COLL

Division of Colloid and Surface Chemistry

R. Nagarajan, Program Chair

SUNDAY MORNING

San Diego Convention Center
Room 6E

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell

Catalysis

Cosponsored by CATL
J. Rodriguez, S. L. Tait, Organizers
D. Starr, Organizer, Presiding
L. Grabow, Presiding

8:30 COLL 1. Surface science of molecular catalysis and integration of the three fields of catalysis: Heterogeneous, homogeneous, and enzyme. G.A. Somorjai

9:00 COLL 2. Identifying single-atom catalysts for CO oxidation from density functional theory. T. Kropp, M. Rebarchik, M. Mavrikakis

9:30 COLL 3. Single-site catalysts by metal-ligand complexation at surfaces: From model systems in vacuum to high-pressure catalysis on oxide supports. S.L. Tait

10:00 COLL 4. Interactions of methane on and near high-temperature liquid surfaces. E. McFarland, H. Metiu

10:30 Intermission.

10:50 COLL 5. 2-Propanol dehydration on single-facet-dominant TiO\textsubscript{2} (101) and (001) nanopowder catalysts. F. Gao, F. Lin, Y. Wu, B. Sudduth, H. Wang, D. Mei, Y. Wang

11:20 COLL 6. Applying low temperature titration for determination of metallic sites on active oxide supported catalysts. Y. Yang, Z. Liu, J. Li, Y. Dai

San Diego Convention Center
Room 6F

**Colloidal Quantum Dots for Emerging Technologies**

F. Rosei, A. Vomiero, *Organizers*
O. K. Varghese, *Presiding*

9:00 COLL 8. Failure modes in quantum dot bioimaging agents: It’s all about the coating. K. Lee, T. Porter, C. Mcpherson, L. Brillson, **J.O. Winter**


11:00 COLL 13. Noble- and heavy-metal-free colloidal semiconductor branched frame photocatalyst. **D. Chen**


12:00 COLL 16. HgCdSe/HgS/CdZnS colloidal quantum wells with bright short-wave infrared light emission. **S. Lim**
San Diego Convention Center
Room 31B

Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions

Molecular Scale Confinement

J. Conrad, D. K. Schwartz, Organizers, Presiding

9:00 Introductory Remarks.

9:05 COLL 17. On the confined orientational motions of dyes diffusing in surfactant templated cylindrical silica mesopores. D.A. Higgins, R. Kumarasinghe, T. Ito


10:00 COLL 19. View of confinement from the perspective of water molecules, as observed by Overhauser dynamic nuclear polarization. J. Franck

10:25 Intermission.

10:35 COLL 20. Infiltration of polymers into disordered nanoparticle packings: Polymers under extreme nanoconfinement. D. Lee

11:10 COLL 21. Quantitative measurement of nanoconfinement effects on molecular transport and chemical reaction with a core-shell mesoporous particle. N. Fang, B. Dong, Y. Pei, W. Huang


12:00 COLL 23. Dielectric constant of interfacial water over charged interfaces. F. Geiger, M. Boamah

Section D

San Diego Convention Center
Room 31A

Nanoinformatics: Information & Data Sciences Applied to Nanomaterials Synthesis, Properties & Biological Effects
Nanoinformatics for Nanomedicines

Cosponsored by CINF
S. Jiang, A. Schroeder, Organizers
J. Dahlman, D. A. Heller, Organizers, Presiding

9:00 COLL 24. Exploration of the nanomedicine-design space with high-throughput screening and machine learning. C.A. Mirkin


10:40 Intermission.


11:20 COLL 28. Synthetic closed-loop smart insulin patch. Z. Gu

11:50 COLL 29. Nanoinformatics as a driver for nanoparticle synthesis and biomedical imaging paradigms in MRI and CT. E. Shapiro

Section E

San Diego Convention Center
Room 30E

Nanomaterials

Self-Assembly of Soft Nanomaterials

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

9:00 COLL 30. Controlled assembly of block copolymer coated nanoparticles in 2D-arrays. V. Leffler, L. Mayr, M. Dulle, P. Paciok, H. Du, R. Dunin-Borkowski, S. Förster


10:00 COLL 33. Controlled self-assembly of conjugated block copolymers driven by π-π interactions. F. He

10:20 COLL 34. Exerting control over random media by directed self-assembly for optical applications. J.R. Miller, C. Wang, Z. Liu, C.D. Keating


11:00 COLL 36. Surface-directed, DNA-programmed crystallization of nanoparticles. R. Macfarlane


11:40 COLL 38. Multi-stimuli responsive nanocomposite tectons. Y. Wang, R. Macfarlane

12:00 COLL 39. Thin carbon nanostructure mat with high electromagnetic interference shielding performance. H. Younes, A. Al Ghaferi, A. Bani Younes

Section F

San Diego Convention Center
Room 30D

**Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems**

M. A. Ilies, Organizer
K. Sakurai, Organizer, Presiding

9:00 COLL 40. Novel self-assembling drugs for amino-acid delivery system. Y. Nagasaki


10:30 Intermission.
10:45 COLL 42. Effects of the polymer corona on the drug loading in ultra-high drug loaded poly(2-oxazoline)/poly(2-oxazine) micelles. H.S. Malik, M. Lübtow, R. Luxenhofer


San Diego Convention Center
Room 30C

Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations

Metallic Nanomaterials

H. Fan, Y. Sun, Organizers
O. Chen, J. He, Organizers, Presiding

8:30 Introductory Remarks.

8:35 COLL 44. Chemical transformations of nanostructures. Y. Yin

9:05 COLL 45. Immobilized metal nanoparticle catalysts for energy applications. Q. Xu

9:35 COLL 46. Phase engineering of novel nanomaterials. H. Zhang

10:05 Intermission.

10:15 COLL 47. Designing highly durable core@shell electrocatalysts. S.E. Skrabalak

10:45 COLL 48. Selective chemical transformations on ordered surfaces of intermetallic nanoparticles. W. Huang

11:15 COLL 49. Tailoring cooperative metal-support interfaces for catalysis. S. Dai

11:45 COLL 50. Phase-controlled synthesis of colloidal metal nanocrystals. Y. Xia

Section H

San Diego Convention Center
Room 29B

Water & Tribological Interfaces
From Nature to Biomimicking Systems

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

9:00 Introductory Remarks.

**9:05 COLL 51.** Why is ice slippery? Simulations of solid-liquid friction and the shear viscosity of the quasi-liquid layer on ice. **J.D. Gezelter**

**9:35 COLL 52.** Ice-rubber friction mechanisms. D. Mazuyer, S. Hemette, J. Cayer-barrioz

10:05 COLL 53. Partial slip takes time. **D. Johannsmann, F. Meyer**

10:25 Intermission.

**10:35 COLL 54.** Relating dermal friction to water and skin moisture content. **M. Masen, E. de Vries**

**11:05 COLL 55.** Psychotribology: How friction, materials properties, and age influence tactile perception. **M.W. Rutland**

**11:35 COLL 56.** Structure of water inside thin polysaccharide films. H. Ro, O. Zavgorodnya, G. Yuan, M. Chawathe, L. Granado, C.M. Stafford, **D. Bendejacq**

**11:55 COLL 57.** Macroscale water-based superlubricity achieved by PDMS under boundary lubrication regime. **Y. Li, S. Li, Y. Tian**

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Section I

San Diego Convention Center
Room 33C

Hierarchical Assembly of Peptide & Protein: From Interaction & Structure to Application

M. Dong, *Organizer*
S. Zhang, *Organizer, Presiding*
C. Chen, *Presiding*

**8:30 COLL 58.**Withdrawn.

**9:00 COLL 59.** Hierarchical folding and assembly of protein-mimetic nanomaterials. S. Xuan, A.I. Nguyen, **R.N. Zuckermann**
9:30 COLL 60. Peptide assembly at interfaces templated by striped phases of amphiphiles. S.A. Claridge

9:50 COLL 61. Multicomponent coordination self-assembly toward hierarchical supramolecular nanocolloids for efficient photodynamic therapy. Q. Zou, X. Yan

10:10 COLL 62. Predictive modeling of bionanomaterials from picometers to micrometers. H. Heinz

10:40 COLL 63. Synthesis and applications of peptoid-based crystalline nanomaterials. C. Chen

11:10 COLL 64. Peptide-modulated self-assembly of photosensitive nanocolloids for antitumor phototherapy. X. Yan, S. Li, R. Chang


Nanotechnology & Single Cell Analysis in Biology & Medicine

Nanoscience, Biology & Medicine

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

Ambient Pressure Spectroscopy in Complex Environments

Sponsored by CATL, Cosponsored by COLL

SUNDAY AFTERNOON

San Diego Convention Center
Room 6E

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell
Reactions at Surfaces

Cosponsored by CATL
J. Rodriguez, D. Starr, S. L. Tait, Organizers
L. Arnadottir, F. Gao, Presiding

1:30 COLL 67. Reactions in confined space: Can surface science contribute? H. Freund

2:00 COLL 68. Computational approach to determine entropy of adsorbates in catalytic reactions. L. Arnadottir, C.T. Campbell, L.H. Sprowl

2:30 COLL 69. How water improves the selectivity of preferential oxidation of CO in the presence of excess H₂ over Au/TiO₂. L. Grabow, K. Sravan Kumar, T.N. Whittaker, B.D. Chandler

3:00 COLL 70. Heterolytic H₂ cleavage and water-assisted hydrogen spillover on single palladium atoms supported on Fe₃O₄(001). N. Doudin, S. Yuk, M. Marcinkowski, M. Nguyen, J. Liu, Y. Wang, B. Kay, J. Li, V. Glezakou, G. Parkinson, R. Rousseau, Z. Dohnalek

3:30 Intermission.

3:50 COLL 71. Control the reactions on surfaces. J. Zhu

4:20 COLL 72. Parahydrogen-induced hyperpolarization on ordered surface of intermetallic nanoparticles. E. Zhao, R. Maligal Ganesh, C.R. Bowers, W. Huang

4:40 COLL 73. Selective oxidation of acetaldehyde to acetic acid on Pd–Au(111) bimetallic surfaces. S. Han, K. Shin, G.A. Henkelman, C.B. Mullins

5:00 COLL 74. Surface reactions of complex molecular systems: From supported graphene to hydrogen storage molecules. H. Steinrueck

Section B

San Diego Convention Center
Room 6F

Colloidal Quantum Dots for Emerging Technologies

F. Rosei, A. Vomiero, Organizers
D. Kilin, P. V. Radovanovic, Presiding

2:20 COLL 76. Linker-free deposition of Au nanoparticles from a Au colloid. N.J. Quitoriano


3:00 COLL 78. First-principles modeling of photoluminescence of colloidal nanostructures. Y. Han, A. Forde, D.J. Vogel, F. Fatima, T.M. Inerbaev, E. Hobbie, D. Kilin

3:30 COLL 79. Shortwave infrared highly emissive nanostructures derived from Cd/Hg chalchogenide platelets. S. Tenney, V. Vilchez, J.R. Caram


4:10 COLL 81. Controlling carrier polarization in plasmonic semiconductor nanocrystals. P.V. Radovanovic

4:40 COLL 82. High temperature digestive ripening and size focusing of semiconductor nanocrystals in ligand-saturated solutions. D. Porotnikov, M. Zamkov

5:00 COLL 83. Synergistic approach towards understanding the mechanistic behavior for eradication of superbugs using multifunctionalized nanoplasms. A. Pramanik, K. Gates, Y. Gao, S. Begum, P.C. Ray

San Diego Convention Center
Room 31B

Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions

Confined Biomacromolecules

J. Conrad, D. K. Schwartz, Organizers, Presiding

2:00 COLL 84. Linking interfacial protein dynamics to macroscale elutions. C.F. Landes

3:00 COLL 86. Superresolution (fcsSOFI) imaging of porous polymer support and active control of protein dynamics. C. Dutta, S. Chatterjee, C.F. Landes


4:00 Intermission.

4:10 COLL 89. Impact of confinement and crowding on the kinetics of enzyme encapsulated in virus-like particles. J. Sharma

4:30 COLL 90. Manipulating biological systems with polymer chemistry: Encapsulating enzymes. J.A. Martin, E. Pinkhassik

Section D

San Diego Convention Center
Room 31A

Nanoinformatics: Information & Data Sciences Applied to Nanomaterials Synthesis, Properties & Biological Effects

Nanoinformatics for Nanomaterials

Cosponsored by CINF
J. Dahlman, D. A. Heller, Organizers
S. Jiang, A. Schroeder, Organizers, Presiding

2:00 COLL 91. Experimental and computational search strategies for function in the peptide sequence space. R. Ulijn, T. Tuttle

2:30 COLL 92. Combinatorial targeting for phenotypic targeting. G. Battaglia


3:30 COLL 94. Rapidly identifying nanoparticles for in vivo RNA and gene editing using DNA barcoding. J. Dahlman

4:00 Intermission.
4:10 COLL 95. Learning to predict single-wall carbon nanotube-recognition DNA sequences. A. Jagota, Y. Yang, M. Zheng


5:10 COLL 97. Development of targeted nanomedicines facilitated by nanoinformatics. D.A. Heller, Y. Shamay, J.D. Chodera, M. Isik

Section E

San Diego Convention Center
Room 30E

Nanomaterials

Synthesis & Functional Design of Colloidal Nanocrystals

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, Organizers
G. Strouse, Presiding

2:00 COLL 98. Seeded growth and cation exchange strategies for the synthesis of complex multi-component nanoparticles. R.E. Schaak

2:30 COLL 99. Molecular programming the phase determination of colloidal nanocrystals with dichalcogenide precursors. R.L. Brutchey

3:00 COLL 100. Quantum dot design strategies for accurate molecular imaging in cells and tissues. A. Smith

3:30 COLL 101. Metal-tipped CdSe@CdS tetrapods: Enhanced solar energy conversion and fuel generation enabled by precision nanoscale syntheses and Interface engineering. N.G. Pavlopoulos, J. Pyun


4:10 COLL 103. Colloidal ReO$_3$ nanocrystals: Extra rhenium d-electron instigating a plasmonic response. S. Ghosh

4:30 COLL 104. Dielectric environment effects on doping efficiency in PbSe nanostructures. Q. Zhao, T. Zhao, C.R. Kagan
4:50 COLL 105. Gelation of plasmonic metal oxide nanocrystals by polymer-induced depletion attractions. C. Saez Cabezas, G. Ong, R. Jadrich, B. Lindquist, A. Agrawal, T. Truskett, D.J. Milliron

San Diego Convention Center
Room 30D

Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems

K. Sakurai, Organizer
M. A. Ilies, Organizer, Presiding

2:00 COLL 106. In vivo nucleic acid delivery systems for therapeutic targeting of multiple myeloma-microenvironment interactions. M. Mitchell

2:30 COLL 107. Functionalized cationic lipid systems for the delivery of nucleic acid and small molecule therapeutics. K.K. Ewert, V. Steffes, E.A. Wonder, C.R. Safinya

3:00 COLL 108. Machine-learning approach for in silico prediction of lipid-based nanoparticles self-assembly. E. Selwa, B.I. Iorga

3:30 Intermission.


4:15 COLL 110. Tailoring HDL mimetics for in vivo delivery of mRNA. N. Fischer, W. He, A. Rasley, M.A. Coleman

4:45 COLL 111. RNAi therapeutics delivered. M. Manoharan

San Diego Convention Center
Room 30C

Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations

Phase & Surface Chemistry of Nanomaterials
1:30 Introductory Remarks.


2:05 COLL 113. Probing surface sites on metal/alloy nanocatalysts in gas-phase catalytic oxidation reactions. C. Zhong

2:35 COLL 114. Designing oxide-based nanomaterials for energy applications. T. Hyeon


3:35 Intermission.

3:45 COLL 116. Nanoparticles for oxygen in heterogeneous catalysis and electrocatalysis. H. Yang

4:15 COLL 117. Plasmonic circular dichroism of Janus nanoparticle emulsions. S. Chen

4:45 COLL 118. To pNP or not to pNP? Broader scope study of nitrophenol reduction with noble metal nanoparticles. T. Jurca

5:10 COLL 119. Controlling acid diffusion rate into gold nano-particle doped silica-based sol-gel material. K. Yokoyama

San Diego Convention Center
Room 29B

Water & Tribological Interfaces

Water & Solid Lubricants: Friends or Foe?

F. Mangolini, M. Ruths, Organizers
A. C. Dunn, J. M. Helt, Presiding
2:00 COLL 120. Friction on graphite in the presence of adsorbates: Physical and chemical effects on the basal plane and at step edge defects. A. Martini

2:30 COLL 121. Experiments and simulations of the humidity dependence of friction: Role of interfacial contact quality. R. Carpick, K. Hasz, Z. Ye, A. Martini

3:00 COLL 122. Friction and mechanochemical reactivity of 2D nanomaterials. J.D. Batteas

3:20 COLL 123. Lubricated friction at surface nano-defects. C. Cafolla, J.W. Foster, K. Voitchovsky

3:40 Intermission.


4:40 COLL 126. Probing and understanding elementary steps in tribochemical reactions. W.T. Tysoe

5:00 COLL 127. Ambient-pressure friction force microscopy studies on ultrananocrystalline diamond films: Effect of environment on nanoscale friction. J. Kim, J. Choi, J. Kim, J. Park

Section I

San Diego Convention Center
Room 33C

Hierarchical Assembly of Peptide & Protein: From Interaction & Structure to Application

M. Dong, Organizer
S. Zhang, Organizer, Presiding
R. Alberstein, Presiding

1:30 COLL 128. Heterodimer assembly from de novo repeat protein structures. p. huang

2:00 COLL 129. Functional protein assemblies by chemical design. F.A. Tezcan, R. Alberstein, R. Subramanian, Z. Zhang

2:30 COLL 130. Reconfigurable hybrid colloids: Using solid-binding proteins to control nanoparticle assembly and disassembly. F. Baneyx

3:20 COLL 132. Nanomaterials for nervous regeneration. F. Gelain

3:50 COLL 133. Polymer particles for bio-nano interactions and cancer therapy. J. Cui

4:20 COLL 134. Phospholipid self-assembly-based artificial cells. x. han


Nanotechnology & Single Cell Analysis in Biology & Medicine

Nanoscience
Sponsored by ANYL, Cosponsored by COLL, MPPG and PHYS

Ambient Pressure Spectroscopy in Complex Environments
Sponsored by CATL, Cosponsored by COLL

SUNDAY EVENING

San Diego Convention Center
TBD

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell

Posters

J. Rodriguez, D. Starr, S. L. Tait, Organizers
5:30 - 7:30

COLL 137. Tuning metal (hydr)oxide composites via functionalized polymers. **R.B. Balow**, J. Lundin

COLL 138. Interactions of ascorbic acid on copper for fuel cell applications. **J. Cruz**, M. Groves

COLL 139. Quantifying sorption and diffusion in polymeric materials: Experimental results and high fidelity modeling. **S. Matt**, H.N. Sharma, J. Knipe, P. Roy, S. Castonguay, Y. Sun, E. Glascoe

San Diego Convention Center
TBD

**Basic Research in Colloids, Surfactants & Interfaces**

**Posters**

R. Nagarajan, *Organizer*

5:30 - 7:30

COLL 140. Withdrawn.


COLL 142. Functional superhydrophobic and icephobic coatings made of new biomimetic "gecko leg" soft dendritic colloids. **A. Williams**, S. Roh, O.D. Velev

COLL 143. Removing fine solids suspended in oil media through wettability modification and water-assisted agglomeration. **J. Liu**

COLL 144. Structure-dependent properties of nanoporous hydrogels: Rheology and swelling. **Z. Abbasian Chaleshtari**, J. Banuelos, R. Foudazi

COLL 145. Dynamics and mechanism of polyelectrolyte-neutral block copolymer micellization in aqueous solution by atomistic MD simulations. **U. Natarajan**

COLL 147. Thioether–polyglycidol as multivalent and multifunctional coating system for metal nanoparticles. K. Albrecht, S. Feineis, J. Lutz, J. Groll, E. Endl

COLL 148. Enzyme triggered rapid disassembly of polymeric nanoassemblies. V. Kumar, Y. Bae, O. Munkhbat, M. Franc, S. Thayumanavan

COLL 149. Hydrothermal synthesis of monodisperse tin oxide nanoparticles and doped tin oxide nanoparticles. R. Medhi, T. Lee, T. Lee

COLL 150. Interfacial rheology with sub-phase exchange used to investigate dynamics of cyclopentane hydrate film formation and dissociation. J. Samaniuk, D. Goggin

COLL 151. Olefin-linked dithiol adsorbates for the generation of self-assembled monolayers on gold. S. Sakunkaewkasem, T. Lee, M.D. Marquez, M.A. Gonzalez

COLL 152. Seedless, one-pot synthesis and simulations of infrared-absorbing silver nanoparticles. N. Yamamoto, M.P. Zepeda Torres, D. Harris, D.P. Pullman

COLL 153. Bidentate phosphonic acid-based self-assembled monolayers on silver oxide. J. Lee, T. Lee

COLL 154. New water-free method for the synthesis of chiral QDs and fine tuning of their optical activity. K. Varga, Y. Joh, S. Tannir, J. Kubelka, M. Balaz

COLL 155. Monitoring the temperature-responsive behavior of cholesteric liquid crystal films and emulsions using QCM-D. K. Swana, P. D'Angelo, C. Tang


Section A

San Diego Convention Center
TBD

Biomaterials & Biointerfaces

Posters

S. Romero-Vargas Castrillon, Organizer
5:30 - 7:30

**COLL 157.** Coacervate droplets formation of methylated β-cyclodextrin-threaded polyrotaxanes in aqueous media and their applications as an injectable protein carrier. **A. Tamura, K. Nishida, N. Yui**

**COLL 158.** Palladium nanoparticles as ROS scavengers. **M. Moglianietti**

**COLL 159.** Synergistic O₂ generation by manganese ferrite/ceria co-decorated nanoparticles induce M2 polarization of macrophages for rheumatoid arthritis treatment. **J. Kim, T. Hyeon**

**COLL 160.** Application of hemoglobin-capped fluorescent gold nanoclusters for cancer cell targeting and inhibition of cancer cell proliferation. **S. Tan, T. Kuo**

**COLL 161.** Evaluation of cancer progression and inhibition of cancer cell proliferation by using target-specific 2A3 antibody-conjugated gold nanoclusters. **J. Kuo, T. Kuo**

**COLL 162.** Metabolic mechanism of cysteine conjugated fluorescent gold nanoclusters in *Escherichia coli*. **T. Chang, T. Kuo**

**COLL 163.** Synthesis of cysteine-conjugated silver-gold alloy nanoclusters and their application in antimicrobial. **C. Su, T. Kuo**

**COLL 164.** Cysteine conjugated silver nanoclusters for the detection and inhibition of *Escherichia coli*. **P. Hsu, T. Kuo**

**COLL 165.** General model for the permeation of nanoparticles through cellular membranes. **C. Liu, P. Elvati, Y. Wang, A. Violi**

**COLL 166.** Thermal responses of multi-L-arginyl-poly-L-aspartate conjugated with polyethylene glycol. **W. Tseng, Y. Lin**

**COLL 167.** Supported lipid bilayer stripping by buffer flow. **M.J. Ornstead, R. Hunter, C. Cooper, M.L. Valentine, S.K. Smith, C.F. Monson**

**COLL 168.** Surface modification of nanofibrous mats with polymeric micelles for enhanced tissue regeneration. **V. Albright, Y. Wang, C. Mao, M. Stack, H. Hlushko, S. Hernandez, H. Wang, S.A. Sukhishvili**

**COLL 169.** Synthetic charge-invertible polymer for rapid and complete implantation of layer-by-layer microneedle drug films for enhanced transdermal vaccination. **Y. He, C. Hong, J. Li, M. Howard, Y. Li, M. Turvey, D.S. Uppu, J.R. Martin, K. Zhang, D.J. Irvine, P.T. Hammond**

**COLL 170.** Size-matching hierarchical micropillar arrays for detecting circulating tumor cells. **Z. Wang, D. Xu, N. Lyu**


COLL 174. Design of adaptive magnetic carbon nanotubes to mimic stimuli-responsive cell culture substrates. **G. Spiaggia**, D. Septiadi, B. Rothen-Rutishauser, A. Fink


COLL 177. Experimental study on the self-assembly of polyesters. **E. Liatsi-Douvitsa**, M. Sipin, G. Battaglia

COLL 178. Characterization of the bioaccessibility of nanoparticles in consumer products advertised to contain colloidal silver. **K.R. Rogers**

Section A

San Diego Convention Center
TBD

**Colloid & Surface Chemistry in Industry: Applications & Career Opportunities**

**Posters**

N. A. Falk, R. I. Maccuspie, *Organizers*

5:30 - 7:30

COLL 179. Low-field NMR relaxometry for characterizing wetted surface area in colloids and polymer particle dispersions. **R. Ma**

COLL 181. Biopolymer functionalized liposomes for enhanced dispersion stability of nanovesicles. L. Hyppolite

COLL 182. Effects of humidity on the formation of indoor organic thin films. S. Schwab, M. Belsuzarri, V.W. Or, M. Alves, V.H. Grassian

COLL 183. Treated diatomaceous earth particles on polymers. H.J. Perera, F.D. Blum

COLL 184. Impact of gold nanostar morphology on bioassay sensitivity. P. Ansari, R.C. Willson, T. Lee

COLL 185. Cyclodextrin functionalized 3D-graphene for the removal of Cr(VI) with the easy and rapid separation strategy. Z. Wang, F. Lin, L. Huang, Y. Lu, J. Chen

Section A
San Diego Convention Center
TBD

Colloidal Quantum Dots for Emerging Technologies

Posters

F. Rosei, A. Vomiero, Organizers

5:30 - 7:30


COLL 190. Investigation of the effects of quantum confinement and grain size on the photoconductivity of CdSe nanocrystal thin films. J. Cassidy, M. Zamkov

Section A

San Diego Convention Center
TBD

Colloids & Nanomaterials for Water Purification

Posters

C. Drew, Organizer

5:30 - 7:30


COLL 194. Prussian blue immobilized filter materials for the selective removal of aqueous cesium. Y. Hwang, Y. Seo, H. Kim, D. Oh, S. Kang

COLL 195. Withdrawn.


COLL 197. Novel graphene oxide based thin film composite nanofiltration membranes assisted by rapid codeposition of metal-phenolic network/piperazine. Y. Yang, Y. Li, Y. Wang, R. Wang

COLL 198. Gold-decorated barium titanate nanoparticles for enhanced photocatalysis. P. Srinoi, T. Lee, T. Lee

COLL 199. Which aminosilane molecules are the most suitable for surface functionalization of GO toward hexavalent chromium adsorption? J. Lee, H. Kim, J. Lee, J. Choi, S. Lee

Section A

San Diego Convention Center
TBD
Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions

Posters

J. Conrad, D. K. Schwartz, Organizers

5:30 - 7:30

COLL 200. Effect of dielectric saturation on the ion activities in membranes. A. Paspureddi, M.M. Sharma, L.E. Katz

San Diego Convention Center
TBD

Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems

Posters

M. A. Ilies, K. Sakurai, Organizers

5:30 - 7:30

COLL 201. PLGA fiber containing AuNRs for on-off controlled anticancer drug release system. Y. Park, H. Seo, E. Jeong, D. Hyun, G. Moon

COLL 202. Delivery of the SN50 peptide via PLGA particles for increased immunological control and delayed boosting. B. Ross, B. Moser, A. Esser-Kahn

San Diego Convention Center
TBD

Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations

Posters
O. Chen, H. Fan, J. He, Y. Sun, Organizers

5:30 - 7:30

**COLL 203.** Piezoelectrically-mediated mechanochemical reactions for adaptive materials. **J.L. Ayarza**

**COLL 204.** Piezocatalytic activity of piezoelectric nanoparticles induced by audible frequency vibrations. **J. Wang, Z. Wang, A. Esser-Kahn**

**COLL 205.** Pd nanoparticle-quantum dot nanodisc hybrids for photo-enhanced colloidal catalysis. **B. Wang, Y. Shon**

**COLL 206.** Liposome-embedded hydrophobic palladium nanoparticles for biphasic catalysis in water. **D. Ortega, Q. Tufono, N. Pavlakovich, Y. Shon**

**COLL 207.** Pressure induced transformation of formamidinium lead halide perovskite and quantum dot gold heterostructural nanocrystals. **H. Zhu, Y. Nagaoka, T. Cai, M. Que, J. Song, K. Hills-Kimball, R. Tan, R. Li, B.M. Rubenstein, Z. Wang, O. Chen**

San Diego Convention Center
TBD

**Fundamental Research in Colloids, Surfaces & Nanomaterials**

**Posters**

R. Nagarajan, Organizer

5:30 - 7:30

**COLL 208.** Using spin coating to fabricate polydopamine thin films. **W. Chen**

**COLL 209.** Photophysics of fluorescent probe molecules in confined environments. **M. Opolz, N. Meaux, R.K. Nayak**

**COLL 210.** Interactions of nanomaterials with model lipid bilayer. **M. Skinner, R. Warmoth, S. Lee**

COLL 212. Interactions of PAMAM dendrimers with lipid bilayers. L. Chong, E. Perez, S. Zurbriggen, S. Lee

COLL 213. Confocal Raman microspectroscopy for biomembrane characterization. J. Giancaspro, M. Krmic, E. Miller, P. Scollan, S. Lee

COLL 214. Insights into biomembrane structure by water permeability and raman spectroscopy. P. Scollan, J. Rosario, E. Miller, S. Foley, S. Lee

COLL 215. Computational studies of the effect of caffeine on water permeability in DOPC/cholesterol model membrane. T.A. Johnson, S. Lee, R. Versace

COLL 216. Role of cis and trans double bond on water permeability of model membrane in the presence and absence of cholesterol: Computational studies. J. Rosario, S. Lee, R. Versace

COLL 217. Computational studies on water permeability across a DOPC biological membrane: Effect of cation. J. Villa, S. Lee, R. Versace

COLL 218. Ultrasound-stimulated cargo release at low temperature for spatiotemporally and quantitatively controllable contrast enhancement by magnetic resonance guided high intensity focused ultrasound. C. Cheng, W. Chen, J.I. Zink, L. Zhang, H. Wu

COLL 219. Amoebae assemble synthetic spherical particles to form reproducible constructs. T.J. McCarthy, P. Bian


COLL 221. Magnetically recoverable Pd and Ru nanoparticulate catalysts based on polyethyleneimine or chitosan: Major factors in nitroarene reduction. T.A. Dickstein, L. Gregor, Y. Losovyj, B.D. Stein, L. Bronstein

COLL 222. Evaluation of stability of concentrated hydrosol with the droplets of unsaturated lipid. Y. Watanabe, M. Shinada


COLL 224. Self-assemblies of truncated tetrahedral quantum dots with anisotropic patchiness. Y. Nagaoka, O. Chen, H. Zhu

COLL 226. Generation of hot electrons at metal-oxide interfaces during the decomposition of hydrogen peroxide on Pt nanowire/Si nanodiodes. H. Kim, Y. Kim, Y. Jung, J. Park

COLL 227. Effect of functionalization of porous silica as nanoreactor for preparation of fluorescent carbon dots. A. Mikhralieva, H. Motta, V. Zaitsev

COLL 228. Study of collective magnetic behavior of iron oxide at nanoscale interparticle distances through DNA-assisted self-assembly. P. Rahmani, T. Ye

COLL 229. High-spatial single cell histone mapping using optically tunable nanoparticles. H. An, K. TaeHo, I. Choi


COLL 233. Magnetic chaining of PDMS beads in new gels and anchor sites for the improvement of wall slip conditions. N.I. Morales Castellanos, B. Bharti, O.D. Velev

San Diego Convention Center
TBD

Hierarchical Assembly of Peptide & Protein: From Interaction & Structure to Application

Posters

M. Dong, S. Zhang, Organizers

5:30 - 7:30

COLL 235. Development of virus-like hierarchical silica nanoparticles using an engineered capsid protein for biomedical applications. C. Kim

Section A

San Diego Convention Center
TBD

Nanomaterials

Posters

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

5:30 - 7:30


COLL 237. 2D Pd-based multmetallic nanosheets. C. Si, W. Lu

COLL 238. On solid lipid nanoparticles. D. Pink, J. Lawrence, C. Lorenz

COLL 239. Creation of gyroid nanostructured polymer films having 3D continuous aqua-sheet for fast proton conduction. T. Kobayashi, X. Zeng, T. Ichikawa


COLL 242. Assembly of anisotropic nanomaterials for flexible resistive switching device. Y. Park, E. Jeong, G. Moon

COLL 243. Growth and control of 2D rhombus supramolecular structures of fluorescent block copolymers. L. Han

COLL 244. Well-controlled rectangular and square platelet micelles self-assembled by poly(3-hexylthiophene)-b-polyethylene glycol. R. Qi

COLL 245. Self-assembled nanochamber arrays for liquid cell transmission electron microscopy. Y. BAE, B. Kim, J. Park
COLL 246. Colloidal gold nanostars as a SERS substrate for the detection of methimazole in urine using a handheld Raman spectrometer. C. Rusin, A. Mahmoud, M.T. McDermott

COLL 247. Seed-mediated co-reduction as a route to shape-controlled PdCu-PtCu core-shell nanoparticles. S. Atehortua Bueno, S.E. Skrabalak

COLL 248. In situ monitoring of the heterogeneous nucleation of a second metal on silver nanocubes using an isocyanide molecular probe. J. Ahn, Y. Zhang, Y. Wu, D. Qin


COLL 250. Tuneable emission in mercury chalcogenide nanoplatelets. S. Tenney, J. Caram


COLL 252. Aluminum nanocubes have sharp corners. B.D. Clark, C. Jacobson, M. Lou, A. Ali, G. Wu, L. Bursi, D. Renard, A. Tsai, P.J. Nordlander, N.J. Halas

COLL 253. Synthetic control of nanowire structure for high resolution electron microscopy. A. Bruefach, X. Song, M. Scott

COLL 254. Visible-transparent and UV-reflective supraballs of hollow silica nanospheres in solution. S. Lee, G. Yi


COLL 256. Ultrathin hydroxide nanosheets for old paper deacidification. S. Wang, S. Lei, X. Zeng


COLL 262. Computational study on the binding affinities of aliphatic $\alpha$-amino acids with graphene. J. Lazare, T. Dinadayalane

COLL 263. Effects of template and molecular nanostructure on the performance of organic-inorganic photomechanical actuator membranes based on aligned nanocrystals. X. Dong, C. Bardeen

COLL 264. Relationship between surface topography and ice adhesion on superhydrophobic surfaces. Y. Wang

COLL 265. Withdrawn.

COLL 266. Potential of click nucleic acids in widening nanoparticle functionality. A. Harguindeguy Sanchez

COLL 267. Functionalized nanodiamonds in the investigation of the aggregation phenomenon. L. Lott, C. Winstead

COLL 268. Chemically modified titanium boride nanosheets: High yield synthesis and hierarchical assembly into paper-like macrostructures. A. James, N. Pandey, M. Lenka, K. Jasuja

San Diego Convention Center
TBD

Surface Chemistry

Posters

S. L. Tait, Organizer

5:30 - 7:30
COLL 269. Enhancing electrochemical efficiency of hydroxyl radical formation on diamond electrodes by functionalization with hydrophobic monolayers. A.H. Henke, T. Saunders, J.A. Pedersen, R.J. Hamers

COLL 270. Intramolecular insights into adsorbate-substrate interactions by tip-enhanced Raman spectroscopy at the angstrom-scale. J.F. Schultz, S. Mahapatra, L. Li, N. Jiang

COLL 271. Evaluating the binding of ligands on silver nanocubes by in situ surface-enhanced Raman spectroscopy. J. Ahn, B. Vannatter, D. Qin

COLL 272. Breathable moisture responsive fibrous materials. L. Lao, J. Fan

COLL 273. Identifying the barriers to sub-nanometer resolution non-contact atomic force microscopy of hydrophobic surfaces in liquid. W.A. Nanney, Q. Yang, X. Hu, A. Martini, T. Ye


COLL 275. Surface immobilized thermos- and light-responsive hybrid microgels for modulation of surface properties. C. Ou, S. Giasson


COLL 278. Intermolecular π-interactions lead to homogeneously mixed phenyl-terminated self-assembled monolayers. T. Yu, M.D. Marquez, T. Lee

COLL 279. Recovering rare earth elements (REEs) from coal fly ash and power plant wastewater sludge leachates with an engineered sorbent. M. Dardona, T.M. Dittrich, J. Hovey, M.J. Allen, S.K. Mohanty

COLL 280. Reactivity of 4-NBD with single and multilayer layer MoS$_2$ on Au(111). Z. Liu, F. Wu, J.D. Batteas

COLL 281. Copper-based oligomerization-functionalization of patterned, ligand presenting, self-assembling monolayers (SAMs) at the liquid-HOPG interface. L. Wilczek, M. Zimmt

COLL 282. Highly efficient, biofriendly exfoliation of a-zirconium phosphate nanosheets in water using proteins. M. Malhotra, C.L. Baveghems, J. Gascon, C.V. Kumar

Section A
Surfaces & Interfaces in the Environment: Symposium in Honor of Vicki Grassian

Posters

Cosponsored by ENVR‡
A. P. Ault, J. Baltrusaitis, Organizers

5:30 - 7:30

COLL 283. Experimental and theoretical study of the optical properties of benzoic acid and benzoate, for understanding complex macromolecular photosensitizers. N. Karimova, M. Luo, R. Gerber, V.H. Grassian

COLL 284. Using easy ambient sonic-spray ionization mass spectrometry (EASI-MS) for depth profiling organic particles. L.M. Wingen, B.J. Finlayson Pitts

COLL 285. Stability of lipid monolayers at the air/sea water interface. M. Luo

COLL 286. Atmospheric organic aerosol acidity sensing via polymer degradation. Z. Lei, S.E. Bliesner, C. Mattson, K.A. Pratt, J.N. Albert, A.P. Ault

COLL 287. Surface potential of aqueous fatty acid and alcohol surfaces: Understanding temperature effects and ice nucleation. M.G. Vazquez de Vazquez, H.C. Allen

COLL 288. Synergistic performance of antimicrobial coatings deposited on air particulate filters. O.V. Ezeh, Y. Li, W. Han, K. Yeung


COLL 291. Investigation of monoethanolamine adsorption on oxide surfaces. A. Rose, I. Sit, V.H. Grassian

COLL 292. Impact of concentration and the presence of salt on the surface pKa of fatty acids at the air-water interface. M. Song

COLL 293. AFM-IR and SFG analysis on various geochemical interfaces with adsorbed BSA. D. Kim, H. Chen, W. Xiong, V.H. Grassian
COLL 294. α-Amino acid adsorption onto metal oxide nanoparticles: A spectroscopic study to understand the effects of pH and particle type. **I.B. Ustunol, N.I. Gonzalez-Pech, V.H. Grassian**

COLL 295. DNA adsorption on iron (III) oxide: Effects of pH and ionic strength on surface interactions. **I. Sit, V.H. Grassian**

Section A

San Diego Convention Center
TBD

**Targeted Delivery of Nanomedicines In Vivo**

**Posters**

P. del Pino, N. Feliu Torres, W. J. Parak, **Organizers**

5:30 - 7:30


COLL 298. Facile preparation of Au/Silk nanoparticles as a multifunctional drug delivery system. **A.T. Dao, H. Kasai**

Section A

San Diego Convention Center
TBD

**Theoretical & Experimental Investigations of Water Interactions with Materials**

**Posters**

Cosponsored by ANYL‡
D. Donadio, T. Guo, **Organizers**

5:30 - 7:30
COLL 299. Counterintuitive droplet motion mediated by printed charges. Q. Sun, X. Deng

COLL 300. Designing the armor for ultra-robust superhydrophobic surfaces. D. Wang, X. Deng


COLL 303. Quantitatively revealing the distribution of water within hydrophobic polymers via differential scanning calorimetry and theoretical prediction of hydrated polymer thermal profiles. C. Liu, A. Tripathi, J. Tsavalas

COLL 304. Ionovoltaic device for monitoring ion dynamics in aqueous-phase. W. Lee, S. Yoon, H. Jin, J. Han, Y. Cho, Y. Kim

COLL 305. Electrical energy generation from water droplets infiltration in porous copper oxide nanowires film. H. Jin, S. Yoon, W. Lee, J. Han, Y. Cho, Y. Kim

San Diego Convention Center
TBD

Water & Tribological Interfaces

Posters

F. Mangolini, M. Ruths, Organizers

5:30 - 7:30

COLL 306. Potential-induced nonlinear friction behavior between silica microsphere and gold surfaces in aqueous solution. S. Li, P. Bai, Y. Li, Y. Meng, L. Ma, Y. Tian


COLL 308. Non destructive method to calibrate the torsional spring constant of atomic force microscope cantilevers in viscous environments. C. Cafolla, A.F. Payam, K. Voitchovsky

COLL 309. Static friction phase diagram for hydrogel-like materials. T. Shoaib, R.M. Espinosa-Marzal
COLL 310. Understanding the IL-solid interface using water as molecular probes. M. Han, R.M. Espinosa-Marzal

COLL 311. Investigating pressure-solution and frictional behavior of calcite with an extended surface forces apparatus. Y. Diao, R.M. Espinosa-Marzal

Structure at Solid-Liquid Interfaces: Effects of Confinement & Chemical Patterning

Sponsored by ANYL, Cosponsored by COLL

MONDAY MORNING

Section A

San Diego Convention Center
Room 5B

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell

Mechanisms & Kinetics

Cosponsored by CATL
J. Rodriguez, D. Starr, S. L. Tait, Organizers
Z. Dohnalek, J. Zhu, Presiding

8:00 COLL 312. Interactions between arsenic and ferric iron during ferric coprecipitation treatment: Effect of arsenic on ferric oxides formation, and possible formation of ferric arsenate complexes. Q. Shi, S. Zhang, C. Christodoulatos, X. Meng

8:20 COLL 313. Vibrationally energy-driven reactions of CO₂ on Cu surfaces. J. Nakamura

8:50 COLL 314. Oxygen reduction reaction on Pt electrodes: From kinetics and spectroscopy to new materials. S. Linic


9:40 COLL 316. Mechanistic studies for the water-gas shift reaction on Cu-ceria catalysts. J. Rodriguez
10:10 Intermission.

10:30 COLL 317. Recent advances in methods for finding the mechanism and rate of surface processes. H. Jonsson


San Diego Convention Center
Room 6F

Surfaces & Interfaces in the Environment: Symposium in Honor of Vicki Grassian

Catalysis, Surfaces & Minerals

Cosponsored by ENVR† and WCC
A. P. Ault, J. Baltrusaitis, Organizers, Presiding

8:30 Introductory Remarks.

8:35 COLL 320. Surface chemistry of transition metal doped MgO nanoparticles and their reaction products in situ. J. Baltrusaitis, M. Silva, D. Kiani


9:30 COLL 322. Nanostructured adsorbents and catalysts for environmental applications. W. Song


10:10 COLL 324. Coupling molecular catalysts with light-harvesting surfaces for solar CO₂ reduction. P. Huang, S. Pantovich, J. Rondeau, S. Xu, G. Li
10:30 Intermission.

10:40 COLL 325. SFG spectro-microscopy for self-assembled materials. W. Xiong

11:00 COLL 326. Heterogeneous molecular interactions at the silica/water interface. D. Lesnicki, Y. Fang, K. Wall, S. Parashar, M. Gaigeot, V. Vaida, V.H. Grassian, M. Sulpizi


11:40 COLL 328. Surface chemistry of airborne mineral dust aerosols: Environmental and health implications. G. Rubasinghege

Section C

San Diego Convention Center
Room 31B

Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions

Dynamics in Crowded Conditions

J. Conrad, D. K. Schwartz, Organizers, Presiding

8:30 Introductory Remarks.


9:35 COLL 331. Advancements in fluorescence correlation spectroscopy super resolution optical fluctuation imaging (fcsSOFI) to quantify anomalous diffusion in crowded environments. L. Kisley

10:00 COLL 332. Complex salt dependence of polymer diffusion in polyelectrolyte multilayers. D.F. Kienle, D.K. Schwartz

10:20 Intermission.

11:05 COLL 334. Brownian motion within lipid bilayers is correlated over large distances. R.L. Schoch, I. Barel, F.L. Brown, G. Haran

11:25 COLL 335. Controlling the location of membrane components in planar supported bilayers. S. Sun, C. Liu, P.S. Cremer

Section D

San Diego Convention Center
Room 31A

Colloid & Surface Chemistry in Industry: Applications & Career Opportunities

Financially supported by Natural Immunogenics Corporation
N. A. Falk, R. I. Maccuspie, Organizers, Presiding

8:30 Introductory Remarks.

8:35 COLL 336. Career using colloidal and surface science in government, academia, and industry. R.I. Maccuspie

9:05 COLL 337. R&D careers at the Clorox Company: Making a difference every day. N.A. Falk

9:35 COLL 338. My experience from grad school to an industrial career at P&G. D. Hosseinpour

10:05 COLL 339. Careers at the industry-academia interface: Insights from sustainable nanotechnology and entrepreneurship. M. Hull

10:35 Intermission.

10:50 COLL 340. Not what I had thought: Surprising commercial applications of colloidal nanoparticles. S. Oldenburg

11:20 COLL 341. Contact lenses, insulation, memory foam, and composite lumber: Surface science is in everything! S. Diamanti

11:50 COLL 342. One research chemist’s career path in the public sector. J.M. Gorham

Section E
San Diego Convention Center
Room 30E

Nanomaterials

Metal Nanocrystals

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, Organizers
E. Chan, Presiding

9:00 COLL 343. Assembly of anisotropic quantum dots from periodic superlattices to aperiodic quasicrystals. O. Chen

9:30 COLL 344. Growth mechanism of five-fold twinned nanowires from multi-scale theory and simulations. K.A. Fichthorn


10:20 COLL 346. Maneuvering the surface chemistry of plasmonic Mg nanoparticles. J. Asselin, C. Boukouvala, J.S. Biggins, E. Ringe

10:40 COLL 347. Integration of sequential reactions in a continuous flow droplet reactor: Route to architecturally defined bimetallic nanostructures. J.S. Santana, S.E. Skrabalak

11:00 COLL 348. General synthetic strategy toward metal stannides, materials for next generation batteries. A. McGrath, S. Ganapathi, F. Ronning, S. Ivanov

11:20 COLL 349. Liquid cell electron microscopy reveals origin of heterogeneity of individual nanocrystals and their 3D atomic structures. B. Kim, J. Heo, J. Kim, S. Kim, J. Park

Section F

San Diego Convention Center
Room 30D

Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems

M. A. Ilies, Organizer
K. Sakurai, Organizer, Presiding

9:00 COLL 351. Fabricating Janus particles using seeded emulsion polymerization: Loading and simultaneous release of two drugs. E. Dehghani, M. Salami-Kalajahi, H. Roghani-Mamaqani, V. Karimkhani

9:30 COLL 352. Solubilization of binary mixture of hydrophobic solutes in multicompartment polymer nanoparticle. R. Nagarajan

10:00 Intermission.

10:30 COLL 353. Designed FN3 domains for extrahepatic delivery of oligonucleotides. S. Goldberg


Section G

San Diego Convention Center
Room 30C

**Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations**

**Nanocatalysts for Energy Applications**

H. Fan, J. He, Y. Sun, *Organizers*
O. Chen, *Organizer, Presiding*
H. Wang, *Presiding*

8:30 Introductory Remarks.

8:35 COLL 355. Single-site catalysts on nanostructured semiconductor surfaces for solar CO$_2$ reduction. E. Shaaban, N. Okolie, P. Huang, G. Li


9:35 COLL 357. Selective photochemistry with quantum dots. Y. Jiang, E.A. Weiss
10:05 COLL 358. Hot carriers in action: Plasmon-driven photocatalysis and photocorrosion. H. Wang

10:35 Intermission.

10:45 COLL 359. Plasmon-mediated charge transfer and energy transfer in photocatalysis. N. Wu

11:15 COLL 360. Photoinduced hot charge transfer at aluminum nanohole array/C60 interfaces. X. Liu, Y. Qian, G. Deng, M. Mirotznik, B. Debbrecht, B.G. DeLacy, Y. Rao


San Diego Convention Center
Room 29B

Water & Tribological Interfaces

Bioinspired Polymer Coatings

F. Mangolini, M. Ruths, Organizers
X. Banquy, A. Pitenis, Presiding

8:30 COLL 362. Stimuli-responsive and nanostructured polymer films for modulating adhesion and friction between surfaces: Fabrications, applications and limitations. S. Giasson, C. Drummond, L. Giraud, P. Vialar-Trarieux

9:00 COLL 363. Lubrication and wear protection of soft materials using bioinspired polymers. X. Banquy, J. Faivre, L. David, S. Benayoun, B. Ratna Shrestha, K. Matyjaszewski, G. Xie

9:30 COLL 364. Interaction forces and nanotribology of surfaces modified with bioinspired polymer coatings. M. Ruths

9:50 COLL 365. Tribological properties of polyelectrolyte brushes in water. A. Takahara

10:10 Intermission.

10:40 COLL 367. Soft and slippery: Microgel-coated surfaces under shear. P. Vialar, S. Giasson, C. Drummond

11:00 COLL 368. Low-pressure contact experiments reveal multiple modes of relaxation in polyacrylamide hydrogels. C.L. Johnson, J. Kim, A.C. Dunn


11:40 COLL 370. Water content and adhesion in aqueous gels. G. Degen, A. Pitenis


Section I

San Diego Convention Center
Room 30A

Hierarchical Assembly of Peptide & Protein: From Interaction & Structure to Application

M. Dong, S. Zhang, Organizers, Presiding

8:30 COLL 372. Nanostructured protein capsules. T. Knowles

9:00 COLL 373. Transmission mechanism of pathological alpha-synuclein. X. Mao

9:30 COLL 374. Phosphorylated amyloid protein forms different stains leading to neurodegenerative diseases. Y. Li

10:00 COLL 375. Peptide networking of beta 2 microglobulin over nano-gold colloidal particles’ surfaces. K. Yokoyama


10:50 COLL 377. Determination of polypeptides conformation in water with infrared nanospectroscopy. A. Centrone


11:50 COLL 379. Bioinspired siRNA delivery system based on higher order architecture of designer peptides. K. Slowinska

Nanotechnology & Single Cell Analysis in Biology & Medicine

Nanoscience

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

Ambient Pressure Spectroscopy in Complex Environments

Sponsored by CATL, Cosponsored by COLL

Structure at Solid-Liquid Interfaces: Effects of Confinement & Chemical Patterning

Sponsored by ANYL, Cosponsored by COLL

Future of Biomacromolecules at a Crossroads of Polymer Science & Biology

Synthetic Cells

Sponsored by POLY, Cosponsored by BIOL, CARB, CELL, COLL, ENVR, MEDI, PHYS and PMSE

MONDAY AFTERNOON

Section A

San Diego Convention Center
Room 5B

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell
Adsorption & Binding at Surfaces

Cosponsored by CATL
J. Rodriguez, D. Starr, Organizers
S. L. Tait, Organizer, Presiding
L. Gamble, Presiding

1:40 COLL 381. Interaction of atomic oxygen with the Ag(111) surface. S.B. Isbill, S. Roy

2:00 COLL 382. Oxygen dissociation on the Ag/Cu(111) near surface alloy. L. Cramer, E.H. Sykes

2:20 COLL 383. On-surface topochemistry of helicenes. K. Ernst

2:50 Intermission.


3:30 COLL 385. Synthetic surface chemistry: Versatile route to low-dimensional nanostructures. J. Gottfried

4:00 COLL 386. Designing nanostructures for plasmon-enhanced spectroscopies to probe chemistry at surfaces. C. Coplan, W. Scholl, M.A. Ticknor, M.M. Swartz, C.A. Lancaster. J.S. Shumaker-Parry

4:30 COLL 387. Neutron scattering investigations of molecular interactions with surfaces of nanomaterials. J.Z. Larese

San Diego Convention Center
Room 6F

Surfaces & Interfaces in the Environment: Symposium in Honor of Vicki Grassian

Aqueous Surfaces to Ocean & Organic-Surface Interactions

Cosponsored by ENVR and WCC
A. P. Ault, J. Baltrusaitis, Organizers, Presiding

2:00 COLL 388. Heterogeneous reactions on atmospherically relevant sea spray aerosols. K.A. Prather
2:20 COLL 389. Environmental marine interfaces: Inherent electric fields from dipole and electrolyte organization. **H.C. Allen**


3:00 COLL 391. Integrated computational and experimental strategies to explore air-water interfaces in sea spray aerosols and related model systems. **R.E. Amaro**

3:20 Intermission.

3:30 COLL 392. Physical chemistry of environmentally relevant multicomponent interfaces. **H.A. Al-Abadleh**

3:50 COLL 393. Surface-mediated photochemical pathways for the formation of HONO and NOx. **J.G. Navea**

4:10 COLL 394. Surface chemistry at a primarily undergraduate institution. **J.D. Schuttlefield Christus**

4:30 COLL 395. Thermodynamics and phase of sea spray aerosol droplets using microfluidics. L. Nandy, S. Liu, **C. Dutcher**

Section C

San Diego Convention Center
Room 31B

**Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions**

**Interfaces & Pores**

J. Conrad, D. K. Schwartz, *Organizers, Presiding*

2:00 COLL 396. Nanoparticle diffusion at liquid-solid interfaces and its implications on *in situ* liquid phase TEM studies. **U. Mirsaidov**

2:35 COLL 397. Dynamics of fluorescein embedded to amyloid beta peptide 1-40 at nano-scale gold surface. **K. Yokoyama**

3:25 Intermission.

3:35 COLL 399. Interfacial, confined, and concentrated colloidal diffusion. **M.A. Bevan**

4:10 COLL 400. Electrostatic barriers to nanoparticle escape from cavities in a porous matrix. **H. Wu, R. Sarfati, D. Wang, D.K. Schwartz**

Section D

San Diego Convention Center
Room 31A

**Colloid & Surface Chemistry in Industry: Applications & Career Opportunities**

Financially supported by Natural Immunogenics Corporation
N. A. Falk, R. I. Maccuspie, *Organizers, Presiding*

2:00 COLL 401. From Ph.D. lab bench researcher to multi-national startup cofounder. **T.A. Dankovich**

2:30 COLL 402. How does your academia experience support successful industrial career in colloidal science and nanotechnology? **N. Qin**

3:00 COLL 403. Colloidal science: Advancing human health. **D. Gorka**

3:30 Panel Discussion.

Section E

San Diego Convention Center
Room 30E

**Nanomaterials**

**Modulating the Photophysics of Colloidal Nanocrystals**

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

1:30 COLL 404. Photophysical properties of mixed-dimensional heterojunctions. **S. Padgaonkar, S. Amsterdam, H. Bergeron, T.J. Marks, M. Hersam, E.A. Weiss**
2:00 COLL 405. Investigating the role of aliovalent doping of quantum dots: From magnetic frustration in Fe:ZnSe (CdSe) to plasmonic behavior in Sn:In$_2$O$_3$. **G.F. Strouse**

2:30 COLL 406. Discovery and controlled assembly of lanthanide-doped nanoparticles for ultra-low-threshold upconversion microlasers. **E. Chan**

3:00 COLL 407. In situ elucidation of oxidation pathways to high quality magnetic nanoparticles. **J. Watt, D. Huber, A. Begay**

3:20 COLL 408. Evaluating the effect of dopants on the oxygen storage behavior of bixbyite vanadium sesquioxide (V$_2$O$_3$) nanocrystals. **L. Reimnitz, D.J. Milliron**

3:40 COLL 409. One-pot construction of Au-FeO$_x$@SiO$_2$ core-shell nanostructure with both high catalytic activity and good thermal stability. **H. Yin, Z. Guo**

4:00 COLL 410. Stabilization and functionalization of iron oxide colloidal nanoparticles for applications at harsh environment. **W. Wang**

4:20 COLL 411. Microwave synthesis of tailored lanthanide oxide nanoparticles and their surface modification to generate homogeneous nanocomposites. **L.J. Treadwell, J.P. Lassa, C. Wheeler-Davis**


Section F

San Diego Convention Center
Room 30D

**Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems**

K. Sakurai, **Organizer**
M. A. Ilies, **Organizer, Presiding**

2:00 COLL 413. Re-engineering immuno-exosome as theranostics. **S. Aryal, S. Rayamajhi, T. Nguyen, R. Marasini**


4:00 COLL 417. New synthetic lipid chains incorporated in the structure of cationic amphiphiles for nucleic acid delivery. A. BOURAOUI, M. Berchel, R. Ghanem, V. Vie, L. Deschamps, O. Lozach, T.L. Gall, T. Montier, P. Jaffres

4:30 COLL 418. Novel formulation strategies to overcome endosomal barriers for enhanced nucleic acid delivery. S. Patel, G. Sahay

Section G

San Diego Convention Center
Room 30C

Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations

O. Chen, H. Fan, J. He, Y. Sun, Organizers
G. Li, Presiding

1:15 Introductory Remarks.

1:20 COLL 419. Withdrawn.

1:50 COLL 420. Effect of surfactant on nanosynthesis of noble metal nanocrystals: Case of dioctadecyldimethylammonium chloride (DODAC). H. Lv, D. Xu, B. Liu


2:50 Intermission.

3:00 COLL 422. Polymer-guided synthesis of asymmetric multicomponent nanoparticles with enhanced catalytical activity. Z. Nie

3:30 COLL 423. Engineering metal-oxide interface at atomic scale in well-defined nanoparticles for catalytic conversion of small molecules. H. Zhu
4:00 COLL 424. Heterogeneous nanostructure integration for energy conversion and production. P. Gao

4:30 COLL 425. Metal-organic framework coated nanoparticles. C. Tsung

Section H

San Diego Convention Center
Room 29B

Water & Tribological Interfaces

Specialty Lubricants & Ionic Liquids

F. Mangolini, M. Ruths, Organizers
C. Drummond, W. T. Tysoe, Presiding

2:00 COLL 426. Biobased lubricant additives from vegetable oils and other renewable feedstocks. G. Biresaw, G. Bantchev, R.E. Harry-O'kuru


3:30 Intermission.

3:40 COLL 430. Laboratory studies of spacecraft fluid lubricants. J.M. Helt, P.P. Frantz, S.V. Didziulis

4:00 COLL 431. Ionic liquids as environmentally friendly additives for hydraulic fluids. X. He, H. Luo, T.J. Mathews, J. Qu

4:20 COLL 432. Synergistic interactions between thiolate-protected silver and palladium nanoparticles and their tribological properties. C. Kumara, H.M. Meyer III, J. Qu

Section I
San Diego Convention Center
Room 6E

**Biomaterials & Biointerfaces**

S. Romero-Vargas Castrillon, *Organizer*
J. Groll, *Presiding*

**2:00 COLL 433.** Sputtering-enabled intracellular X-ray photoelectron spectroscopy (SEI-XPS): New lab-based technique to investigate the biological fate of metal nanoparticles. **M. Moglianietti**, A. Turco, C. Malitesta, P. Pompa

**2:20 COLL 434.** Design near infrared absorbing triplet-triplet annihilation nanoparticles and application in tumor immunotherapy. **L. Huang**

**2:40 COLL 435.** Orchestrating cellular organization and phenotype in small diameter bi-layered vascular grafts by heterotypic scaffold design. T. Jüngst, I. Pennings, T. Rosenberg, D. Gawlitta, J. Groll

**3:10 COLL 436.** Silica nanofibers-based extracellular matrix scaffolds with tunable nanostructure. **Y. Nie**, N. Hao, J. Zhang


**3:50 COLL 438.** Role of core stiffness in regulating the intracellular fate of GM3-functionalized polymer nanoparticles. **B. Eshaghi**, N. Alsharif, K.A. Brown, S. Gummuluru, B.M. Reinhard

**4:10 COLL 439.** Reactive oxygen species sensitive dendrimers for chronic wound healing. **S. Wijetunge**, Y. Sun

**4:30 COLL 440.** Preparation and properties of POSS/HA composite film layer. **Y. Xiao**, W. Liu, x. zhang

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**Nanotechnology & Single Cell Analysis in Biology & Medicine**

**Nanoscience**

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS
Water, Ice, & Clathrate Hydrate Geochemistry: Molecular Structures, Microscopic Properties, & Energetics

Sponsored by GEOC, Cosponsored by COLL and PHYS

Ambient Pressure Spectroscopy in Complex Environments

Sponsored by CATL, Cosponsored by COLL

Structure at Solid-Liquid Interfaces: Effects of Confinement & Chemical Patterning

Sponsored by ANYL, Cosponsored by COLL

Future of Biomacromolecules at a Crossroads of Polymer Science & Biology

Tissue Engineering

Sponsored by POLY, Cosponsored by BIOL, CARB, CELL, COLL, ENVR, MEDI, PHYS and PMSE

MONDAY EVENING

San Diego Convention Center
TBD

Sci-Mix

R. Nagarajan, Organizer

8:00 - 10:00
TUESDAY MORNING

San Diego Convention Center
Room 5B

Adsorption & Reaction at Surfaces: Symposium in Honor of Charles T. Campbell

Electrocatalytic & Liquid Interfaces

Cosponsored by CATL
D. Starr, S. L. Tait, Organizers
J. Rodriguez, Organizer, Presiding
K. Ernst, Presiding

8:30 COLL 441. Can surface science help explain biology? L. Gamble

9:00 COLL 442. Aqueous-phase adsorption energies of model bio-oil compounds on Pt and Rh: Comparison between experiment and theory. N. Singh, B.R. Goldsmith, J. Akinola, I. Barth

9:20 COLL 443. Active structures and species of modified transition metal oxide electrocatalysts for the oxygen evolution reaction. B.E. Koel

9:50 Intermission.

10:10 COLL 444. Role of open circuit and external potentials to control electrocatalytic reductions. J.A. Lercher, O.Y. Gutierrez Tinoco, Y. Liu

10:40 COLL 445. Electrocatalytic alcohol oxidation by size-selected Pt clusters. A.C. Cass, H.F. McKnight, S.L. Anderson

11:00 COLL 446. Ambient pressure X-ray photoelectron spectroscopy with application to solar water splitting materials. D.E. Starr

11:30 COLL 447. Greatest hits album: Campbell group. C.T. Campbell
San Diego Convention Center
Room 6F

Basic Research in Colloids, Surfactants & Interfaces

Colloidal Assembly

R. Nagarajan, Organizer
S. Fujii, Presiding

8:30 COLL 448. Self-assembly of soft colloids into quasicrystals. M. Dulle, T. Jurczyk, T. Gruhn, S. Förster


9:20 COLL 450. Magnetic assembly of anisotropic nanostructures into responsive photonic crystals. Z. Li, Y. Yin


10:30 COLL 453. Block copolymer assembly of ligand stripped nanocrystals. G. Ong, D.J. Milliron

10:50 COLL 454. All-organic crystalline colloidal array for full color electrophoretic reflective display. W. Lee, H. Lee, E. Park


Section C

San Diego Convention Center
Room 31B

Confined Dynamics of Molecules & Particles at Interfaces, in Pores & under Crowded Conditions
Reactions & Structure in Confinement

J. Conrad, D. K. Schwartz, Organizers, Presiding


10:05 COLL 460. Surface segregation of binary particles in photonic colloidal assemblies. Z. Hu, N.C. Gianneschi


10:50 COLL 462. Investigation of water adlayers confined between 2D interface. Q. Li

11:15 COLL 463. Ionic liquid confined between metallic surfaces: What is the role of image charges? S. Ntim, M. Sulpizi


Section D

San Diego Convention Center
Room 31A

Targeted Delivery of Nanomedicines In Vivo

P. del Pino, Organizer
N. Feliu Torres, W. J. Parak, Organizers, Presiding

8:30 Introductory Remarks.
8:35 COLL 465. Design and synthesis of inorganic nanomaterials for medical applications. T. Hyeon

9:05 COLL 466. Aqueous stable gold nanostar/ZIF-8 nanocomposites for light triggered release of active cargo inside living cells. P. del Pino


10:05 Intermission.

10:35 COLL 468. Fluorinated nanomaterials for efficient nucleic acids delivery with medium serum. T. Zhang, Y. Huang, X. Ma, W. Guo, X. Liang

11:05 COLL 469. Design and implementation of gold-nanoparticle formulations as MUC1-directed cancer vaccines. R. Fiammengo, V. Mangini, I. Compañón, A. Guerreiro, G. Bernardes, F. Corzana

Section E

San Diego Convention Center
Room 29B

Nanomaterials

2D Nanoparticles

J. A. Hollingsworth, J. R. McBride, R. Nagarajan, Organizers
B. Sadtler, Presiding

8:30 COLL 470. Modulation of precursor reactivity in colloidal syntheses of WSe2-based nanostructures. A.M. Schimpf, J.Q. Geisenhoff

9:00 COLL 471. Colloidal Pb-free halide perovskite and group IV nanomaterials. M. Panthani

9:30 COLL 472. Tuning the band gap of semiconducting two-dimensional materials by changing the structure of polymer assembled on their surface. M.A. Mahmoud


10:40 COLL 475. Synthesis and characterization of modified hydroxyapatites. S. Alexandratos, H. Benhaim, A. Ashfaq, E. Amin


Section F
San Diego Convention Center
Room 30E

Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems

M. A. Ilies, Organizer
K. Sakurai, Organizer, Presiding

8:30 COLL 478. Understanding the excipient's effects on functionality of glass and polymer pre-filled syringes. L. Fang

9:00 COLL 479. Protein-excipient interactions via diffusion NMR: Case study of zwitterions. A. Erfani, N. Pickering, J.L. White, J.D. Ramsey, C. Aichele


10:00 COLL 481. Versatile single chain polymer nanoparticles in controlled drug delivery. J. Paats, N. Hamelmann, P. Kröger, J.M. Paulusse

10:30 COLL 482. Chaperone effect of cationic comb-type copolymers for an amphiphilic peptide disturbing lipid membranes. W. Sakamoto, N. Shimada, A. Maruyama

11:00 COLL 483. Macromolecular HPMA-based nanoparticles with cholesterol for solid tumor targeting: Synthesis, internal structure, and interaction with blood plasma proteins. S. Filippov

11:30 COLL 484. Quantifying drug adsorption to lipid membranes using second harmonic generation. G.Y. Stokes
San Diego Convention Center
Room 30D

Frontiers & Challenges in Nanoparticle-Mediated Chemical Transformations

Hybrid Nanomaterials & Applications

O. Chen, H. Fan, J. He, Y. Sun, Organizers
B. Liu, Presiding

8:30 Introductory Remarks.

8:35 COLL 485. Modulation of surface states on bimetallic nanoicosahedra toward catalytic energy conversion. C. Kuo, M. Lu, Y. Chuang, D.A. Cullen

9:05 COLL 486. Highly tunable platform for biomimetic catalysis from nanocrystal-polymer composites. M. Cargnello, A. Riscoe, C. Wrasman, A. Herzing, S. Bare


10:05 Intermission.


10:55 COLL 490. Coupling magnetic and plasmonic anisotropy in hybrid nanorods for mechanochromic films. Z. Li, Y. Yin

11:15 COLL 491. 3D-porous plate-like Ag nanostructures for efficient CO₂ electroreduction. S.C. Abeyweera, Y. Sun


San Diego Convention Center
Room 5A

Section H
Colloids & Nanomaterials for Water Purification

C. Drew, Organizer, Presiding

8:30 Introductory Remarks.


9:15 COLL 495. Determining the properties of flocs made of aluminum oxide particles and lignin-acrylic acid polymers. P. Fatehi


9:55 COLL 497. Space-confined seeded growth of black silver nanostructures for solar steam generation. J. Chen, Y. Yin

10:15 COLL 498. Remediating aqueous waste with supramolecular gels to create smart materials with high-tech applications. D.K. Smith

10:35 COLL 499. Imprinted copolymer/SiO$_2$ hybrid for selective adsorption of bisphenol A. K. Chin, S. Chang

10:55 COLL 500. Electrospun nanofibrous polycyclodextrin membrane for efficient removal of polycyclic aromatic hydrocarbons (PAHs) and heavy metals from water. A. Celebioglu, F. Topuz, Z.I. Yildiz, T. Uyar


11:55 COLL 503. Surface modified magnetic nanoparticles as efficient adsorbents for heavy metals removal from wastewater: Progress and prospects. M.O. Ojemaye, O.O. Okoh, A. Okoh

12:15 Concluding Remarks.

Section I
8:30 COLL 504. Visualizing the inner architecture of poly(e-caprolactone)–based biomaterials and its impact on performance optimization. B. Li, Y. Wu, A.J. Bauer

8:50 COLL 505. Substrate-independent micropatterning of polymer brushes using chemical vapor deposition-based polymerization initiator films. R. Kumar, A. Welle, I. Kopyeva, F. Becker, J. Lahann


9:30 COLL 507. Upper critical solution temperature (UCST) behavior of core cross-linked polymer micelle in water. S. Yusa, M. Ohshio, K. Ishihara, A. Maruyama, N. Shimada


10:40 COLL 510. Catechol-modified poly(oxazoline)s with tunable degradability facilitate cell invasion and lateral cartilage integration. J. Blöhbaum, O. Berberich, J. Tessmar, T. Blunk, J. Groll

11:00 COLL 511. Scalable synthesis of on-demand degradable hydrogel particles. P. Shieh, J.A. Johnson


Water, Ice, & Clathrate Hydrate Geochemistry: Molecular Structures, Microscopic Properties, & Energetics
Sponsored by GEOC, Cosponsored by COLL and PHYS

Surfactant & Colloid Science Applied to Formulations
Sponsored by AGRO, Cosponsored by COLL

TUESDAY AFTERNOON

San Diego Convention Center
Room 5B

Langmuir Lectures, NanoLetters Award Lecture, ACS Materials & Interfaces Award Lecture

R. Nagarajan, Organizer
L. Tribe, Presiding

2:00 Introduction of Langmuir Lecturer, A. Sen.

2:10 COLL 513. Fantastic voyage: Designing self-powered nano/microbots. A. Sen

3:00 Introduction of of Langmuir Lecturer, K. Ariga.


4:00 Introduction of ACS AMI Lecturer, J. Schiffman.

4:10 COLL 515. Interfacing polymer materials with microbiology. J.D. Schiffman

Section B

San Diego Convention Center
Room 6F

Basic Research in Colloids, Surfactants & Interfaces

Molecular Self-Assembly
R. Nagarajan, Organizer
Z. Niroobakhsh, Presiding

2:00 COLL 516. End-group ionisation enables the use of poly(N-(2-methacryloyloxy)ethyl pyrrolidone) as an electrosteric stabiliser block for polymerisation-induced self-assembly in aqueous media. R. Gibson, S.P. Armes

2:20 COLL 517. Hydrodynamic instabilities in fatty acid/surfactant self-assembling systems. Z. Niroobakhsh, J. LaNasa, A. Belmonte, R. Hickey

2:50 COLL 518. Rediscovering micelle-like behavior of resorcinarene capsules and their unique aggregation number corresponding to Platonic structures. S. Fujii, K. Sakurai, J. Lee, R. Takahashi


3:40 COLL 520. Kinetic-control effects towards persistent micelle templating. A. Sarkar, M. Stefik

4:00 COLL 521. Tuning of the aggregation number of platonic micelles with binary mixture of calix[4]arene surfactants. J. Lee, S. Fujii, R. Takahashi, K. Sakurai


Section C

San Diego Convention Center
Room 31B

Surface Chemistry

S. L. Tait, Organizer
O. Guseva, E. Tyrode, Presiding

2:00 COLL 524. Model predictions of phase transformation sequence in Al-oxide-hydroxide system in pure water by bulk and interface thermodynamics. O. Guseva, P. Schmutz, L.P. Jeurgens
2:20 COLL 525. Measuring the surface potential at water and pure liquid surfaces. T. Adel, S.M. Baumler, H.C. Allen

2:40 COLL 526. Probing mixed octadecanol/stearic acid monolayers at the air/water interface. K. Judd, P.S. Cremer

3:00 COLL 527. Do monovalent anions preferentially adsorb to extended hydrophobic surfaces exposing methyl groups? E. Tyrode

3:20 COLL 528. Tracking the molecular organisation of water and alcohol mixtures at hydrophobic solid interfaces. J.W. Foster, H. Kusumaatmaja, K. Voitchovsky

3:40 Intermission.

4:00 COLL 529. Dilution effects on the behavior of thin ionic liquid films probed with electrochemistry and vibrational spectroscopy. A. Horvath, R.S. Anaredy, S.K. Shaw

4:20 COLL 530. Dual-responsive fluorinated ionic liquid infused slippery surfaces. Q. Rao, Q. Zhang, X. Zhan, F. Chen


5:00 COLL 532. Highly thermally stable hybrid coatings by fluoride rearrangement of phenylsilsesquioxanes and methyltrimethoxysilane. W. Liu, Y. Xiao, x. zhang

Section D

San Diego Convention Center
Room 31A

Targeted Delivery of Nanomedicines In Vivo

N. Feliu Torres, W. J. Parak, Organizers
P. del Pino, Organizer, Presiding

2:00 COLL 533. Understanding the fate and behaviour of nanoparticle in biological system. C. Chen, L. Wang, Y. Zhao

2:30 COLL 534. Silver nanoparticles toxicity and nanomedicine. S. Liu

3:00 COLL 535. Use of polymeric nanoparticle platform targeting the liver to induce Treg-mediated antigen-specific immune tolerance in a pulmonary allergen sensitization model. T. Xia
3:30 Intermission.

4:00 COLL 536. Towards tracking stem cells and macrophages with gold and iron oxide nanoparticles: Choice of the best suited particles. **N. Feliu Torres**

4:30 COLL 537. Drug delivery via polymer-drug conjugates for pancreatic ductal adenocarcinoma. **R. Sanyal**

**What does Nanotechnology Have to do with Agriculture?**
Sponsored by AGRO, Cosponsored by COLL

**Surfactant & Colloid Science Applied to Formulations**
Sponsored by AGRO, Cosponsored by COLL

**TUESDAY EVENING**

**Future of Biomacromolecules at a Crossroads of Polymer Science & Biology**
Sponsored by POLY, Cosponsored by BIOL, CARB, CELL, COLL, ENVR, MEDI, PHYS and PMSE

**WEDNESDAY MORNING**

Section A

San Diego Convention Center
Room 5B

**Basic Research in Colloids, Surfactants & Interfaces**

**Molecular Behavior at Interfaces**

R. Nagarajan, *Organizer*
U. Natarajan, *Presiding*

**8:30 COLL 538.** Surface pressure-induced crystallization behaviour of poly(caprolactone)-based mixed monolayers at the air/water interface. B. Li, A. Esker

**8:50 COLL 539.** It takes two to tangle: Nonionic polymer aggregation behavior at the oil/water interface as affected by varying surfactants. R. Altman, G.L. Richmond

**9:10 COLL 540.** Bicarbonate charging of hydrophobic/water interfaces. F. Ganachaud, J. Bernard, X. Yan, A. Stocco

**9:30 COLL 541.** Ion interactions with carboxylic acid monolayers: Surface charge, reversed affinities, and contact ion pairing as revealed by non-linear vibrational spectroscopy. E. Tyrode

**9:50 COLL 542.** Effect of polymer charge and interface concentration on structure of isotactic poly(acrylic acid) PAA and isotactic poly(methacrylic acid) PMA at oil-water interface. U. Natarajan

**10:20 COLL 543.** Dual actions of hydrotropes in bulk solution and at interface. M.A. Anisimov

**10:40 COLL 544.** Molecule dynamics simulations of the trisiloxane surfactant monolayers at air-water and heptane-water interfaces. X. Zhuang, R. Ananth

**11:00 COLL 545.** Surface dipoles give rise to the largest odd-even effects ever reported: Structure and wettability of CF₃-terminated n-alkyl xanthic acid self-assembled monolayers. H. Tran, H. Lee, S. Sakunkaewkasem, L.T. Han, T. Yu, M. Valverde, M.D. Marquez, L. Grabow, T. Lee


Section B

San Diego Convention Center
Room 6F

**Surfaces & Interfaces in the Environment: Symposium in Honor of Vicki Grassian**

**Organic-Surface interactions & Organic Aerosols**

Cosponsored by ENVR and WCC
A. P. Ault, J. Baltrusaitis, *Organizers, Presiding*

**8:30 Introductory Remarks.**
8:35 COLL 547. Five-isotope approach to tracking the origin and evolution of life. M.H. Thiemens, R. Shaheen, L. Mang

9:00 COLL 548. Multiphase chemistry of reactive oxygen species in indoor environments and human surfaces. M. Shiraiwa

9:20 COLL 549. Interfacial dissolved O$_2$ consumption by photolyzed aqueous pyruvic acid. M.I. Guzman, A.J. Eugene


10:00 COLL 551. Condensed-phase photochemical processes in atmospheric particulate matter. S.A. Nizkorodov

10:20 Intermission.

10:30 COLL 552. Molecular origin for cloud activation. F. Geiger

10:50 COLL 553. Study of 3D morphology, phase state and viscoelastic properties of individual substrate-deposited particles. A.V. Tivanski

11:10 COLL 554. Chemistry of atmospheric brown carbon. A. Laskin


Section C

San Diego Convention Center
Room 31B

Surface Chemistry

S. L. Tait, Organizer
D. L. Patrick, L. Wong, Presiding


8:50 COLL 557. Probing the electrochemical reductive stability of decanethiol/triazole-ferrocene mixed self-assembled monolayers on Au. B.E. Bonsall, C.C. McCrory
9:10 COLL 558. Surface chemistry for modification and tuning of polymer CORALS. A. Sidorenko, P.B. Moore, C. McConnell


9:50 Intermission.

10:10 COLL 560. Biocatalytic parallelized scanning probe lithography for the additive fabrication of conjugated polymer structures. L. Wong, J. Hosford

10:30 COLL 561. Combined experimental and triple-mode sorption modeling approach for sorption and diffusion in polymeric materials. H.N. Sharma, Y. Sun, E. Glascoe


Section D

San Diego Convention Center
Room 31A

Targeted Delivery of Nanomedicines In Vivo

P. del Pino, Organizer
N. Feliu Torres, W. J. Parak, Organizers, Presiding

8:30 COLL 565. Enzyme-responsive actively tumor-penetrating nanomedicine overcomes tumor diffusion barriers and produces potent anticancer efficacy. Y. Shen, Q. Zhou

9:00 COLL 566. Immunoreactions in the presence of nanostructures. K. Riehemann, H. Fuchs, K. Langer

9:30 COLL 567. Combination of cowpea mosaic virus and PD-1 blockade works synergistically to improve therapeutic efficacy. C. Wang, N.F. Steinmetz

10:00 Intermission.
10:30 COLL 568. Designed Au-TiO₂ nanoreactors for spatiotemporal controlled, NIR-promoted photocatalytic transformations inside living cells. **M. Correa-Duarte**

11:00 COLL 569. Withdrawn.

Section E

San Diego Convention Center
Room 30E

Nanomaterials

Optimizing Nanostructure for Practical Applications

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

8:30 COLL 570. Nanoscale colocalization of fluorogenic probes reveals the role of oxygen vacancies in the photocatalytic activity of tungsten oxide nanowires. **B. Sadtler**


9:30 COLL 572. Metal nanoclusters: New light harvesting antenna for solar energy conversion. **J. Bang**

9:50 COLL 573. Space-confined seeded growth of Au nanostructures for highly efficient photo-induced cancer therapy. **J. Chen**, Y. Yin


Section F

San Diego Convention Center
Room 30D
Formulation Strategies to Control the Physicochemical Parameters of Drug & Nucleic Acid Delivery Systems

K. Sakurai, Organizer
M. A. Ilies, Organizer, Presiding


9:00 COLL 578. Development of ROS-triggered degradable nanoparticles using oligoprololne peptides as biomolecule delivery platform for plant cells. R. Kawasaki, K. Tsuchiya, K. Numata

9:30 COLL 579. Quantifying hyaluronic acid and metal-organic framework for biomedical applications using gas-phase electrophoresis. D. Tsai, H. Wang

10:00 COLL 580. Controlled synthesis of calcium carbonate nanoparticles and stimuli-responsive multilayered nanocapsules for oral drug delivery. N. Elbaz, A. Owen, S. Rannard, T. McDonald

10:30 COLL 581. Withdrawn.

11:00 COLL 582. Improving the therapeutic efficacy of nucleic acids and small molecule drugs using stimuli-responsive nanostructures. J.L. Rouge


Section G

San Diego Convention Center
Room 30C

Basic Research in Colloids, Surfactants & Interfaces

Emulsions, Drops & Dispersions

R. Nagarajan, Organizer
S. Choi, Presiding

8:30 COLL 584. Surfactant-induced reorganization of the hydrophobic phase at nanoemulsion interfaces. A. Carpenter, G.L. Richmond
8:50 COLL 585. Oil-in-oil Pickering emulsions stabilized solely by diblock copolymer nanoparticles. M.J. Rymaruk, S. Brown, C. Williams, S.P. Armes

9:10 COLL 586. Understanding uniform, fast, and scalable buoyancy-driven macro-sized drop generations. S. Choi


10:00 COLL 588. Two’s company, three’s a crowd: How ions tag along for the ride with SDS and PEI on a nanoemulsion surface. E. Tran, G.L. Richmond


11:00 COLL 591. Simple creams, complex structures. D. Ahmadi, D. Barlow, J. Lawrence

San Diego Convention Center
Room 33C

Theoretical & Experimental Investigations of Water Interactions with Materials

Cosponsored by ANYL‡
D. Donadio, Organizer
T. Guo, Organizer, Presiding
K. Bradford,Presiding


9:10 COLL 593. NMR characterization of dehydration of zeolites by three heating methods. T. Guo

10:10 COLL 595. Drop manipulation on superhydrophobic surface with dielectrowetting. J. Yang, X. Deng


11:10 COLL 597. Withdrawn.

San Diego Convention Center
Room 6C

Biomaterials & Biointerfaces

S. Romero-Vargas Castrillon, Organizer
M. Geoghegan, Presiding

8:30 COLL 598. Charge and structure quantification of peptides at aqueous interfaces. F. Geiger, Q. Cui, N. Dalchand

8:50 COLL 599. Dynamics of cellular membranes and their interactions with nanomaterials. P. Elvati, C. Lin, Y. Wang, A. Violi


10:00 COLL 602. Photodegradable hydrogels for retrieval of bacteria cells from screening interfaces. R.R. Hansen, N. Fattahi, N. Barua, P. Nieves-Otero, A. van der Vlies, T.G. Platt


11:00 COLL 605. Tuning surface charge as a general approach to improving immobilized enzyme function on mixed lipid bilayers. A.F. Chaparro Sosa, K.J. Black, J. Kaar, D.K. Schwartz
11:20 COLL 606. Molecular interactions at the cellulose-lignin interface explored via molecular simulation. J.V. Vermaas, M.F. Crowley, G. Beckham

Future of Biomacromolecules at a Crossroads of Polymer Science & Biology

Delivery Systems

Sponsored by POLY, Cosponsored by BIOL, CARB, CELL, COLL, ENVR, MEDI, PHYS and PMSE

Surfactant & Colloid Science Applied to Formulations

Sponsored by AGRO, Cosponsored by COLL

WEDNESDAY AFTERNOON

San Diego Convention Center
Room 5B

Basic Research in Colloids, Surfactants & Interfaces

Colloidal Materials

R. Nagarajan, Organizer
S. S. Datta, Presiding


2:20 COLL 608. Synthesis of hybrid polystyrene-poly(organosiloxane) particles with complex architectures through use of organotrialkoxysilanes as surfmer. P. Buskens, D. Mann, M. Segers, H. Keul, M. Moller


4:10 COLL 613. Polymer-based energetic composites with improved thermal conductivity through bioinspired interfacial engineering strategy. G. He

4:30 COLL 614. New insight into the role of Ag in the seed-mediated gold nanorods synthesis. J. Zhu, R. Lennox

4:50 COLL 615. Protection of organic molecular microcrystals encapsulated under two-dimensional materials. W. Li, N. Tierce, E. Bekyarova, C.J. Bardeen

5:10 COLL 616. Understanding interfacial interactions to unlock the potential of bioinspired nanomaterials. S.V. Patwardhan, J. Manning, M. Jorge, A. Centi, B. Walkley, J. Provis

San Diego Convention Center
Room 6F

Surfaces & Interfaces in the Environment: Symposium in Honor of Vicki Grassian

Nano in the Environment & Plenary Lecture

Cosponsored by ENVR* and WCC
A. P. Ault, J. Baltrusaitis, *Organizers, Presiding

2:00 Introductory Remarks.

2:05 COLL 617. Changes in the physiochemical properties of MoO₃ nanoparticles in aquatic systems. D.F. Rodrigues, S. Fanourakis, J.P. Bahamonde

2:25 COLL 618. Accelerating nano-EHS research: Applications in nano-chemistry and nano-toxicology. C. Sayes

3:05 COLL 620. Molecular level studies of carbon-based nanomaterials in aquatic environments. H. Fairbrother

3:25 COLL 621. Interfacial energy: Key to controlling calcium carbonate formation on environmentally-abundant surfaces. Y. Jun, Q. Li, Y. Zhu

3:45 Intermission.

3:55 COLL 622. Applications of nanotechnology for water treatment: Electrospun nanofibers as a platform for integrated treatment and monitoring. D.M. Cwiertny

4:15 COLL 623. Insight into the interactions of biomolecules and natural organic matter with mesoporous silica nanomaterials. S.C. Larsen

4:35 COLL 624. Physical chemistry of environmental interfaces. V.H. Grassian

5:25 Concluding Remarks.

San Diego Convention Center
Room 31B

Surface Chemistry

S. L. Tait, Organizer
Y. Cardona Quintero, F. Kunc, Presiding

2:00 COLL 625. Multimethod quantification of nanomaterial surface functional groups. F. Kunc, Y. Sun, A. Brinkmann, G. Lopinski, L. Johnston, V. Balhara


3:00 COLL 628. Using non-standard N-heterocyclic carbenes to functionalize gold surfaces and analysis of their binding via SERS. S. Strausser, L. Sherman, J.P. Camden, D.M. Jenkins
3:20 COLL 629. Surface energy determination comparison: Inverse gas chromatography and contact angle goniometry. W. Skinner, S. Manni

3:40 Intermission.

4:00 COLL 630. Computational study of mechanism of different amino acids binding to Graphene sheet in gas phase with DFT. M. Malhotra, C.V. Kumar, J. Gascon


5:00 COLL 633. Adsorption of Sarin on dry, wet, and doped TiO₂(110) using density functional theory. Y. Cardona Quintero, R. Nagarajan

Section D

San Diego Convention Center
Room 31A

Targeted Delivery of Nanomedicines In Vivo

P. del Pino, Organizer
N. Feliu Torres, W. J. Parak, Organizers, Presiding

2:00 COLL 634. Transition metal oxide nanostructures for a magnetic goal in nanomedicine. V. Salgueirino

2:30 COLL 635. Fabrication of 3D plasmonic micro-structured super-crystals arrays. N. Pazos-Perez, R. Alvarez-Puebla

3:00 COLL 636. Theranostic carcoded nanoparticles personalize cancer medicine by predicting the drug response in the primary tumor microenvironment and in brain metastasis. A. Schroeder

3:30 Intermission.

4:00 COLL 637. Multimodal nanostructures as theragnostic agent in Alzheimer disease at early stages: PANA project. M. Rodríguez-Pérez, B. Pelaz, P. Aguiar, C. Correa, E. Polo, L. Vázquez-Vázquez, E. López-Arias, F. Campos, J. Castillo, P. del Pino, T. Sobrino
4:20 COLL 638. Targeted delivery of supra-assembled nanocargoes in vivo to overcome the chemo-resistance in colon cancer. N. Thorat, J. Bauer

4:40 COLL 639. Investigating tantalum nanoparticles for X-ray CT and therapeutic use. S. Chakravarty, J.M. Hix, E.M. Shapiro

Section E

San Diego Convention Center
Room 30E

Nanomaterials

Synthesis of Metal & Metal Oxide Nanocrystals

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

2:00 COLL 640. Two-phase synthesis of gold-copper bimetallic nanoparticles of tunable composition. D. Hofmann, C.J. Murphy

2:20 COLL 641. Tuning the frequency of localized surface plasmon resonances. C.R. Conti, G.F. Strouse


3:00 COLL 643. Electrochromic niobium oxide nanorods. C. Saez Cabezas, G. Ong, S.L. Skjærvø, D.J. Milliron


4:00 COLL 646. Precision thermal and reaction control leads to selective formation of amphiphilic cationic gold clusters in the critical size range, $n = 130-146$ Au atoms [1.6-nm core diameter]. M. Hoque, A. Antonysamy, R. Whetten, K. Mayer

4:40 COLL 648. Site-selective carving and co-deposition: Transformation of Ag nanocubes into concave nanocrystals encased by Au-Ag alloy frames. J. Ahn, D. Wang, J. Zhang, Y. Ding, D. Qin

5:00 COLL 649. Synthesis of Au-Pt coaxial nanotubes with high photothermal stability for chemo-photothermal therapy. Q. Zhang, Z. Nie

Section F

San Diego Convention Center
Room 30D

Basic Research in Colloids, Surfactants & Interfaces

Nanomaterials

R. Nagarajan, Organizer
C. Drew, Presiding

2:00 COLL 650. Enzymatically activated aggregation and cell-adhesion of peptide-nanoparticle conjugates selectively target tumor tissue with enhanced delivery efficiency. H. Huang, S. O'Brien, R. Ulijn


3:00 COLL 653. Multiscale analysis of the doping-driven wettability of two-dimensional materials. T. Tian, S. Lin, S. Li, L. Zhao, E. Santos, C. Shih


3:40 COLL 655. Withdrawn.


4:20 COLL 657. Monodisperse magnetic silica hexapods. J. Kim, G. Yi
4:40 COLL 658. Additive-free processing of carbon nanotubes in cresols as dispersions, pastes, gels and dough. K. Chiou, J. Huang

5:00 COLL 659. Biocatalytic porous frameworks with reversible pH-gated speed regulation for smart micromotors. S. Gao, K. liang, V. Chen

San Diego Convention Center
Room 30C

Basic Research in Colloids, Surfactants & Interfaces
Polymer Particles & Gels

R. Nagarajan, Organizer
A. Mallia, Presiding

2:00 COLL 660. Characterization of core-shell latex particles by capillary electrophoresis. M. Jing, W. Gao, W. Young, L. Yin

2:20 COLL 661. CO2-responsive polymer nanoparticles. Y. Shieh, F. Hu, P. Tai


3:00 COLL 663. Tuning composition and hydrophobicity of ionic statistical amphiphilic copolymers to control and predict copolymer particle size. T.J. NEal, O. Mykhaylyk, S. Spain

3:20 COLL 664. Structure property correlations, gelation, mechanical, and thermal properties of molecular gels derived from N-phenyloctadecanamides and N-(phenylalkyl)octadecanamides as molecular gelators. A. Mallia, K. Kanemitsu, J. Kim


4:30 COLL 667. New cationic sterically-stabilized diblock copolymer nanoparticles exhibit exceptionally high salt tolerance in aqueous media. S. Byard, A. Blanazs, S.P. Armes

4:50 COLL 668. Preparation of fluorescent microspheres with conjugated polymers. L. Fan

San Diego Convention Center
Room 33C

Theoretical & Experimental Investigations of Water Interactions with Materials

Cosponsored by ANYL‡
T. Guo, Organizer
D. Donadio, Organizer, Presiding
D. S. Bergsman, Presiding

2:00 COLL 670. Competitive interactions in confined environments. A.E. Clark

2:40 COLL 671. Modeling of the hydration of nanoporous materials by machine learning. M. Bauchy

3:00 COLL 672. Computer modeling of water adsorption and water-mediated proton conduction in metal-organic frameworks. F. Paesani


4:00 COLL 674. Polarizable molecular simulations reveal how silicon-containing functional groups govern the desalination mechanism in nanoporous graphene. L. Wang, Y. Qiu, B. Schwegler

4:40 COLL 675. Water at charged interfaces: Localized vs. delocalized charges. M. Sulpizi

San Diego Convention Center
Room 29B

Biomaterials & Biointerfaces

S. Romero-Vargas Castrillon, Organizer
N. Kornienko, Presiding
2:00 COLL 676. β-Diketonate-iron(III) complex: Versatile fluorine-19 MRI signal enhancement agent. C. Wang, H. Xu, S. Adams, W. Zhu, E. Ahrens

2:20 COLL 677. Inhibition of leukocyte adhesion in the presence of model particulate drug carriers. W. Kelley, P. Onyskiw, C. Fromen, O. Eniola-Adefeso

2:40 COLL 678. Interfacing enzymes with inorganic materials for semi-artificial photosynthesis. N. Kornienko


4:30 COLL 683. Extracellular DNA provides structural integrity to a Micrococcus luteus biofilm. J. Blakeman, A. Morales-García, A. Hayward, J. Mukherjee, K. Gori, N. Lant, M. Geoghegan


Future of Biomacromolecules at a Crossroads of Polymer Science & Biology

Biomaterials

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THURSDAY MORNING
San Diego Convention Center
Room 5B

Basic Research in Colloids, Surfactants & Interfaces

Applications of Novel Colloids

R. Nagarajan, Organizer
T. Guo, Presiding


9:10 COLL 687. Fabrication of Janus nanocups and selective loading with cargo. X. Qiang, A. Steinhaus, C. Chen, R. Chakroun, A. Gröschel

9:30 COLL 688. Synthesis and performance of nanoreactors from mesoporous silica. T. Guo

10:00 COLL 689. One-pot hydrothermal synthesis of benzalkonium-templated mesostructured silica antibacterial agents. V. Dubovoy, A. Ganti, T. Zhang, H. Al-Tameemi, J.D. Cerezo, J.M. Boyd, T.G. Asefa


10:40 COLL 691. Photothermal killing of Escherichia coli using gold nanorods and gold nanobipyramids. S. Yougbare, T. Kuo

11:00 COLL 692. Structure-dependent optical modulation of propulsion and collective behavior of acoustic/light-driven hybrid microbowls. S. Tang, J. Wang

11:20 COLL 693. Photochemically patterned metal nanoparticle strontium barium niobate surfaces with tunable wettability, enhanced raman scattering and fluorescence emission. E. Barnes, L. Soblosky, E. Alberts, L. Johnson, J. Guy, A. Kumar

Section B

San Diego Convention Center
Room 6F
Basic Research in Colloids, Surfactants & Interfaces

Surfaces & Interfaces in the Environment

R. Nagarajan, Organizer
X. Yu, Presiding


8:50 COLL 695. Heterogeneity in urban environmental films. J. DeYoung, J.S. Grant, S.K. Shaw


9:30 COLL 697. In situ molecular imaging of the air-liquid and liquid-liquid interface in the environment. X. Yu

10:00 COLL 698. Reflection-absorption infrared spectroscopy is not only a vibrational spectroscopy: Case of thin amorphous solid water (ASW) films. J. Maurais, P. Ayotte


10:40 COLL 700. Phenol-water vapor deposition in long-term exposure: Different interfaces, similar sigmoid kinetics, and enhanced water retention. M. Borisover, N. Bukhanovsky, M. Lado

11:00 COLL 701. Photochemical reaction dynamics and absorption spectroscopy of environmentally important species. D. Shemesh, M. Luo, R. Gerber, V.H. Grassian

11:20 COLL 702. Design and formulation of an iodine-based antimicrobial coating for sporicidal and bactericidal activities. O.V. Ezeh, Y. Li, W. Han, K. Yeung

11:40 COLL 703. Surface chemistry of cerium oxide nanoparticles in an engineered UV/persulfate process with dissolved organic matter. X. Wu, Y. Rao, Y. Jun

Section C

San Diego Convention Center
Room 31B
Surface Chemistry

S. L. Tait, Organizer
J. M. Gorham, K. Tan, Presiding


8:50 COLL 705. Pair approximation of heterogeneous reaction networks. C.A. Kim, T.A. Van Voorhis


9:50 Intermission.


10:30 COLL 709. Challenges in surface chemical analysis in nanomaterial systems. J.M. Gorham, D. Gorka

10:50 COLL 710. Hydrophobic CeO₂ nanoparticles coating using polymer binder for enhanced adhesion capability. S. Yasmeen, R. Khan, H.B. Lee


Section D

San Diego Convention Center
Room 31A

Targeted Delivery of Nanomedicines In Vivo

N. Feliu Torres, W. J. Parak, Organizers
P. del Pino, Organizer, Presiding

8:30 COLL 713. Applications of SERS encoded particles. R. Alvarez-Puebla


10:00 Intermission.

10:30 COLL 716. Accessing intracellular targets using designed nanoplatforms. S. Dhar

11:00 COLL 717. Assessing the effect of surface chemistry on targeted delivery and cellular uptake of silica nanoparticle. J. Joo

11:20 COLL 718. Micromotors as targeted payload delivery platforms. E. Karshalev, B. Esteban-Fernández de Ávila, J. Wang


Section E

San Diego Convention Center
Room 30E

Nanomaterials

Morphological Control of Colloidal Nanostructures

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

8:30 COLL 720. Study on surface interfacial regulation and properties of nanocomposites based on grafting of nano-Al. C. Zeng, F. Gong, J. Zhang

8:50 COLL 721. Electrically tunable liquid photonic crystals with highly saturated structural colors for display unit. Q. Fu, Y. Yin

9:10 COLL 722. Withdrawn.
9:30 COLL 723. Monofacet-selective cavitation within solid-state silica-nanoconfinement towards Janus iron oxide nanocube. N. Kumari, I. Lee

9:50 COLL 724. Block copolymers in 3D confinement: Janus structures with complex topology. A. Steinhaus, X. Qiang, G. Quintieri, A. Gröschel

10:10 COLL 725. Fluorescent dye-encoded assemblies of amphiphilic Janus magnetoplasmonic nanoparticles: Cluster, lamellae, and vesicles. D. Lu, S. Hou, H. Duan


10:50 COLL 727. Complex inorganic nanomaterials by block terpolymer templating. S. Tjaberings, M. Heidelmann, A. Gröschel

11:10 COLL 728. Regioselective self-assembly of gold nanospheres and silver nanodiscs modulated by block copolymers with steric hindrance. X. Lin, Z. Nie


Section F

San Diego Convention Center
Room 30D

Basic Research in Colloids, Surfactants & Interfaces

Interface Science

R. Nagarajan, Organizer
J. Samaniuk, Presiding

8:30 COLL 730. Complex behavior of metal surface corrosion and passivity in cellular automata-based simulations. J. Stepien, J. Staffiej

9:00 COLL 731. Xylopia aethiopica extract as green and eco-friendly corrosion inhibitor and it's quantum chemical analysis. N.E. Ibis

9:20 COLL 732. Dynamics of 2D materials with nanometer-scale thickness at fluid-fluid interfaces. J. Samaniuk, D. Goggin
9:50 COLL 733. On the temperature dependence of interfacial structure in liquid-liquid interface. Z. Liu, A.E. Clark

10:10 COLL 734. Water condensation on ionic liquid infused nanostructured surfaces. Q. Ge, S. Sett, N. Miljkovic, T. Zhang

10:30 COLL 735. Withdrawn.


11:10 COLL 737. Photoinduced changes in polymer-glass adhesion. S. Mostafavi, K.D. Clark, M. Sroda, J. Read De Alaniz, C.J. Bardeen


Section G

San Diego Convention Center
Room 30C

Basic Research in Colloids, Surfactants & Interfaces

Colloidal Interactions

R. Nagarajan, Organizer
T. Wei, Presiding

8:30 COLL 739. Lipid and complex coacervates interactions. F. Pir-Cakmak, A. Grigas, C.D. Keating

8:50 COLL 740. Probing interactions between surfactants and hydrophobically modified starch nanoparticles by fluorescence. Q. Zhang, D. Kim, J. Duhamel

9:20 COLL 741. Small molecule segregation from poly(vinyl alcohol) films. R. Fong


10:00 COLL 743. Characterization of particle charge from aerosol generation process: Impact on infrared signatures and material reactivity. E.M. Durke, M. McEntee, M. He, S. Dhaniyala
10:20 COLL 744. Interfacial behavior of amino acid residues on gold surfaces studied with electrical spectroscopy and atomistic reaxFF simulations. M. Sajib, W. Jean-Baptiste, K. Chin, T. Wei

10:50 COLL 745. Tuning the interaction energies between lipid head groups and planar substrates. C. Liu, S. Sun, D.R. Melendez, P.S. Cremer

11:10 COLL 746. Revisiting the colloidal fundamentals and exploring nanofilm formation of water-dispersible polyesters. S. Islam, O.D. Velev

Section H

San Diego Convention Center
Room 33C

Theoretical & Experimental Investigations of Water Interactions with Materials

Cosponsored by ANYL‡
D. Donadio, T. Guo, Organizers
M. Sulpizi, L. Wang, Presiding

8:30 COLL 747. Water interactions with striped phases of amphiphiles on 2D materials. S.A. Claridge


10:10 COLL 750. Understanding material and component level properties on the performance of MOF-based atmospheric water harvesting systems. S.R. Rao, A. LaPotin, H. Hyunho Kim, E.N. Wang

10:50 COLL 751. Interplay between specific-ion effects and confinement in the aqueous electric double layer. C. Zhan, T. Pham, M. Ceron, S. Hawks, B. Wood, M. Stadermann, P. Campbell

Section I

San Diego Convention Center
Room 31C

Biomaterials & Biointerfaces
8:30 COLL 752. Design of synthetic polymer nanoparticles for metalloproteinase inhibition. M. Nakamoto, D. Zhao, K.J. Shea

8:50 COLL 753. New polymer formulations for cryostorage of biologics. A.E. Fayter, M.I. Gibson, M. Hasan

9:10 COLL 754. Electron mediators shuttling between erythrocytes and liposomes encapsulating hemoglobin (artificial red cells) to reduce methemoglobin by using abundant glycolitic electron energies. H. Sakai


10:00 COLL 756. Determination of the adsorption orientation of amyloid beta 1-40 monomer over nano-gold colloidal particles’ surfaces. K. Yokoyama


10:40 COLL 758. Probing the nano-bio interface of hydroxyapatite with solid-state MAS NMR. Y. Li, B. Addison, G.P. Holland


11:20 COLL 760. Targeting S. aureus in osteoblast infection employing antibody linked metallic nanoparticles. T. Abdulrehman, S.M. Qadri, Y. Haik