristic length scale model using a microscopic curvature approach and the HLD concept. V. Torrealba, R.T. Johns

11:50 COLL 431. Determining the dynamic interfacial tension during droplet/bubble generation using T-junction and co-flowing microchannels. K. Wang, X. Wang, L. Yang, G. Liu, G. Luo

Section H

Moscone Center
2003

Nanoscale Chemical Patterning & Characterization

S. A. Claridge, W. Liao, *Organizers*
S. Claridge, *Presiding*

8:30 COLL 432. Generation of patterned multifunctional surfaces using orthogonal click chemistries. K. Brooks, J. Yatvin, C.D. McNitt, R.A. Reese, C. Jung, V. Popik, J.J. Locklin

8:50 COLL 433. Bioinspired interfaces with controlled anisotropic wetting at scales <10 nm for ultrathin patterned films. S.W. Choong, S.R. Russell, J. Bang, J.O. Bechtold, J.K. Patterson, S.A. Claridge

9:10 COLL 434. Programming polymer nanoarchitectures by DNA origami technology. Y. Tokura, Y. Jiang, A. Welle, M.H. Stenzel, K.M. Krzemien, J. Michaelis, R. Berger, C. Barner-Kowollik, Y. Wu, T. Weil

9:30 COLL 435. Polymer pen chemical lift-off lithography. X. Xu, Q. Yang, K.M. Cheung, C. Zhao, N. Wattanatorn, J.N. Belling, J. Abendroth, L. Slaughter, C.A. Mirkin, A.M. Andrews, P.S. Weiss

9:50 COLL 436. Nanoimprint lithography using DNA nanostructure templates. H. Liu

10:20 COLL 437. Bottom-up approach to high density array of patterned polymer brushes. P. Gopalan

10:50 COLL 438. Surface assembly and packing preferences of fibrinogen mediated by the periodicity and alignment of block copolymer nanodomains. J. Hamm, T. Xie, A. Vora, P.J. Mulcahey, C. Liu, D.P. Sanders

11:20 COLL 439. Monolayer assembly of polyaromatics by shear-induced alignment and by 2D porous networks. C. Chen

Section I

Moscone Center
2005

Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion

Financially supported by MilliporeSigma-Energy Materials; CH Instruments, Inc.; The University of Alabama (Chemistry, College of Arts & Science)

N. Hammer, S. Pan, *Organizers, Presiding*

8:30 COLL 440. Actuable DNA origami-nanoparticle composites for energy harvesting and storage. A. Dehankar, J. Johnson, C. Castro, J.O. Winter

8:50 COLL 441. Studies of electrochemical reactions at individual nanostructures via combined electroanalytical and optical methods. C.M. Hill

9:20 COLL 442. Nanoelectrochemical techniques for high-resolution imaging and characterization of catalytic nanostructures. M.V. Mirkin, T. Sun, M. Zhou, Y. Yu, D. Wang, H. Xin

9:50 COLL 443. Detecting small molecule binding with membrane proteins. N. Tao

10:20 Intermission.

10:30 COLL 444. Gold nanoparticle assisted delayed luminescence in conjugated polymers. L. Rothberg, R. Chakraborty

11:00 COLL 445. Growth of highly fluorescent gold and silver nano-clusters. D. Mishra, F. Aldeek, G. Palui, H.M. Mattoussi

11:30 COLL 446. Competitive partial charge transfer interactions with hydrogen-bonded solvent networks. N. Hammer

Section J

Moscone Center
2007

ACS Award in Colloid Chemistry: Symposium in honor of Nicholas A. Kotov

P. Podsiadlo, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 COLL 447. Colloidal assembly in alchemical space. S.C. Glotzer

9:05 COLL 448. Control of DNA-functionalized nanoparticle assembly. M. Olvera De La Cruz

9:35 COLL 449. Large-scale nanocrystal arrays. P. Mulvaney, C. Kinnear, H. Zhang, A. Roberts, T. James, J. Cadusch

10:05 Intermission.

10:15 COLL 450. Surface patterning of nanoparticles with polymer patches. E. Kumacheva

10:45 COLL 451. Can particles mimic atoms and molecules? Z. Nie, C. Yi, S. Zhang, Y. Yang

11:15 COLL 452. Stimuli-responsive materials by nanoscale assembly and disassembly. Y. Yin

11:45 Concluding Remarks.

Mineral-Water Interface Chemistry

A Tribute to Glenn Waychunas

Sponsored by GEOC, Cosponsored by COLL and ENVIR

Science for a Sustainable Energy Future

Energy Storage

Sponsored by PRES, Cosponsored by BIOL, BIOT, BMGT, CARB, CATL, CEI, CELL, COLL, ENFL, ENVIR, GEOC, I&EC, MEDI, MPPG², ORGN and PROF

LGBT Graduate & Postdoctoral Student Chemistry Research Symposium

Frontiers in Analytical & Physical Chemistry: From Atmospheric to Atomic Discoveries

Sponsored by PROF, Cosponsored by ANYL², BIOL², CHED, CMA, COLL, COMP, CWD, ENVIR, INOR², MEDI, MPPG, ORGN, PHYS, PMSE², POLY, PRES² and WCC

ACS Award in Surface Chemistry: Symposium in honor of Cynthia M. Friend

Honoring the Contribution to Nanocatalysis

Sponsored by CATL, Cosponsored by COLL and WCC

Janus Particles: Synthesis, Characterization & Applications

Sponsored by PMSE, Cosponsored by COLL and MPPG²

Functional Lignocellulosics & Nanotechnology

Tuning Interfacial Phenomena with Ligno-Nanocellulosic Materials

Sponsored by CELL, Cosponsored by CARB and COLL

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

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

Elucidation of Mechanisms & Kinetics on Surfaces

Surface Science

Sponsored by CATL, Cosponsored by COLL and ENVIR

MONDAY AFTERNOON

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, M. Nieh, N. Srividya, *Organizers*

A. N. Parikh, *Organizer, Presiding*

J. Stachowiak, *Presiding*

2:00 COLL 453. Development of a porous photocatalytic matrix for encapsulation of membrane-bound proteins. K.E. Johnson, S. Gakhar, S.H. Risbud, M.L. Longo

2:20 COLL 454. Time-resolved second harmonic microscopy of molecular transport through living cell membranes. H. Dai

2:45 COLL 455. Chemical imaging of the lipid composition at the site of influenza budding. M.L. Kraft, A.N. Yeager, P.K. Weber, J. Zimmerberg

3:10 COLL 456. Modulating effects of small molecules on the structure and dynamics of lipid-membranes. X. Cheng

3:35 COLL 457. Crowding-induced mixing of lipid bilayers: Examination of mixing energy, reversibility, and dynamics. M.L. Longo

4:00 COLL 458. Effects of defects on lipid biomembranes. M. Nieh, Y. Xia, F. Heberle, J. Katsaras

4:25 COLL 459. Super-resolution stimulated emission depletion-fluorescence correlation spectroscopy reveals nanoscale membrane reorganization induced by pore-forming proteins. N. Kumar Sarangi, I. Ilangumaran Ponmalar, S. Visweswariah, J. Kumar Basu, G.K. Ayappa

4:50 COLL 460. Nanosafety and toxicity assessment by using spontaneous beating cardiomyocytes. S. Zou

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

H. Htoon, Y. Sun, S. Wu, *Organizers*

H. Fan, *Organizer, Presiding*

O. Chen, *Presiding*

2:00 COLL 461. Epitaxially connected quantum dot superlattices. T. Hanrath, F. Wise, L. Kourkoutis, F. Escobedo, K. Whitham, B. Savitzky

2:30 COLL 462. Nanocube superlattices of CsPbBr₃ perovskites and pressure-induced phase transformation at atomic and mesoscale levels. O. Chen, Y. Nagaoka, K. Hills-Kimball, R. Tan, R. Li, Z. Wang

3:00 COLL 463. Self-assembly of actinyl peroxide nanoclusters with cationic surfactant. Y. Gao, J. Szymanowski, T. Zhang, P.C. Burns, T. Liu

3:20 COLL 464. Stimuli-responsive colloidal architectures and porous membranes by melt-shear organization. S. Vowinkel, D. Scheid, M. Gallei

3:40 COLL 465. Framework stability vs. collapse: Quantifying the role of nearest-neighbor nanocrystal bonding as a key factor in determining order in mesoporous colloidal nanocrystal frameworks. T.E. Williams, D. Ushizima, P. Ercius, C. Zhu, D.J. Milliron, B. Helms

4:00 COLL 466. Assembly of free-standing, flexible, citrate-capped gold nanoparticle films at the air-water interface. L. Beecher, J.J. Houlihan, V.A. Apkarian, J.S. Shumaker-Parry

4:20 COLL 467. Complex superparamagnetic particle architectures: Obtaining novel properties by controlled assembly and combination of nano-building-blocks to nanostructured entities. K. Mandel

4:40 COLL 468. Nanoparticles, nanorods and shish-kebabs with precisely controlled dimensions, compositions, and architectures. Z. Lin

5:10 COLL 469. Synthesizing dual-emitting quantum dots on indium phosphide cores. A.M. Dennis, R. Toufanian, M. Chern, T. Nguyen, A. Mahler

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Catalysts for Selective Chemical Transformations

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

2:00 COLL 470. Biomimetic catalysis in green organic transformations. J.E. Backvall

2:30 COLL 471. Fischer-Tropsch synthesis on cobalt catalysts-on the effect of water revisited. A. Holmen, E. Rytter

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3:00 COLL 472. Aspects of the Fischer Tropsch reaction mechanism in the light of chemical transient kinetics. N. Kruse

3:30 COLL 473. Selective hydrocarbon oxidation catalysis by Au atomic and nanoclusters. H. Kung, M.C. Kung

4:00 COLL 474. Probing the role of particle size in nickel phosphide hydrotreating catalysts. M.E. Bussell, P.J. Topalian, D. Liyanage, S. Brock

4:30 COLL 475. Competing forces in chiral surface chemistry: Enantiospecific adsorption versus enantiomer self-aggregation. A.J. Gellman, Y. Yun

5:00 COLL 476. Hot electron-mediated surface chemistry on solid-gas and solid-liquid interfaces. J. Park

Section D

Moscone Center

2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

A. H. Flood, *Organizer*

S. L. Tait, *Organizer, Presiding*

2:00 COLL 477. Chemisorption impacts on physisorption: Perturbations of 2D self-assemblies at the liquid-solid interface. B. Hirsch, A. Braganca, J. Greenwood, O. Ivasenko, T. Phan, S. De Feyter

2:20 COLL 478. Nanoconfined self-assembly on a grafted graphitic surface under electrochemical control. T. Huynh, T. Phan, O. Ivasenko, S. F. L. Mertens, S. De Feyter

2:40 COLL 479. Surface-confined molecular nanostructures: Influencing molecule-surface interactions as well as electronic surface properties. M. Stoehr

3:10 COLL 480. Hierarchical assembly of Xe atoms in an atomically precise array of quantum boxes. T. Jung, L.H. Gade, M. Stoehr, J. Lobo Checa, J. Bjoerk, E. Ortega, E. Meyer, S. Kawai, S. Nowakowska, A. Waeckerlin

3:40 COLL 481. Templated 2D supramolecular assembly of fullerenes on graphite by five-coordinate gallium-porphyrin monolayers. J. Kamm, M.D. Hopkins

4:00 COLL 482. Supramolecular control of interfacial structure in organic semiconductors. D.F. Perepichka

4:30 COLL 483. Hierarchical self-assembly of novel organic polycyclic aromatic molecular systems into 1D and 2D nanomaterials. H.P. Rathnayake, H. Sims, J. Sharpsteen, P. Chinnappan

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4:50 COLL 484. Adsorption of n-alkanes on the surface of h-boron nitride: A thermodynamic and molecular dynamics study. N.A. Strange, J.Z. Larese

5:10 COLL 485. Multiscale and hierarchical organic materials by design, synthesis, and self-assembly. A.H. Flood, J. Dobscha, H.D. Castillo, J.M. Espinosa-Duran, Y. Sereda, S. Debnath, K. Raghavachari, P. Ortoleva, S.L. Tait

Section E

Moscone Center

2010

Coacervation: Physics, Chemistry & Biology

P. L. Dubin, R. Stewart, *Organizers*

S. L. Perry, *Presiding*

2:00 COLL 486. Resistance to cold cataract in the eye lens proteins of a cold-adapted fish. R.W. Martin, J. Bierma, A. Ledray, A. Kiss

2:30 COLL 487. Design and optimization of polyphosphate coacervates for use in biomedical devices. M. Filiaggi, A. Momeni

3:00 COLL 488. Complex coacervate for cardiac regeneration. Y. Wang

3:30 COLL 489. Discovery of a family of new LCST peptide polymers: Coacervation behavior and self-assembly. A. Chilkoti

4:00 COLL 490. Engineering Pickering emulsions using protein/polysaccharide complexes. Q. Huang

4:30 COLL 491. Functionality of protein-polysaccharide hydrogels. S.L. Turgeon, X. Le, C.J. Souza, L. Rioux

5:00 COLL 492. Using coacervation to achieve surface-selective particle deposition. L. Piculell

Section F

Moscone Center

2012

Applied Biosensing Based on Functional Colloids

L. Liz Marzan, W. Parak, J. Sagalés, G. F. Strouse, *Organizers*

R. Alvarez Puebla, *Organizer, Presiding*

2:00 COLL 493. Super Temporal-Resolved Microscopy (STReM) for measuring fast interfacial dynamics. C.F. Landes

2:30 COLL 494. New luminescence nanothermometers in different biological windows. f. Diaz, O. Savchuk, J. Carvajal, M. Aguilo

3:00 COLL 495. Improving surgery via selective detection of ovarian tumors using fluorescent nanoparticles. J.M. Berlin

3:30 COLL 496. Liver specific MRI contrast agents based on Mn²⁺ containing nanoparticles. I. Lee

4:00 COLL 497. Targeted sensing and drug delivery using smart nanoparticles. A. Heuer-Jungemann, A. El-Sagheer, P. Lackie, T. Brown, A. Kanaras

Section G

Moscone Center

2001

Interfacial Phenomena & the Oil-Water Interface

Financially supported by The Dow Chemical Company

C. Acevedo, C. E. Mohler, C. J. Tucker, *Organizers, Presiding*

2:00 COLL 498. Strategies for making smart foams, emulsions and multiphase gels stabilized by functional particles. O.D. Velev

2:35 COLL 499. Probing hydrophobic interactions at solid/water/oil/air interfaces and surface interaction mechanisms of deformable emulsion droplets. H. Zeng, A. Faghijnejad, C. Shi, L. Zhang, L. Xie, J. Huang, X. Cui

3:05 COLL 500. Ion specific effects in Winsor III microemulsions. B. Trotter, M. Kadhum, B.J. Shiau, J.H. Harwell

3:35 COLL 501. How molecular structure of surfactants determine the dynamics and viability of wettability alteration. S. Das, Q. Nguyen, R.T. Bonnecaze

4:05 COLL 502. Effects of salinity on oil recovery: Experimental and theoretical studies of crude oil-water-calcite surface restructuring and associated physical and (electro)chemical interactions. J.N. Israelachvili, S. Chen, Y. Kaufman, D. Seo, A. Schrader, K. Kristiansen, H. Dobbs, N. Cadirov, J. Boles

4:35 COLL 503. Simple-to-apply wetting model to predict the thermodynamically stable and the metastable contact angles on textured/rough/patterned surfaces. Y. Kaufman, S. Chen, H. Mishra, A.M. Schrader, D. Lee, S. Das, J.N. Israelachvili

4:55 COLL 504. Molecular and colloidal phenomena at aqueous interfaces of structured oils. N.L. Abbott

Section H

Moscone Center

2003

Nanoscale Chemical Patterning & Characterization

S. A. Claridge, W. Liao, *Organizers*

S. Claridge, *Presiding*

2:00 COLL 505. New dimensions in patterning: Placement and metrology of chemical functionality at all scales. P.S. Weiss

2:30 COLL 506. Construction of highly ordered surface molecular nanostructures: From non-covalent interaction to covalent bond. D. Wang, L. Wan

3:00 COLL 507. Chemical orthogonality at the molecular limit: Structural lessons from the membrane applied to layered material interfaces. S.A. Claridge

3:30 COLL 508. Controlling molecular self-assembly on graphene and graphite at the nanoscale: Combining bottom-up and top-down strategies. S. De Feyter

4:00 COLL 509. Surface mass spectrometry and STM characterizations of compositionally patterned monolayers and their post-assembly chemical modifications. M. Zimmt, J. He, C. Fang, R.A. Shelp, O. Fejfar

4:30 COLL 510. Subsurface structure fingerprint of 2D materials and heterostructures by their nanomechanical response. Q. Tu, B. Lange, H. Kim, Y.G. Yingling, V. Blum, S. Zauscher

4:50 COLL 511. Quantitative connections between Raman spectroscopy and scanning tunneling microscopy in chemisorption on graphite. A. Brown, B. Hirsch, P. Walke, S. De Gendt, S. De Feyter

5:10 COLL 512. Chemisorption on graphitic substrates imaged at the single molecule level. B. Hirsch, A. Braganca, K. Tahara, T. Ishikawa, Y. Tobe, M. Melle-Franco, S. De Feyter

Section I

Moscone Center

2005

Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion

Financially supported by MilliporeSigma-Energy Materials; CH Instruments, Inc.; The University of Alabama (Chemistry, College of Arts & Science)

N. Hammer, S. Pan, *Organizers, Presiding*

2:00 COLL 513. Optically transparent ultramicroelectrode for studying local electrochemical events of single Au nanoparticle using combined methods of electrochemistry and dark field scattering microscopy. Y. Ma, S. Pan

2:20 COLL 514. Structural plasmonics studied using ultrafast spectroscopy beyond the diffraction limit. K.L. Knappenberger

2:50 COLL 515. Directional charge-separation in organic semiconductor nanowire crystals. M. Barnes

3:20 COLL 516. Long-range catalytic communications within and between single nanocatalysts. P. Chen

3:50 Intermission.

4:00 COLL 517. Observation of local redox events at individual plasmonic nanoparticles using spectroelectrochemistry methods. S. Pan

4:30 COLL 518. Photophysical investigation of electron ejection efficiencies of novel organic near-IR absorbing dyes into TiO₂ based semiconductor surfaces for dye-sensitized solar cell applications. L.E. McNamara, H. Cheema, J.H. Delcamp, N. Hammer

4:50 COLL 519. Mechanistic insights into multiple blinking states in small core-shell and core-mul-tishell quantum dots. C.D. Heyes

5:10 COLL 520. Organo-Metal Halide (OMH) Perovskite Quantum Dots (PQDs): Effective surface passivation using peptides. J.Z. Zhang

Section J

Moscone Center

2007

ACS Award in Colloid Chemistry: Symposium in honor of Nicholas A. Kotov

P. Podsiadlo, *Organizer, Presiding*

2:00 Introductory Remarks.

2:05 COLL 521. Non-additive interactions at chemically and structurally complex interfaces. N.L. Abbott

‡ Cooperative Cosponsorship

- 2:35 COLL 522.** Programmable materials from DNA bonds and nanoparticle atoms. C.A. Mirkin
- 3:05 COLL 523.** Nanoparticle assembly: Bridging size scales and dimensionalities. M. Niederberger
- 3:35** Intermission.
- 3:45 COLL 524.** Making all the puzzle pieces fit: Shape directed assembly of anisotropic nanocrystals into multi-component superlattices. C.B. Murray, T. Paik, N.J. Greybush, Y. Wu, S. Najm, C.R. Kagan
- 4:15 COLL 525.** Synthetic methodology for colloidal synthesis of inorganic nanomaterials: Limitations and opportunities. V. Srivastava, I. Fedin, H. Zhang, D.V. Talapin
- 4:45 COLL 526.** Building materials from colloidal nanoparticles. L. Cademartiri
- 5:15** Concluding Remarks.

Science for a Sustainable Energy Future

Chemical & Biological Conversions Approaches to Energy Conversion

Sponsored by PRES, Cosponsored by BIOL, BIOT, BMGT, CARB, CATL, CEI, CELL, COLL, ENVR, GEOC, I&EC, MEDI, MPPG², ORGN and PROF

LGBT Graduate & Postdoctoral Student Chemistry Research Symposium

Advances in Medicinal & Biological Chemistry: From Therapeutics to Education

Sponsored by PROF, Cosponsored by ANYL², BIOL², CHED, CMA, COLL, COMP, CWD, ENVR, INOR², MEDI, MPPG, ORGN, PHYS, PMSE, POLY, PRES² and WCC

ACS Award in Industrial Chemistry: Symposium in honor of Jane Frommer

Sponsored by I&EC, Cosponsored by ANYL, BIOL, COLL, INOR, ORGN, PMSE and POLY

ACS Award in Surface Chemistry: Symposium in honor of Cynthia M. Friend

Honoring the Contribution to Nanocatalysis

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Janus Particles: Synthesis, Characterization & Applications

Sponsored by PMSE, Cosponsored by COLL and MPPG²

Functional Lignocellulosics & Nanotechnology

Modification & Analytics

Sponsored by CELL, Cosponsored by CARB and COLL

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Mechanistic Studies of Catalysis in Photocatalytic & Photoelectrodes

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

Elucidation of Mechanisms & Kinetics on Surfaces

Mechanisms

Sponsored by CATL, Cosponsored by COLL and ENVR

MONDAY EVENING

Section A

Moscone Center
Hall D

Sci-Mix

R. Nagarajan, *Organizer*

8:00 - 10:00

11, 31, 44, 107, 135, 139, 145, 160-162, 165-166, 168-170, 178, 182-183, 187-188, 192-194, 200, 202, 215, 218, 221-222, 227-229, 231, 235, 239-240, 243, 246, 248, 257, 264, 267-271, 275-276, 280-281, 284, 290, 293-294, 298, 306-307, 310, 314, 316, 323, 338, 388, 417, 420, 466, 511. See previous listings.

593-594, 665, 699. See subsequent listings.

TUESDAY MORNING

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

D. L. Daleke, C. Naumann, *Presiding*

8:30 COLL 527. Pattern recognition of membrane images to deduce cellular signaling status. G. Liu, Y. Liu, D. Hanna, M. Lohrer

8:55 COLL 528. Spontaneous phospholipid membrane formation by histidine ligation. A. Bhattacharya, N.K. Devaraj

9:15 COLL 529. Hydrogel-assisted membrane protein reconstitution for studying GPCR dependence on lipid composition. N. Malmstadt

9:40 COLL 530. Dimerization of a GPCR in membranes investigated by SANS. O. Soubias, J. Nickels, W.E. Teague, Jr., K.L. Weiss, K.G. Hines, J. Katsaras, K. Gawrisch

10:05 COLL 531. Toward a quantitative continuum model for membrane shape fluctuations. F.L. Brown

10:30 COLL 532. Interfacing proteins with *de novo* membrane formation. N.K. Devaraj

10:55 COLL 533. Hybrid model membrane combining micropatterned lipid bilayer and hydrophilic polymer brush. K. Morigaki, T. Nishimura, F. Tamura, Y. Tanimoto, K. Ando, Y. Sudo, F. Hayashi, Y. Iwasaki

11:20 COLL 534. pH-dependent behavior of lipid bilayer coatings on mesoporous silica nanoparticles. D.Y. Sasaki, C. Ashley, E. Carnes, S. Sankhagowit, C. Ting

11:45 COLL 535. Investigating electrostatic interactions between PIP₂ and the EphA2 receptor tyrosine kinase. X. Shi, S. Christie, R. Lingerak, G. Gilmore, P.G. Rodriguez, J. Muller-Greven, M. Buck, B. Wang, A.W. Smith

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

Y. Sun, S. Wu, *Organizers*

H. Fan, H. Htoon, *Organizers, Presiding*

8:30 COLL 536. Designed nanoparticles architectures by self-assembly. O. Gang

9:00 COLL 537. Exploring plasmon-exciton coupling at the surface of TiO₂ nanorods. B.G. DeLacy, D. McCarthy, Z. Zander, Y. Rao, H. Fang, H. Dai

9:30 COLL 538. Room temperature, scalable cation exchange in PbS and CdSe quantum dots using a silver(I) complex. A.L. Morris, W.R. Tilluck, S.E. Benjamin, C. Lin, H. Hamo, E. Lozano, P.G. Van Patten

9:50 COLL 539. Controlled assembly of metallic nanoaggregates and their use in understanding cell uptake of nanoparticles. J.M. Berlin

10:10 COLL 540. Synthesis and assembly of gold nanoparticles/polymers: Spheres, prisms, octahedra, and rods...oh my! S.M. Budy, D. Hamilton, Y. Cai, M.K. Knowles, S.M. Reed

10:30 COLL 541. Transforming layered to nonlayered two-dimensional materials: Cation exchange of SnS₂ to Cu₂SnS₃. Y. Wang, Y.V. Morozov, M. Zhukovskiy, R. Chatterjee, S. Draguta, P. Tongying, S. Rouvimov, M.K. Kuno

10:50 COLL 542. DNA-assembled chain-like nanoparticle architectures with tailororable organizations. C. Tian, M. Cordeiro, D. DiMarzio, M. Liu, H. Xin, J. Lhermitte, C. Ma, O. Gang

11:10 COLL 543. Fabrication and application of inorganic nanoparticle superstructures. Z. Tang

11:40 COLL 544. Synchrotron-based x-ray techniques for in-situ superlattice discovery and processing of nanocrystal assemblies. Z. Wang

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Surface Science of Functional Interfaces

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

9:00 COLL 545. Functionalizing surfaces with polymeric layers. N.D. Spencer

9:30 COLL 546. Alkyl-cyclens as effective sulfur- and phosphorus-free additives in engine oils for improved boundary lubrication. Y. Chung, Q.J. Wang, T.J. Marks, M. Delferro, M. Desanker, J. Lu, X. He

10:00 COLL 547. When surfaces get rough: Studies of the assembly and frictional properties of SAMs and graphene SAM-composites on surfaces with nanoscale roughness. J.D. Batteas

10:30 COLL 548. Depositing nanostructures using electron beams: Insights from surface science. H. Fairbrother

11:00 COLL 549. Surface structure dependence in oxide catalysis: Comparison of methanol reaction on CeO₂ oriented surfaces and nano crystallites. S.H. Overbury

11:30 COLL 550. Water speciation and mechanochemical reactions at/in multicomponent silicate glass surfaces. S.H. Kim

Section D

Moscone Center
2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

S. L. Tait, *Organizer*

A. H. Flood, *Organizer, Presiding*

8:30 COLL 551. Topochemical synthesis of a two-dimensional polymer via [2+2] cycloaddition on the multigram scale. R. Lange, G. Hofer, T. Weber, N. Juergensen, U. Lemmer, G. Hernandez-Sosa, D. Schlüter

8:50 COLL 552. Structure elucidation of two-dimensional polymers synthesized at the air/water interface. V. Mueller, F. Shao, M. Moradi, R. Lange, R. Zenobi, T. Jung, B.T. King, D. Schlüter

9:10 COLL 553. Self-assembly and on-surface polymerization of bromine-functionalized pyrene derivatives on noble metal surfaces. B. Tran, T. Pham, F. Song, M. Nguyen, M. Kivala, M. Stoehr

9:30 COLL 554. Charged induced formation of crystalline network polymers. A.A. Raja, D. Kim, S. Subramanian, C.T. Yavuz

9:50 COLL 555. Exploring molecular assembly at surfaces. F. Rosei

10:20 COLL 556. Hierarchy of interactions and templation effects in supramolecular assembly at surface: From organic monolayers to thin films. G. Costantini

10:50 COLL 557. Sophisticated photoreponsive system made of supramolecular assembly of photochromic diarylethene at solid/liquid interface. K. Matsuda

11:20 COLL 558. Understanding intermolecular interactions driving the self-assembly of alkoxybenzotrienes on graphene. S. Debnath, J.M. Espinosa-Duran, J. Dobscha, H.D. Castillo, S.L. Tait, A.H. Flood, P. Ortoleva, K. Raghavachari

11:40 COLL 559. Stimuli responsive phase behavior in hydrogen-bonded bicomponent supramolecular networks. G. Velpula, J. Teyssandier, K.S. Mali, S. De Feyter

12:00 COLL 560. Structural transformations and self-assembly of interfacial methanol ice on hydrophobic surfaces. D. Yang, X. He

Section E

Moscone Center
2010

ACS Award for Research at an Undergraduate Institution: Symposium in honor of Maria Hepel

S. Andreescu, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 COLL 561. Electroanalytical characterization of environmental chemical processes of engineered nanoparticles. A. Karimi, K. Kirk, E. Andreescu

8:55 COLL 562. Search for new properties and applications of micro- and nanohydrogels. M. Karbarz, E. Zabost, K. Kaniewska, M. Mackiewicz, K. Marcisz, Z. Stojek

9:15 COLL 563. Quasi-adiabatic proton exchange membrane fuel cell fixture for automotive cold-starts. C.A. Rice, A.O. Pistono

9:35 COLL 564. Nanocarbon bowls: Functionalization, structures, applications. M.A. Petrukhina

9:55 Intermission.

10:10 COLL 565. Functionalized porous organometallic compounds as inhibitor of cell division. S. Bashir, B. Martinez, J.L. Liu

10:30 COLL 566. Relationship between phosphorous and metals in Lake Auburn. A. Bazilio

10:50 COLL 567. Characterization of three pathogenic L-ferritin mutants that cause neuroferritinopathy. F. Bou-Abdallah

11:10 COLL 568. Thread- and paper-based devices for use in enzyme assays for Point-of-Care (POC) diagnostic devices. A. Gonzalez, M. Gaines, C. Liu, L. Estala, F.A. Gomez

11:30 COLL 569. Modification of the paper-based NanoCerc antioxidant assay for high-throughput use: An analysis of twenty-four green teas for antioxidant activity throughout six consecutive infusions. E. Sharpe, F. Hua, S. Schuckers, E. Andreescu, R. Bradley

Section F

Moscone Center
2012

Applied Biosensing Based on Functional Colloids

R. Alvarez Puebla, W. Parak, J. Sagalés, G. F. Strouse, *Organizers*

L. Liz Marzan, *Organizer, Presiding*

8:30 COLL 570. Genome-wide DNA methylation variations upon engineered nanomaterials and their implications in nanosafety assessment. S. Liu

9:00 COLL 571. Catalytic enhancement of multi-enzyme cascades co-localized on colloidal quantum dots. J. Vranish, M. Ancona, E. Oh, I. Medintz

9:20 COLL 572. Antibiofouling manganese oxide nanoparticles: Synthesis, characterization, and potential applications for T₂-weighted MR imaging of tumors. X. Shi, P. Wang, J. Yang, B. Zhou, Y. Hu, F. Xu, L. Xing, M. Shen, G. Zhang

9:40 COLL 573. Quantum dot (QD)-fullerene (C₆₀) conjugates for imaging real-time changes in cellular membrane potential. O.K. Nag, M. Stewart, A. Huston, J. Delehanty, A. Efros, K. Susumu, P. Dawson

10:10 COLL 574. Cerium oxide nanoparticles as novel biosensing tools: Properties, sensing mechanism and applications. A. Othman, G. Bulbul, A. Hayat, E. Andreescu

10:30 COLL 575. GlycoNanoparticle barcodes for pathogen identification. M.I. Gibson

Section G

Moscone Center
2001

Chemistry & Physics of Tribology

Lubricants & Lubrication: From Macro to Nano

M. Ruths, *Organizer*

F. Mangolini, *Organizer, Presiding*

J. Yu, *Presiding*

8:30 COLL 576. Friction and lubrication from the nano (molecular) through the micro (µm-mm) to the macro (geological) scales, and over large time and velocity scales. J.N. Israelachvili

9:05 COLL 577. Nanorheology of complex fluids at interfaces: Bulk behavior and complex slip length. B. Cross, C. Barraud, F. Restagno, E. Charlaix

9:25 COLL 578. Binary and ternary systems with ionic liquids in confinement. M. Han, R.M. Espinosa-Marzal

9:45 COLL 579. Shear banding of piezoviscous fluids as a stability problem. B. Galiniche, L. di Mare, J. Wong

10:05 COLL 580. Local rheology of lubricants. J. Wong

10:25 COLL 581. Anomalous spreading kinetics of polymer lubricant films. C.M. Mate, B.A. Noble, B. Raeymaekers

10:45 COLL 582. Quantitative analysis of Raman spectra of fatty acid lubricants under pressure. R.X. Rammeloo, K. Guha, C.D. Bain

11:05 COLL 583. Controlling friction and adhesion using two-dimensional responsive microgels. S. Giasson

11:25 COLL 584. Interfacial properties of fluid lubricants on bearing material surfaces. J.M. Helt

11:45 COLL 585. Formulation chemistry for ultra-stable ester-based oils. T.E. Karis

12:05 COLL 586. Relation between adsorption and nanoscale tribological performance of organic friction modifiers. A. Pham, P. Nalam, V. Castillo, B. Thiebaut, R.M. Espinosa-Marzal

Section H

Moscone Center
2003

Deposition & Etching of Nanostructures

Cosponsored by INOR

L. McElwee-White, A. V. Walker, *Organizers*

H. Fairbrother, *Organizer, Presiding*

8:30 COLL 587. Plasma-assisted atomic layer deposition for energy conversion and storage devices. M. Creatore

9:00 COLL 588. Tin alkyls as a tin source in hybrid molecular beam epitaxy. T. Wang, R.P. Harkins, A. Prakash, C.J. Cramer, B. Jalan, W.L. Gladfelter

9:20 COLL 589. Evidence for surface-plasmon-mediated precursor dissociation in ultrashort-pulsed-laser-induced surface chemistry. S. Randolph, M. Straw, A. Botman, J. Filevich

9:50 Intermission.

10:05 COLL 590. Metalorganic chemical vapor deposition of 2D materials: Challenges and new approaches. J. Redwing

10:35 COLL 591. Atomic Layer Etching (ALE) using sequential thermal reactions: Atomic Layer Deposition (ALD) in reverse. S.M. George, Y. Lee, J. DuMont, N. Johnson, D. Zywotko

10:55 COLL 592. Sequential infiltration synthesis for nanoscale patterning. J. Elam, S.B. Darling, Y. Tseng, Q. Peng, M. Biswas, J. Libera, A. Mane, L. Ocola

Section I

Moscone Center
2005

Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion

Financially supported by MilliporeSigma-Energy Materials; CH Instruments, Inc.; The University of Alabama (Chemistry, College of Arts & Science)

N. Hammer, S. Pan, *Organizers*

S. Pan, *Presiding*

8:30 COLL 593. Insight into the recombination kinetics of colloidal silicon nanocrystals. S. Brown, J.B. Miller, E. Hobbie

8:50 COLL 594. Simultaneous time-dependent surface enhanced Raman spectroscopy, metabolomics and proteomics reveal cancer cell death mechanisms associated with Au-nanorod photo-thermal therapy. Y. Wu, M.R. Aili, M.A. El-Sayed

9:10 COLL 595. Synthesis of gold nanoprism with dual effects of plasmon resonance and non-linear optical property to improve the performances of organic solar cell. B. Gong, Y. Tai

9:30 COLL 596. Three dimensionally assembled gold nanostructures for visible light-driven water oxidation. H. Son, Y. Nam

9:50 Intermission.

10:00 COLL 597. Plasmon-coupled resonance energy transfer: A real-space real-time computational electrodynamic approach. W. Ding, L. Hsu, G.C. Schatz

10:20 COLL 598. Development and molecular understanding of Plasmonic Photothermal Therapy (PPTT) in combating cancer. M.R. Aili, M.A. El-Sayed

10:40 COLL 599. Assembly of ring-like nanostructure arrays via drop evaporation method. Y. Bao, N. Scherer, T. Witten

11:00 COLL 600. Photo-oxidative degradation of single giant quantum dots. N. Orfield, S. Majumder, J.R. McBride, J.A. Hollingsworth, H. Htoon

11:20 COLL 601. Highly sensitive surface-enhanced Raman scattering substrate of Ag thin film fabricated by gas-timing RF magnetron sputtering. C. Sapcharoenkun, A. Klamcheun, A. Treetong, P. Kasamechonchung, T. Wutikhun, P. Ukahapunyakul

11:40 COLL 602. ALD-protected polyoxometalate water oxidation catalysts immobilized on light-absorbing metal oxide thin films for enhanced durability and photocurrent density. S.M. Lauinger, B. Piercy, W. Li, M.D. Losego, D. Wang, C.L. Hill

Section J

Moscone Center
2007

ACS Award in Colloid Chemistry: Symposium in honor of Nicholas A. Kotov

P. Podsiadlo, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 COLL 603. Nanoparticles' interactions with viruses. F. Stellacci

9:05 COLL 604. Nanoscale metal-organic frameworks: Emerging materials for catalysis. Z. Tang

9:35 COLL 605. Molecular mechanisms in formation of metal oxide colloids in sol-gel processes. V. Kessler, G. Seisenbaeva

10:05 Intermission.

10:15 COLL 606. Toward the self-assembly of layered multi-nano-composite films with complex anisotropies. R. Blell, M. Rémi, H. Hu, S. Bharani, V. Lemaire, M. Pauty, O. Félix, G. Decher

10:45 COLL 607. Surface enhanced Raman scattering on cuprous oxide nanomaterials. C. Jiang

11:15 COLL 608. Seeded growth and chemical transformations in metal nanoparticles. L. Liz Marzan

11:45 Concluding Remarks.

Mineral-Water Interface Chemistry

Sponsored by GEOC, Cosponsored by COLL and ENVF

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Molecular & Bio-Inspired Photocatalysts

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

Functional Lignocellulosics & Nanotechnology

Tuning Interfacial Phenomena with Ligno-Nanocellulosic Materials

Sponsored by CELL, Cosponsored by CARB and COLL

Elucidation of Mechanisms & Kinetics on Surfaces

Electrons

Sponsored by CATL, Cosponsored by COLL and ENVF

TUESDAY AFTERNOON

Section A

Moscone Center
2002

ACS Award Lectures

Cosponsored by CATL and WCC

R. Nagarajan, *Organizer*

H. Fairbrother, *Presiding*

2:00 Introduction of Awardee.

2:05 COLL 609. Award Address (ACS Award in Colloid Chemistry sponsored by Colgate-Palmolive Company). Self-assembly of nanoparticles. N. Kotov

2:50 Introduction of Awardee.

2:55 COLL 610. Award Address
(ACS Award in Surface Chemistry sponsored by the ACS Division of Colloid & Surface Chemistry). Understanding of selective oxidation catalysis through surface science. C.M. Friend

3:40 Introduction of Awardee.

3:45 COLL 611. Award Address
(ACS Award for Research at an Undergraduate Institution sponsored by Research Corporation for Science Advancement). From nanogravimetry, photovoltaics, and plasmonics to elastic light scattering and Raman spectroscopy for theranostics and environmental remediation. M.R. Hepel

4:30 Introduction of Awardee.

4:35 COLL 612. Nano Letters Award
Lecture: Cool chemical transformations and hot carrier upconversion: Emerging plasmonic methods to improve renewable energy technologies. J. Dionne

Section B

Moscone Center
2004

Deposition & Etching of Nanostructures

Cosponsored by INOR

H. Fairbrother, L. McElwee-White, *Organizers*

A. V. Walker, *Organizer, Presiding*

2:00 COLL 613. Cage molecule self-assembly. P.S. Weiss

2:30 COLL 614. Development of photo-activated iodo-ene reaction for molecular layer deposition. M. Lillethorup, D.S. Bergsman, S.F. Bent

2:50 Intermission.

3:05 COLL 615. Perfluoropentacene films on gold surfaces grown by supersonic molecular beam deposition. A. Yavuz, N. Sohrabnia, G. Bracco, M. Danisman

3:25 COLL 616. Patterning diverse metallic materials directly from solution using laser thermal voxels. L.D. Zarzar, B. Swartzentruber, B. Donovan, P. Hopkins, B. Kaehr

3:45 COLL 617. Hybrid Monte Carlo and continuum modeling of electron-beam induced processes using liquid reactants. T.T. Hastings, S. Estandiarpour, E. Cao, S. Lami

Mineral-Water Interface Chemistry

Sponsored by GEOC, Cosponsored by COLL and ENVR

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Novel Photocatalytic & Photoelectrode Materials

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

Functional Lignocellulosics & Nanotechnology

Dispersions, Gels, Foams, Colloids & Films

Sponsored by CELL, Cosponsored by CARB and COLL

Elucidation of Mechanisms & Kinetics on Surfaces

Organic Oxygenates

Sponsored by CATL, Cosponsored by COLL and ENVR

WEDNESDAY MORNING

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

J. Katsaras, S. Muralidharan, A. N. Parikh, N. Srividiya, *Organizers*

M. Nieh, *Organizer, Presiding*

J. Nickels, *Presiding*

8:30 COLL 618. Examining cell migration and cell junction dynamics using polymer gel-supported lipid bilayers. K.D. Shilts, Y. Ge, C. Naumann

8:50 COLL 619. Artificial biomembrane microsystems for highly sensitive analysis of membrane proteins. R. Watanabe

9:15 COLL 620. Synthesis and characterization of supported lipid bilayer membranes from complex lipid mixtures. G. Hardy, J. Shapter, M. Alam, S. Zauscher

9:40 COLL 621. Modulation of lipid membrane structure and dynamics in the presence of amyloid- β peptide. T. HauB, M.A. Barrett, N.A. Dencher

10:05 COLL 622. Probing membrane protein organization and dynamics in planar model membranes using single molecule-sensitive confocal detection techniques. C. Naumann, Y. Ge, K. Shilts

10:30 COLL 623. Fusion processes of proteoliposomes into supported planar lipid bilayers. R. Tero, K. Fukumoto, M. Yoshida, A. Hirano-Iwata, M. Niwano

10:55 COLL 624. Topographic control of membrane functions. R. Ashkar, M. Zhermenkov, R.G. Toomey, R. Pynn, J. Katsaras, J. Carrillo, B. Sumpter

11:20 COLL 625. Tubule formation and retraction in the interaction of supported lipid bilayers with SDS. E.J. Eis, J. Churchwell, M. Staykova, C.D. Bain

11:45 COLL 626. Interfacial structure of water confined between phospholipid-coated surfaces probed by infrared-visible Sum Frequency Generation (SFG) spectroscopy. N. Dhopatkar, X. Shi, J. Brown, X. Li, A.W. Smith, A.N. Dhinojwala

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

Synthesis & Growth

Y. Sun, S. Wu, *Organizers*

H. Fan, H. Htoon, *Organizers, Presiding*

8:30 COLL 627. In situ study of colloidal nanoparticle growth and assembly. H. Zheng

9:00 COLL 628. Polymer-assisted deposition: A simple process for a wider range of electronic materials. Q. Jia

9:30 COLL 629. *In situ* Variable-Temperature Liquid Cell Transmission Electron Microscopy (VT-LCTEM) study of size-stabilized Covalent Organic Framework (COF) nanoparticle nucleation and growth during solvothermal synthesis. L.R. Parent, B.J. Smith, C. Park, W.R. Dichtel, N.C. Gianneschi

9:50 COLL 630. Paramagnetically amplified optical activity of chiral nanoparticles. J. Yeom, A. Farias de Moura, N. Kotov

10:10 COLL 631. Photoluminescence blinking and polarization anisotropy of single colloidal semiconductor nanoplatelets. Z. Hu, A. Singh, J.A. Hollingsworth, H. Htoon

10:30 COLL 632. Migration and structural evolution of carbon-encapsulated Fe nanoparticles via *in situ* TEM. R.V. Grieshaber, Z. Liu, J. Yang

10:50 COLL 633. Two-phase synthesis of metal sulfide nanoparticles. L. Bian, J. Maier, S. Marra, K. Ring, P. Goulet

11:10 COLL 634. Multi-shelled metal oxides hollow microspheres: Synthesis and applications. D. Wang, J. Wang, R. Yu, H. Zhao

11:40 COLL 635. Effect of ligand asymmetry in the properties of nanoparticle membrane. X. Lin, Z. Jiang, J. Wang, S. Deshmukh, P. Karjanaboos, G. Kamath, Y. Wang, H. Chan, B. Narayanan, S. Sankaranarayanan, H. Jaeger

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Technique Development in Interfacial Science

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

8:30 COLL 636. High-energy-resolution x-ray absorption spectroscopy: A powerful method to push the frontiers of in-situ x-ray absorption spectroscopy of catalysis. S.R. Bare, D. Sokaras, T. Kroll, A. Gallo, A.S. Hoffman, B.C. Gates

9:00 COLL 637. Degree of rate control: A tool for analyzing microkinetic models and high-throughput computational screening of catalyst materials. C.T. Campbell, Z. Mao

9:30 COLL 638. High spatial resolution mapping of catalytic reactions on single nanoparticles. E. Gross

10:00 COLL 639. Monitoring real-time dynamics of nanoparticle formation via trading space with time strategy and synchrotron x-ray absorption spectroscopy technique. S. Bakhti, N. Destouches, M. Ahmed, S. Alayoglu

10:30 COLL 640. Time-resolved characterization of hierarchical diffusion and reactions in acidic zeolites and zeotypes with Temporal Analysis of Products (TAP) experiments. E. Redekop, J. Martinez, M. Morten, B.T. Bleken, R. Fushimi, M. Mykland, U. Olsbye

11:00 COLL 641. Solution calorimetry methods for the study of catalytic solid-liquid interfaces. R.M. Rioux

Section D

Moscone Center
2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

A. H. Flood, *Organizer*

S. L. Tait, *Organizer, Presiding*

8:30 COLL 642. Tuning the physical properties of MoS₂ membranes through organophosphonate-based surface functionalization. S. Schwarzwälder, R. Csiki, S. Zhao, K. Larsson, J. Schwartz, M. Stutzmann, U. Wurstbauer, A. Cattani-Scholze

8:50 COLL 643. Bottom-up hierarchical self-assembly of zwitterionic dendrimers into stimuli responsive dynamic nanotubes. S. Eghtesadi, M. Kashfipour, X. Sun, S. Lillard, T. Liu

9:10 COLL 644. 2D phase evolution and solvation in dimethyl formamide-lithium ethylene dicarbonate films on Ag(111). J.E. Reutt-Robey

9:40 COLL 645. Functionalization of 2D materials: The molecular approach. S. De Feyter

10:10 COLL 646. Supramolecular arrays and heterostructures on hexagonal boron nitride. P. Beton, V. Korolokov, J. Kerfoot, M. Baldoni, N. Besley, E. Besley, N.R. Champness, L. Yang, T. Taniguchi, K. Watanabe

10:40 COLL 647. Self-assembly and post-assembly chemical transformation of reactive compositionally patterned monolayers. M. Zimmt, C. Fang, J. He, R.A. Shelp, Y. Yang

11:10 COLL 648. Hierarchy in the self-assembly of novel chiral dyes for photovoltaic applications. D. Amabilino, F. Pop

11:40 COLL 649. Structure and function of bilayer organic photovoltaics. M.E. Thompson

Section E

Moscone Center
2010

Basic Research in Colloids, Surfactants & Nanomaterials

Biomolecular Systems

R. Nagarajan, *Organizer*

K. S. Raja, *Presiding*

8:30 COLL 650. Biophysical properties of salt-induced simple coacervation of interfacial mussel adhesive proteins. B. Yang, H.J. Cha

8:50 COLL 651. Effect of additives on the crystal morphology of amino acids: A theoretical and experimental study. E. Constance, M. Mohammed, K. Aslan

9:10 COLL 652. Adsorption behaviors of mussel proteins on biomaterials with different surface chemistries: A fundamental understanding of mussel inspired adhesive designs. Y. Wei, C. Lin, Y. Lai, Y. Tang, P. Wang, D. Li, Y. Huang

9:30 COLL 653. Sponge mimetic tubules: Programmable stigmergy scaffolds for 3D marine, mammalian cell culture and bioelectronics. K.S. Raja, K. Punia

9:50 COLL 654. Dynamic interactions of amelogenin with hydroxyapatite surfaces are dependent on protein phosphorylation and solution pH. **A.E. Gerdon**, C.P. Connelly, T. Cicuto, J.D. Leavitt, A. Petty, A. Litman, H. Margolis

10:10 COLL 655. Investigation of oligomerization of amyloidogenic peptides at nanoscale gold colloidal interface. **K. Yokoyama**

10:30 COLL 656. Hydrodynamic effects in concentrated protein solutions with repulsive and attractive interactions. **D. Corbett**, P.J. Davis, C. van der Walle, S. Uddin, A. Pluen, R. Curtis

10:50 COLL 657. Effects of macromolecular crowding on a coacervation-based model for intracellular organization. **A. Marianelli**, B. Miller, C.D. Keating

11:10 COLL 658. Effects of phosphatidylcholine vesicles on adsorption kinetics at an air-water interface. **J. Staton**, S.R. Dungan

11:30 COLL 659. New colloidal approaches for human norovirus cleanup and deactivation using surfactants and copper-ion based disinfectants. **B. Mertens**, M. Moore, L. Jaykus, O.D. Velev

11:50 COLL 660. Spin selectivity in DNA-mediated charge transport: Base sequence and structure relationships. **J. Abendroth**, N. Nakatsuka, M. Ye, D. Kim, E. Fullerton, A.M. Andrews, P.S. Weiss

Section F

Mosccone Center
2012

Applied Biosensing Based on Functional Colloids

R. Alvarez Puebla, L. Liz Marzan, W. Parak, J. Sagalés, G. F. Strouse, *Organizers*

N. Feliu, *Presiding*

8:30 COLL 661. Connecting the triangle. **J. Sagalés**

8:50 COLL 662. Optical visualization and quantification of enzyme activity using dynamic droplet lenses. **L.D. Zarzar**, J. Kalow, X. He, J. Walsh, T.M. Swager

9:10 COLL 663. Sandwich immunoassays for infectious disease diagnostics using noble metal nanoparticles. **C. Yen**, H. de Puig, J.O. Tam, M. Sanchez, M. Carre, J. Gomez-Marquez, I. Bosch, L. Gehrke, **K. Hamad-Schifferli**

9:40 COLL 664. Measuring heparin activity with a nanoparticle-functionalized catheter. **J. Wang**, F. Chen, **J.V. Jokerst**

10:10 COLL 665. Highly quenching nickel-gold core-shell magnetic plasmonic nanoparticles for biosensing. **P.N. Vakil**, G.F. Strouse

10:30 COLL 666. Enhanced energy coupling within a nanometal plasmon field for molecular ruler and in-vitro event mapping technologies. **G.F. Strouse**

Section G

Mosccone Center
2001

Chemistry & Physics of Tribology

Biotribology, Biomimetic Systems & Lubrication in Aqueous Media

F. Mangolini, M. Ruths, *Organizers*

B. Krick, J. Wong, *Presiding*

8:30 COLL 667. Updating the mechanics of cartilage and joint lubrication. **D. Burris**

9:05 COLL 668. Colloid-probe AFM on gels and humidity-dependent AFM on hydrophilic networks: Aqueous tribology and glass-rubber transitions. **G.D. Haugstad**

9:25 COLL 669. Nanotribological studies of polymer brushes fabricated by near-field and interferometric lithography. **Z. Zhang**, O. Al Jaf, S.P. Armes, **G.J. Leggett**

9:45 COLL 670. Wear protection without surface modification: Is it possible? **X. Banquy**, J. Faivre, B. Shrestha, J. Burdyska, G. Xie, F. Moldovan, L. David, T. Delair, S. Benayoun, K. Matyjaszewski

10:05 COLL 671. Effect of multivalent counterions to the structure and lubrication properties of polystyrene sulfonate brushes. **J. Yu**, M.V. Tirrell

10:25 COLL 672. Tactile and hair-hair friction behavior of hair fibers. **N. Nordgren**, L. Skedung, N. Baghdadi, M.W. Rutland, **G.S. Luengo**

10:45 COLL 673. Effects of 3D surface patterning on the tribology of human stratum corneum and the topology of a polyurethane skin surface model. **R. Jin**, I. Liao, X. Xu, C. Cazeneuve, J.C. Chang, J. Langer, **M. Ruths**, **G.S. Luengo**

Section H

Mosccone Center
2003

Basic Research in Colloids, Surfactants & Nanomaterials

Nanomedicine

R. Nagarajan, *Organizer*

K. Slowinska, *Presiding*

8:30 COLL 674. Harnessing shape and bi-specific antibodies for improved cell-targeting efficiency of poly(ethylene glycol) capsules. **D. Song**, J. Cui, Y. Ju, H. Sun, K. Thurecht, F. Caruso

8:50 COLL 675. Galactin-1-based tumor-targeting for gold nanostructure mediated theranostics. **S.V. Jenkins**, D. Nedosekin, R. Dings, J. Chen, R. Griffin

9:10 COLL 676. Stem cell/nanoparticle conjugates for targeted cancer therapy. **J.M. Berlin**

9:30 COLL 677. Thermo-responsive hybrid peptide nanoparticles in targeting-free cell selection and uptake. **K. Slowinska**

9:50 COLL 678. Screening of prostate cancer cells using Zn(II) sensing SERS nanoprobe. **P.C. Ray**

10:10 COLL 679. Drug delivery using layered structured nanomaterials. **J.L. Colon**, J. Gonzalez, Y. Kan, V. Bakhmoutov, A. Clearfield

10:30 COLL 680. Probing the stability of liposomal spherical nucleic acids for therapeutic design. **B. Meckes**, R. Banga, C.A. Mirkin

10:50 COLL 681. Development and characterization of free-standing nano films loaded with iron nanoparticles for magnetic drug targeting. **M. Sakuragi**, H. Murayama, K. Taguchi, K. Kusakabe

11:10 COLL 682. Synthesis and biomedical application of metal and metaloxide nanocrystals. **Q. Zhang**, S. Tong, Y. Hu, G. Bao, **V. Colvin**

11:30 COLL 683. Nanolipoprotein particles for delivery of therapeutics to the brain. **S.F. Gilmore**, N.A. Be, H.A. Enright, M.A. Malfatti, A. Rasley, J. Osburn, S. Peters, N.O. Fischer

11:50 COLL 684. Formulation and study of highly stable, semifluorinated nanoemulsions with theranostic applications. **A.R. Barres**, S. Mecozzi

Section I

Mosccone Center
2005

Basic Research in Colloids, Surfactants & Nanomaterials

Polymer Materials & Gels

R. Nagarajan, *Organizer*

T. J. McCarthy, *Presiding*

8:30 COLL 685. Ice adhesion reducing polymers and prepolymers based on siloxanes and F-POSS. **R. Simons**, S. Li, L. Russel, S. Bateman, J. Seebergh, D. Berry

8:50 COLL 686. Withdrawn.

9:10 COLL 687. Rediscovering silicenes: Water repellency and water permeability. **P. Bian**, **T.J. McCarthy**

9:30 COLL 688. Development of new multi-functional polycarbonate platforms. **N. Park**, J. Hedrick

9:50 COLL 689. Withdrawn.

10:10 COLL 690. Directly linear alignment as different deacetylation of chitosan under electric field. **Y. Chun**, Y. Ko, T. Do, U. Choi

10:30 COLL 691. Stimuli-responsive cyclodextrin-modified microgels: Functional carriers with dynamic crosslinks and binding domains. **A. Pich**, D. Schmitz

10:50 COLL 692. Shape stability and mechanical properties of rhombic dodecahedron multilayer hydrogel capsules at various pH. **N. Gupta**, J. Chen, V.A. Kozlovskaya, B. Xue, E.P. Khariampieva

11:10 COLL 693. Synthesis of monolithic $Cu_2(OH)_2Br$ aerogels. **T.M. Fears**, J.D. Colvin, S.O. Kucheyev

11:30 COLL 694. Synthesis of poly(2-methoxyethyl acrylate)-based hydrogel particles for bio-coatings and carriers. **T. Kureha**, D. Suzuki

11:50 COLL 695. Gelation of vegetable and mineral oils by an efficient and versatile low-molecular-mass gelator. **D. Bajani**, J. Dey

Bio-based Gels & Porous Materials

Biopolymer Hydrogels

Sponsored by CELL, Cosponsored by AGFD, CARB, COLL, PMSE and POLY

Deposition & Etching of Nanostructures

Sponsored by INOR, Cosponsored by COLL

Evolving Nanoparticle Reactivity throughout Nucleation, Growth & Dissolution

Sponsored by GEOC, Cosponsored by COLL, ENVR and NUCL

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Spectroscopy & Microscopy of Photocatalytic & PEC Materials

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

Chemical Principles of Environmental, Cellular & Organismal Nanotoxicology

Sponsored by ENVR, Cosponsored by COLL

Mineral-Water Interface Chemistry

Sponsored by GEOC, Cosponsored by COLL and ENVR

Functional Lignocellulosics & Nanotechnology

Dispersions, Gels, Foams, Colloids & Films

Sponsored by CELL, Cosponsored by CARB and COLL

Elucidation of Mechanisms & Kinetics on Surfaces

Organic Oxygenates

Sponsored by CATL, Cosponsored by COLL and ENVR

WEDNESDAY AFTERNOON

Section A

Mosccone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

J. Katsaras, *Organizer, Presiding*

R. Ashkar, *Presiding*

2:00 COLL 696. Preparation, characterization, and application of nanopore-supported phospholipid bilayers. **D. Bryce**, J.P. Kitt, J.M. Harris

2:20 COLL 697. Biomimetic construction of phospholipid membranes. **R.J. Brea Fernández**, C.M. Cole, A.K. Rudd, N.K. Devaraj

2:45 COLL 698. Interplay of structure and dynamics in mixed lipid bilayers. **E.G. Kelley**, R. Ashkar, R. Bradbury, P. Butler, M. Nagao

3:10 COLL 699. Neutron scattering to study membrane systems: From lipid vesicles to living cells. **J. Nickels**, S. Chatterjee, C.B. Stanley, S. Qian, X. Cheng, D. Myles, R.F. Standaert, J. Elkins, J. Katsaras

3:35 COLL 700. Human lipoproteins at model cell membranes: Role of the lipoprotein class on lipid dynamics. **K. Browning**, T. Lind, S. Maric, S. Malekhaat-Häffner, G.N. Fredrikson, E. Bengtsson, M. Malmsten, M. Cardenas

4:00 COLL 701. Lipoprotein structure dependency on lipid cargo and exchange dynamics: Implications for atherosclerosis development. **S. Maric**, T. Lind, J. Lyngso, E. Bengtsson, G.N. Fredrikson, M. Moulin, M. Haertlein, T. Forsyth, J. Pedersen, M. Cardenas

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4:25 COLL 702. Probing the structure and dynamics of proteins using neutron scattering. **M. Sharp**

4:50 COLL 703. Effect of cholesterol on the elastic and viscous properties of dimyristoylphosphatidylcholine bilayers. **R. Bradbury, M. Nagao, E.G. Kelley**

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

Y. Sun, S. Wu, *Organizers*

H. Fan, H. Htoon, *Organizers, Presiding*

2:00 COLL 704. Observation of nucleation and growth during the formation of cadmium selenide and iron oxide nanoparticles and their use for biomedical imaging. **H. Weller**

2:30 COLL 705. Suppressed-blinking green-emitting giant quantum dots: From synthesis to structure to function. **J.A. Hollingsworth, N. Mishra, N. Orfield, J.R. McBride, C. Hanson, S. Click, Z. Hu, H. Htoon**

3:00 COLL 706. Tunable quasi-amorphous photonic materials with pigmentary colloidal nanostructures. **J. Han, E. Lee, J. Dudoff, M. Bagge-Hansen, J.R. Lee, A.J. Pascall, J.D. Kuntz, T. Willey, M.A. Worsley, Y.J. Han**

3:20 COLL 707. Chemical intercalation of superatomic solids. **E. O'Brien, X. Roy**

3:40 COLL 708. Self-assembly of nanoparticles via co-crystallization with proteins. **H. Kim, V. Colvin**

4:00 COLL 709. Reversible and precise self-assembly of Janus metal-organosilica nanoparticles through a linker-free approach. **H. Hu, Q. Zhang**

4:20 COLL 710. New class of branched and nanofibrous dendrimeric polymer particles with extraordinary adhesive and structure-building capabilities. **S. Roh, S.D. Stoyanov, O.D. Velev**

4:40 COLL 711. Controlling size in nanoparticle syntheses using the extended LaMer mechanism. **D. Huber**

5:10 COLL 712. Colloidal superparticles from colloidal crystallization in closed systems. **Y.C. Cao**

Section C

Moscone Center
2006

Molecular Surface Science, Nanomaterials & Catalysis: Symposium in honor of Gabor Somorjai at 80

Electrons & Photons in Interfacial Science

Cosponsored by CATL

S. H. Kim, R. M. Rioux, *Organizers, Presiding*

2:00 COLL 713. Surface bonding and chemistry for pyridine-catalyzed CO₂ reduction on GaP. **B.E. Koel**

2:30 COLL 714. Intercalation of metal ions into the interlayer region of layered manganese oxide for improved water oxidation electrocatalysis. **D.R. Strongin, A.C. Thenuwara, S. Shumlas, I.G. McKendry, R.C. Remsing, M. Zdilla, Q. Kang, M.L. Klein, E. Borguet, N. Attanayake, J. Sun, L. Frazier**

3:00 COLL 715. Understanding the surface reactions of the lithium-air battery and its consideration for usage in an automotive application. **C.J. Brooks, Q. Xu, E. Kreidler**

3:30 COLL 716. Experimental and computation studies of the reaction of hydrogen and organic peroxide on molybdenum hydrogen bronze surfaces. **N.F. Materer, A.W. Apblett**

4:00 COLL 717. Systematic approaches to modify the surface and electronic structure of TiO₂ nanocrystals. **C. Balasanthiran, S. Varapragasam, S. Mia, R.M. Rioux, J.D. Hoefelmeyer**

4:30 COLL 718. Photoelectrical response of mesoporous metal oxides decorated with size controlled platinum nanoparticles under argon and oxygen gas. **A. Sapi, A. Kukovec, Z. Konya**

Section D

Moscone Center
2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

S. L. Tait, *Organizer*

A. H. Flood, *Organizer, Presiding*

2:00 COLL 719. 4D nanolithography using a flow-through polymer printer. **A.B. Braunschweig**

2:30 COLL 720. Colored soaps for photonics. **M. Presselt, F. Herrmann-Westendorf, M. Kaufmann, S.K. Das, M.L. Hupfer, B. Dietzek**

2:50 COLL 721. Metal-organic coordination chains at surfaces: Chemical activity of single-site transition metal centers. **S.L. Tait, C. Tempas, L. Chen, T.W. Morris, C.G. Williams, M. Wang, D.L. Wisman, B.J. Cook, A.V. Polezhaev, K.G. Caulton**

3:20 COLL 722. Computational design of metal-ligand coordination centers for catalytic applications. **T.S. Rahman**

3:50 COLL 723. Two-dimensional organic heterostructures and Co-crystals. **A. Enders**

4:20 COLL 724. Axial binding to supported metal porphyrins at the solution-solid interface. **K. Hipps, U. Mazur Hipps**

4:50 COLL 725. Development of fragment-based quantum chemical models for understanding supramolecular interactions and self-assembly. **K. Raghavachari, A. Sengupta, S. Debnath**

5:20 COLL 726. Tuning the exchange coupling of transition metal complexes to gold substrates by magnetic fields. **T. Pope, K. Yang, H. Chen, L. Liu, D. Wang, L. Tao, W. Xiao, X. Fei, H. Luo, S. Du, T. Xiang, W. Hofer, H. Gao**

5:40 COLL 727. Theoretical studies of adsorption and self-assembly of probe organic molecules at metal oxide surfaces. **X. Gong, Y. Yu, Q. Cuan**

Section E

Moscone Center
2010

Basic Research in Colloids, Surfactants & Nanomaterials

Bionanomaterials

R. Nagarajan, *Organizer*

P. Kral, *Presiding*

2:00 COLL 728. Enhanced immobilization of His-tagged enzymes using porous nickel silicate covered magnetic nanoparticles. **M. Shin, B. Kang, N. Yoon, M. Kim, J. Ki, S. Han, J. Ahn, S. Haam**

2:20 COLL 729. Diffusion of biomolecules in vesicle assembled RNA-based coacervates. **F. Pir-Cakmak, W.M. Aumiller, B. Davis, C.D. Keating**

2:40 COLL 730. Atomistic modeling of highly specific bio-active nanoparticles and micelles. **P. Kral**

3:10 COLL 731. Controlling colloidal drug aggregate stability and protein adsorption. **A. Ganesh, J. Logie, C. McLaughlin, B. Shoichet, M.S. Shoichet**

3:30 COLL 732. Investigation of silk fibroin thin films for the improvement of bioactive peptide-based biosensors. **L. Soblosky, J.R. Uzarski**

3:50 COLL 733. Oligonucleotide - peptide complexes: Phase control by hybridization. **J. Viereg, M.J. Lueckheide, A. Marciel, L. Leon, M.V. Tirrell**

4:10 COLL 734. Ultra-rapid crystallization of L-alanine using monomode microwaves, indium tin oxide, and metal-assisted and microwave-accelerated evaporative crystallization. **C. Lansiquot, Z. Boone-Kukoyl, R. Shortt, N. Thompson, H. Ajifa, B. Kioko, E. Constance, T. Clement, B. Ozturk, K. Aslan**

4:30 COLL 735. Synthesis of platinum (II) - nuclear localization sequence peptide hybrid for nanoparticle development and anticancer therapy. **M. Wlodarczyk, O. Camacho-Vanegas, S. Dragulska, A. Jarzecki, P.R. Dottino, J.A. Martignetti, A.J. Mieszawska**

4:50 COLL 736. Design and evaluation of trigger-responsive DNA-drug nanostructures. **X. Tan, X. Lu, F. Jia, X. Liu, Y. Sun, J. Logan, K. Zhang**

5:10 COLL 737. Production of protein nanofibers using new timesaving methodologies for the design of innovative biomedical applications. **N.H. Silva, T. Carvalho, A.A. Silvestre, I. Marrucho, C. Freire**

Section F

Moscone Center
2012

Basic Research in Colloids, Surfactants & Nanomaterials

Carbon Materials

R. Nagarajan, *Organizer*

J. R. Uzarski, *Presiding*

2:00 COLL 738. Carbon nanotube-quantum dot nanohybrids: Coupling with single particle control in aqueous solution. **A. Attanzio, M. Palma**

2:20 COLL 739. Fabrication of laser-induced graphene under controlled gas atmosphere - from superhydrophilic to superhydrophobic. **Y. Li, D. Luong, J. Zhang, J.M. Tour**

2:40 COLL 740. Fabrication of carbon nanotubes conductive patterns by extrusion printing method. **A. Aldabahi, M. Panhuis, C. Fan**

3:00 COLL 741. Multiplexed graphene-based nanomaterials for discriminatory sensing: A combined fundamental and applied experimental approach. **J.R. Uzarski, E. Nailon, S. McGraw, M. Wiederoder, T. Lawton, C. Bright**

3:30 COLL 742. Withdrawn.

3:50 COLL 743. Shear thickening behavior of graphene nanoplatelets and carbon nanotubes containing fumed silica suspensions. **M. Zabet, K. Trinh, H. Toghiani, T. Lacy, C.U. Pittman, S. Kundu**

4:10 COLL 744. Plasma-enhanced graphene and graphene oxide based conducting polymer composites for solar cell and biosensor applications. **A. Ungun Oksuz, S. Cogal, G. Celik Cogal, S. Tunc, F. Kuralay, S. Erten Ela, M. Ormastova, S. Ahmad**

4:30 COLL 745. Synthesis and characterization of water-based dispersions of high-purity, thin graphene oxide sheets from different graphitic sources. **D. Jasim, K. Kostarelos**

4:50 COLL 746. Bioinspired Polydopamine (PDA) chemistry meets Ordered Mesoporous Carbons (OMCs): A benign surface modification strategy for versatile functionalization. **Y. Song, G. Ye, J. Wang, K. Matyjaszewski**

Section G

Moscone Center
2001

Chemistry & Physics of Tribology Tribology in Extreme Environments & Advances in Solid Lubrication

F. Mangolini, M. Ruths, *Organizers*

X. Banquy, S. Didziulis, *Presiding*

2:00 COLL 747. Aging effects on the transient frictional behavior of MoS₂-based solid lubricants for use in extreme environments. **M. Dugger**

2:35 COLL 748. Understanding friction in MoS₂: Structure, oxidation and run-in. **J. Curry, M. Sidebottom, H. Luftman, N. Strandwitz, N. Argibay, B. Krick**

2:55 COLL 749. Lubricant effects in space system performance. **S.V. Didziulis, P.P. Frantz, V. Oklejas, J.M. Helt**

3:15 COLL 750. Interactions between oil-soluble phosphonium-phosphate ionic liquids and steel in the mixed and boundary lubrication regime. **S. Berkebile, N. Murthy, J. Mogonye**

3:35 COLL 751. Linking microstructure to wear-induced pitting corrosion in aged 2507 super duplex stainless steel. **J.M. Shockley, D. Horton, K.J. Wahl**

3:55 COLL 752. Amazing friction properties of graphene and water. **M. Salmeron, J. Park**

4:30 COLL 753. Effect of thickness and chemical reduction of graphene oxide on nanoscale friction. **J. Park, S. Kwon, H. Lee**

4:50 COLL 754. Studies of the dynamic frictional properties of 2D nanomaterials. **M.B. Elinski, Z. Liu, M. Negrito, J.D. Batteas**

5:10 COLL 755. Boron nitride nanomesh model system for stiction and adhesion. **S. Mertens**, A. Hemmi, S. Muff, O. Groening, S. De Feyter, J. Osterwalder, T. Greber

5:30 COLL 756. Understanding the influence of environment and surface patterning on the tribological behaviour of silicon-oxide containing diamond-like carbon (a-C:H:Si:O) films. **K. Koshigan**, J. Lengaigne, R. Carpick, J. Fontaine, J. Sapieha, L. Martinu

Section H

Moscone Center
2003

Basic Research in Colloids, Surfactants & Nanomaterials

Nanomedicine

R. Nagarajan, *Organizer*

M. Ruths, *Presiding*

2:00 COLL 757. Antioxidant carbon nanomaterials for treating autoimmune disorders. **L.G. Nilewski**, R. Huq, E.L. Samuel, W.K. Sikkema, R. Pautler, D.B. Corry, C. Beeton, J.M. Tour

2:20 COLL 758. Characterization of amphiphilic copolymer micelles for drug delivery. **X. Xu**, B. Gupta, S. Kaur, J. Nguyen, R. Jin, A.C. Watterson, **M. Ruths**

2:40 COLL 759. Tuning the drug uptake and release from silica nanostructures as a function of etching medium. **H. Thawani**, V. Patel, S. Singh, **A. Karakoti**

3:00 COLL 760. Filomicelles deliver retinoids and chemotherapeutics to durably control carcinoma cell fate. **P. Nair**, D.E. Discher

3:20 COLL 761. Influences of serum proteins on the uptake of Fe₃O₄ nanoparticles by human breast cancer cells. **L. Guo**, T. Wang, N. He

3:40 COLL 762. Hyperthermia properties of superparamagnetic ferrite (MFe₂O₄) nanoparticles synthesized via the thermal decomposition method. **S. Sabale**, V. Jadhav, X. Yu

4:00 COLL 763. Microwave heating of synthetic skin for potential treatment of gout using the metal-assisted and microwave-accelerated decrystallization technique. **S. Toker**, Z. Boone-Kukoyi, N. Thompson, H. Ajifa, T. Clement, B. Ozturk, K. Aslan

4:20 COLL 764. Novel platelet-repellent polyphenolic surfaces and their micropattern for platelet adhesion detection. **L. Yang**, L. Han, L. Jia

4:40 COLL 765. Modeling of polymer based micelles and DNA delivery medicines. **Y. Han**, P. Kral

5:00 COLL 766. Surface modification of nanoscale diamond for biolabeling with the nitrogen vacancy center. **P. Tran**, P.J. Sandoval, J. Hnatek, E.S. Favre, A. Arreola, A.A. Len, I. Laaguidi, A. Hernandez, D. Nordlund, **A. Wolcott**

5:20 COLL 767. Classification of bacteria by surface enhanced Raman spectroscopy and principal component analysis. **S.J. Jones**, S.S. Sinha, P.C. Ray

Section I

Moscone Center
2005

Basic Research in Colloids, Surfactants & Nanomaterials

Colloidal Assembly

R. Nagarajan, *Organizer*

S. A. Santer, *Presiding*

2:00 COLL 768. Light driven diffusion: Manipulation of particle assembly. **S.A. Santer**

2:20 COLL 769. Block copolymer morphology switch via colloidal assembly and local reorganization. **D. Wright**, J.P. Patterson, M. Touve, A. Carlini, N.C. Gianneschi

2:40 COLL 770. Tailored nanoparticles by wet chemical particle technology: From lab to pilot scale. **K. Mandel**

3:00 COLL 771. Multipole re-expansion model for assembly of dielectric particles in external electric field. **G. Goel**, A. Nayeer, A. Ranjak, S. Gupta

3:20 COLL 772. Patchy particles via cluster fusion. **Z. Gong**, T. Hueckel, G. Yi, S. Sacanna

3:40 COLL 773. Modeling of magnetization in self-assembled magnetic nanocubes. **C. Wang**

4:00 COLL 774. Reconfigurable colloids via stimulated dewetting. **M. Yousef**, T. Hueckel, G. Yi, S. Sacanna

4:20 COLL 775. Burstable nanostructured micro-raspberries: Toward redispersible, adjustable nanoparticles from dry powders. **C. Stauch**, T. Ballweg, R. Luxenhofer, K. Mandel

4:40 COLL 776. Inducing an order-order morphological transition via chemical degradation of amphiphilic diblock copolymer nano-objects. **L.P. Ratcliffe**, C. Couchon, S.P. Armes, J.M. Paulusse

Bio-based Gels & Porous Materials

Biopolymer Organogels

Sponsored by CELL, Cosponsored by AGFD, CARB, COLL, PMSE and POLY

Deposition & Etching of Nanostructures

Sponsored by INOR, Cosponsored by COLL†

Evolving Nanoparticle Reactivity throughout Nucleation, Growth & Dissolution

Sponsored by GEOC, Cosponsored by COLL, ENVR and NUCL

Light-Driven Chemistry: Photoelectrochemistry & Photocatalysis

Devices, Assemblies & Hybrid Processes

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

Functional Lignocellulosics & Nanotechnology

Responsive Materials & Biosensors

Sponsored by CELL, Cosponsored by CARB and COLL

Elucidation of Mechanisms & Kinetics on Surfaces

Mechanisms: Hydrogenation

Sponsored by CATL, Cosponsored by COLL and ENVR

WEDNESDAY EVENING

Chemical Principles of Environmental, Cellular & Organismal Nanotoxicology

Sponsored by ENVR, Cosponsored by COLL

Mineral-Water Interface Chemistry

A Tribute to Glenn Waychunas

Sponsored by GEOC, Cosponsored by COLL and ENVR

General Session

Sponsored by GEOC, Cosponsored by COLL and ENVR

THURSDAY MORNING

Section A

Moscone Center
2002

Biomembrane Synthesis, Structure, Mechanics & Dynamics

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

9:00 COLL 777. Controlled drug release from magneto-liposomes via ultrasound generation. **G. Podaru**, V. Chikan, P. Prakash

9:20 COLL 778. Mechanical characterization of self-assembled surfactant micelles at graphite surfaces via atomic force microscopy. **B.L. Micklavzina**, M.L. Longo, S. Zhang, H. He

9:40 COLL 779. Carbon nanotube enhancement of water and ion permeability of diblock copolymer membranes. **J. Sanborn**, R. Tunuguntla, X. Chen, A.N. Parikh, A. Noy

10:00 COLL 780. Shape morphogenesis in giant lipid vesicles in an osmotic field gradient. **S. Hong**, V. Sharma, V. Nguyen, D. Gettel, J. Sanborn, A.N. Parikh

10:20 COLL 781. Single-molecule detection of biomarker molecules in a nanometric gap structure with fluid lipid membrane. **K. Ando**

10:40 COLL 782. Phase separation and curvature generation in biphasic giant lipid vesicles reconstituting plant plasma membrane lipids. **S. Emami**, V. Ngassam, A.N. Parikh

11:00 COLL 783. Evaluating the interactions of lipid raft and proteins involved in phototransduction by using a micropatterned model membrane. **Y. Tanimoto**

11:20 COLL 784. Morphological consequences of surface-mediated spinodal decomposition inside giant vesicles. **W. Su**, D. Gettel, M. Chabanon, S. Hong, P. Rangamani, A.N. Parikh

11:40 COLL 785. Small molecule induced fusion of a model protocell membrane composed of fatty acids: A new insight into the membrane fusion monitored through fluorescence lifetime imaging microscopy. **N. Kundu**, N. Sarkar

Section B

Moscone Center
2004

Colloidal Nanoparticle Synthesis & Assembly

H. Fan, H. Htoon, Y. Sun, S. Wu, *Organizers*

F. Bai, Y. Jang, *Presiding*

8:30 COLL 786. Modeling nanoparticle assembly: Using polymer coatings, interfaces, and pressure to build 1D, 2D, and 3D nanostructures. **J.M. Lane**

9:00 COLL 787. Constructing theranostics based on fluorescent carbon nanodots. **Z. Sun**

9:30 COLL 788. Engineering bimetallic nanocrystals as artificial enzymes for colorimetric detection of disease biomarkers. **X. Xia**, H. Ye

10:00 COLL 789. Tuning functional nanoparticulate and nanoporous structures using atomic layer deposition. **Y. Jiang**

10:20 COLL 790. Atomistic modeling of nanoparticle formation, modification and self-assembly in liquid cells. **P. Kral**

10:40 COLL 791. Modeling of self-assembly dynamics of charged nanoparticles in liquid cells. **F. Sanoj**

11:00 COLL 792. Modeling the nucleation and growth of palladium nanoparticles in the presence of capping ligands. **S. Mozaffari**, W. Li, C. Thompson, A.M. Karim

11:20 COLL 793. Cellulose nanocrystal-derived stimulus-responsive cholesteric microgels having catalytic properties. **S. Cho**, Y. Li, M. Seo, E. Kumacheva

11:40 COLL 794. Controlled self-assembly of porphyrin and applications. **F. Bai**

Section C

Moscone Center
2006

Basic Research in Colloids, Surfactants & Nanomaterials

Surface Studies

R. Nagarajan, *Organizer*

T. Lawton, *Presiding*

8:30 COLL 795. Probing heterogeneity and bonding at silica surfaces through single-molecule investigation of base-mediated linkage failure. **K. Lupo**, D. Hinton, J. Ng, N. Padilla, R.H. Goldsmith

8:50 COLL 796. Balancing multiple orthogonal functions simultaneously on a single surface. **T. Lawton**, J.R. Uzarski, S. Filocamo

9:10 COLL 797. Optimization of micro/nanocapsules attachment by tailoring the surface nature of textiles. **W. Akbar**, R. Ihnfeldt, **G. Basim**

9:30 COLL 798. Determining optimum surface preparations to control the selectivity of ethanol chemistry over TiO₂/Au(111). **A. Baber**, D. Boyle, J. Wilke, V.H. Lam

9:50 COLL 799. Directing and morphing bouncing water droplets using chemically patterned surfaces. **T. Dong**, T.J. McCarthy

Technical program information known at press time.

The official technical program for the 253rd ACS National Meeting is available at: www.acs.org/SanFran2017

† Cooperative Cosponsorship

10:10 COLL 800. Rapid covalent surface modifications using the Piers-Rubinsztajn reaction. **D. Flagg**

10:30 COLL 801. Single-nanogap level characterization of ultra-dense Nanogap-Enhanced Raman Scattering (NERS) array surface. **Y. Suh**

10:50 COLL 802. Reactions of persistent carbenes with silicon surfaces. **A.V. Zhukhovitskiy**, M. Mavros, K.L. Queeney, T. Wu, T.A. Van Voorhis, J.A. Johnson

11:10 COLL 803. On the role of non-bulk interfacial structures in rutile-anatase TiO₂ interfaces. **M. Nolan**, K.A. Gray

11:30 COLL 804. *In situ* chemical imaging of energy and environmental interfaces. **X. Yu**

11:50 COLL 805. CuInS₂-ZnS-based electro optic devices: Surface, structure and surface. **G. Zaiats**, J.B. Hoffman, S. Kinge, P.V. Kamat

Section D

Moscone Center
2008

Hierarchical Self-Assembly of Organic Monolayers, Bilayers & Films: Theory & Experiment

A. H. Flood, *Organizer*

S. L. Tait, *Organizer, Presiding*

8:30 COLL 806. From standing to sitting: Leveraging iterative phase segregation to create hierarchically nanostructured synthetic materials. **S.A. Claridge**

8:50 COLL 807. Effect of the first layer on polyelectrolyte multilayer structure. **X. Lyu**, A.M. Peterson

9:10 COLL 808. Partitioning of organic solutes into bilayers formed by non-ionic surfactants. **J. Siewmann**, M.S. Minkara, R.K. Lindsey, S.N. Jamadagni, D.M. Eike, P.H. Koenig

9:40 COLL 809. Beyond self-assembly: 2D chemical interactions and patterns, a computational approach to complex systems. **F. Zerbetto**

10:10 COLL 810. Understanding polymorphic accessibility and stability in molecular semiconductor thin films. **Y. Loo**

10:40 COLL 811. Principles and applications of grazing incidence small angle and wide angle x-ray scattering. **B. Lee**

11:10 COLL 812. Rational design of block copolymer compatibilizers for ternary blend polymer bulk heterojunction solar cells. **D. Kipp**, R. Verduzco, **V. Ganesan**

11:40 COLL 813. Nano-phase behavior of surface-adsorbed, monodisperse oligodimethylsiloxane-based block molecules. **J. Teyssandier**, J.A. Berrocal, B. de Waal, E.W. Meijer, S. De Feyter

12:00 COLL 814. Fast, facile, and scalable fabrication of slippery liquid-infused surfaces using layer-by-layer assembly enabled by in-situ proton transfer. **G.H. Zhu**, N. Zacharia

Section E

Moscone Center
2010

Basic Research in Colloids, Surfactants & Nanomaterials

Self-Assembly

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

8:30 COLL 815. Platonic micelles: Glutamic acids bearing calix[4]arene micelle: pH-controllable aggregation number corresponding to regular polyhedra. **S. Fujii**, K. Sakurai

8:50 COLL 816. Platonic micelles: Thermodynamic consideration of the micelles with the discrete aggregation numbers and mon-dispersity. **K. Sakurai**

9:10 COLL 817. Synthesis of epoxy-functional diblock copolymer nano-objects via polymerisation-induced self-assembly and their use as Pickering emulsifiers. **F. Hatton**, K. Thompson, S.P. Armes

9:30 COLL 818. Time-resolved small-angle x-ray scattering studies of the micellar nucleation event during polymerization-induced self-assembly. **M.J. Derry**, O. Mykhaylyk, S.P. Armes

9:50 COLL 819. pH-resolved self-assembly of microbial glycolipids: Mechanistic insights. **N. Baccile**

10:10 COLL 820. Hydrogen bonding asymmetric star-shape derivative of bile acid leads to supramolecular fibrillar aggregates that wrap into micrometer spheres. **T.T. Myllymäki**

10:30 COLL 821. Self-assembly of zwitterionic sulfobetaine siloxane onto silica nanoparticles for application as a versatile antifouling coating system. **B. Knowles**, P. Wagner, S. MacLaughlin, M. Higgins, P. Molino

10:50 COLL 822. Self-assembled protein vesicles made from recombinant fusion proteins. **Y. Jang**, W. Choi, J. Champion

11:10 COLL 823. Novel readily biodegradable disulfonate surfactants. **W. Yu**, Y. Cheng, E. Daugs, A. Argenton

11:30 COLL 824. Novel liposome-based Surface Enhanced Raman spectroscopy (SERS) substrate. **W. Lum**, I. Bruzas, Z. Gorunmez, S. Unser, L. Sagle

11:50 COLL 825. Block copolymer templated mono- and bimetallic catalysts for fuel cell electrocatalysis. **D.A. Rider**

Section F

Moscone Center
2012

Basic Research in Colloids, Surfactants & Nanomaterials

Metal Nanomaterials

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

8:30 COLL 826. Initial growth of Au nanostructures on TiO₂(110)-1x1 surface at elevated temperature. **X. Tong**

8:50 COLL 827. Polymer-like nanowires. **L. Cademartiri**

9:10 COLL 828. Functional and structural characterization of multi-functional gold nanoparticles. **L. Calzolari**, R. Capomaccio, I. Ojea Jimenez, D. Gilliland

9:30 COLL 829. Frugal innovation: Synthesis and applications of under-cooled metal particles. **i. Tevis**, J. Chen, C. Frankiewicz, A. Martin, **M. Thuo**

9:50 COLL 830. Withdrawn.

10:10 COLL 831. Chemical identity of surfactants control the electronic behaviors of the metallic core in gold nanoparticles. **B.J. Lear**, A. Cirri

10:30 COLL 832. Assessment of the physical stability of metal and metal oxide films for enhanced signal detection in colorimetric bioassays. **E. Bonyi**, Z. Kukoyi, O. Daodu, K. Aslan

10:50 COLL 833. Size and shape dissolution of silver nanoparticles. **Y. Hu**, Q. Zhang, V. Colvin

11:10 COLL 834. Hidden electrostatic asymmetry of gold nanorods. **J. Kim**, M. Lien, M. Han, S. Magonov, Y. Zhu, H. Ferguson, J. Schotland, Y. Chang, T. Norris, N. Kotov

11:30 COLL 835. Comparative roles of Zr(IV) and Ni(II) hetero-metal substituted polyoxometalates in oxidation solutions. **S.L. Giles**, J. Lundin, P.E. Pehrsson, R.B. Balow, W.O. Gordon, G.W. Peterson, B.T. Rasley, J.H. Wynne

11:50 COLL 836. Multi-stage transformation and lattice fluctuation at AgCl-Ag nanoparticle interface. **J.S. Du**, J. Park, Q. Kim, V.P. Dravid, D. Yang, D.A. Weitz

Section G

Moscone Center
2001

Basic Research in Colloids, Surfactants & Nanomaterials

R. Nagarajan, *Organizer*

K. C. Tvrdy, *Presiding*

8:30 COLL 837. Novel sol-gel derived TiO₂-SiO₂ particle systems for direct ink writing compositionally tailored GRIN glasses. **J.F. Destino**, T. Yee, N. Dudukovic, C. Meyers, D. Nguyen, E. Duoss, R. Dylla-Spears

8:50 COLL 838. New algorithm to model quantum growth dot dynamics. **K.C. Tvrdy**, N. Weeks

9:10 COLL 839. Damping of quantum dot acoustic phonons by chalcogenide surface ligands. **K. Schnitzenbaumer**, G. Dukovic

9:30 COLL 840. Microfluidic discovery platform: Toward nanoparticle functionalization through closed loop optimization. **K. Park**, S. Izor, J.D. Watt, D. Huber, D.H. Wang, L. Tan, R.A. Vaia

9:50 COLL 841. First steps in the Fischer-Tropsch reaction catalyzed by ultra-small ruthenium nanoparticles: A DFT study. **L. Cusinato**, L.M. Martínez-Prieto, B. Chaudret, I. Del Rosal, **R. Poteau**

10:10 COLL 842. Magnetic nanoparticles as contrast agents for reservoir imaging. **S. Al Hassan**, M. Subrati, G. Papavassiliou, D. Gournis, S. Pantelides, H. Kim

10:30 COLL 843. Characterization of nanoparticle interactions and thin film properties using MP-SPR. **N. Granqvist**, A. Jokinen, J. Kuncova-Kallio, J.W. Sadowski

10:50 COLL 844. Controlled nanoparticle morphology transitions induced by high-pressure ice-segregation. **J. Snitker**, M.O. Montes

11:10 COLL 845. Inorganic-organic hybrid electrical devices based on nanoparticle arrays for switchable current and spin transport. **R.C. Bruce**, C.A. Hacker

11:30 COLL 846. 2µm Ultrathin silica shells doped with iron (III) for low threshold of CPS and color doppler ultrasound performance and notable biodegradability. **C. Huang**, J. Yang, J. Wang, J. Oviedo, W.C. Trogler, A. Kummel, M. Kim

Section H

Moscone Center
2003

Basic Research in Colloids, Surfactants & Nanomaterials

Colloids in Environment & General Papers

R. Nagarajan, *Organizer*

K. Mandel, *Presiding*

8:30 COLL 847. Superparamagnetic carrier particles for water purification, resources recovery and substance sensing in fluids. **K. Mandel**

9:00 COLL 848. Colloidal gold nanorods uptake study on *C. fluminea* filter-feeding bivalve clams: Effect of aspect ratio and surface coating. **S. Abtahi**, P.J. Vikesland, C.J. Murphy, N.B. Saleh

9:20 COLL 849. Plasma modified catalytic micromotors. **L. Oksuz**, G. Yurdabak Karaca, E. Uygun, U. Koc, F. Kuralay, A. Uygun Oksuz

9:40 COLL 850. Thermochemistry of MAX and MXene phases. **G. Sharma**, M. Naguib, D. Feng, Y. Gogotsi, A. Navrotsky

10:00 COLL 851. Incorporating oxygenates into diesel fuel systems via stable reverse micelles. **M. Webb**, T. Riffi, W.J. Orts, **K. Aramthanapon**

10:20 COLL 852. Effect of viscosity on the propulsive motion of catalytic Janus motors. **P. Chatterjee**, E. Tang, P. Underhill

10:40 COLL 853. Manipulating single molecular junctions using electrochemical environments. **Y. Zang**, M.S. Inkpen, L. Venkataraman

11:00 COLL 854. Effect of moisture on the hydrolysis of basic salts. **X. Shi**, K. Lackner

11:20 COLL 855. Moisture-swing thermodynamics. **H. Azarabadi**, K. Lackner

Section I

Moscone Center
2005

Basic Research in Colloids, Surfactants & Nanomaterials

Synthesis of Colloids & in Colloidal Media

R. Nagarajan, *Organizer*

M. Stefiik, *Presiding*

8:30 COLL 856. Organometallic route to layered zinc hydroxides and their exfoliated monolayers in apolar solvents. **A. Leung**, S.D. Pike, A.J. Clancy, H. Yau, M. Shaffer, C.K. Williams

8:50 COLL 857. Precision tunable nanomaterials from persistent micelle templates. **M. Stefiik**

9:10 COLL 858. Facile, single-pot preparation of nanoporous silica with AgNPs at the core and curst for controlled Ag⁺ ion release. **M. Salman Haider**, G.N. Shao, K. Hee Taik

9:30 COLL 859. Selective electropolymerization of aniline on an ITO electrode using magnetic nanoparticles and a varying magnetic field. **D. Wirth**

9:50 COLL 860. Morphology, structure, and optical properties of 2D SnS nanoplates synthesized via a hot-injection method. **N. Trejo**, A. Hunter, M. Nguyen, C. Wrasman, J. Dwyer, E.S. Aydil

10:10 COLL 861. Synthesizing and screening high mobility nanoparticles. **D. Garcia-Rojas**, G. Escalera, A. Mendoza-Garcia, C. Masterson, V. Colvin

10:30 COLL 862. Surfactant-induced shape changes in oil droplets caged in deformable polymer shells as templates for the synthesis of anisotropic polymer particles. **X. Guo**, N.L. Abbott, D.M. Lynn

10:50 COLL 863. Synthesis and chemical transformation of nickel nanoparticles embedded in silica. **B.B. Lynch**, B.D. Anderson, W.J. Kennedy, J.B. Tracy

11:10 COLL 864. Carboxylate decomposition: A critical step in high temperature synthesis of metal oxide nanocrystals. **C. Masterson**, A. Mendoza-Garcia, V. Colvin

11:30 COLL 865. Synthesis and characterization of metal-doped synthetic melanin nanoparticles. **Z. Wang**, Y. Li, Y. Huang, N.C. Gianneschi

11:50 COLL 866. Effect of solution composition on Pu oxide nanoparticle morphology. **T. Parsons-Moss**, J. Shusterman, D. Olive, Z. Dai, M. Zavarin, A. Kersting

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