COLL

DIVISION OF COLLOID AND SURFACE CHEMISTRY

D. Miller, *Program Chair*

SUNDAY MORNING

Ernest N. Morial Convention Center
Room 240

Colloidal Forces: Connecting Molecular to Macroscopic Scales

B. Bharti, *Organizer*

J. Chun, *Organizer, Presiding*

8:00 . Colloid contact mechanics and macroscopic rheology in colloidal gels. **E.M. Furst**, F. Bonacci, X. Chateau, J. Goyon, A. Lemaître

8:20 . Utilizing time-varying magnetic fields for the formation of anisotropic colloidal crystals. **S.L. Biswal**

8:40 . Quantifying magnetic field-induced interaction forces between janus microparticles. **R. Patel**, B. Bharti

9:00 . Space-confined assembly of hierarchical nanoparticle architectures inside droplets under magnetic fields. **A. Basu**, M. Clary, J.B. Tracy, O.D. Velev

9:20 . Advancements in probing non-equilibrium dynamics of soft materials through XPCS. H. He, H. Liang, M. Chu, Z. Jiang, J.J. De Pablo, M.V. Tirrell, S. Narayanan, **W. Chen**

9:40 . Coarse-grained simulations reveal the control of ligand interdigitation in a thermally responsive nanocrystal superlattice. **D. Yang**, N. Yifan, S. Yang, C.B. Murray, J.G. Saven

Ernest N. Morial Convention Center
Room 253

Surface Chemistry

Molecular Level Chemistry and Advanced Functional Surfaces

S. Claridge, A. V. Teplyakov, X. Zhou, *Organizers*

M. Porras-Gomez, L. Tribe, *Organizers, Presiding*

8:00 . To bind or not to bind: Donor-acceptor complexation at the liquid-solid interface through bivalent design. **R. Reynaerts**, A. Mukherjee, A. Minoia, A. Rösch, C. Corbet, R. Lazzaroni, G. Vantomme, E.W. Meijer, K.S. Mali, S. De Feyter

8:20 . Withdrawn

8:40 . Hypersurfaces: New lithographic approaches to layered metallic structures. **K. Matos**, Y. Zholdassov, A.B. Braunschweig

9:00 Intermission.

9:20 . Chromium(VI) reduction at the goethite surface: Effect of vacuum conditions. **N. Jemison**, A. Benavidez, J.M. Cerrato, F. Garzon, S. Cabaniss, P. Lichtner

9:40 . Experimental and computational study on pyrogenic carbonaceous matter facilitated hydrolysis of 2,4-dinitroanisole (DNAN). **N.I. SEENTHIA**, E.J. Bylaska, J.J. Pignatello, P.G. Tratnyek, S.A. Beal, W. Xu

10:00 . Probing EPFR formation mechanism with polarity on transition metal oxides. **S. Ahmed**, R. Oumnov, R.W. Hall, P. Sprunger, R.L. Cook

10:20 . Effect of cation symmetry on the long-range ordering in ionic liquid films. **C.B. Lasar**, A. Horvath, D. Rauber, S. Koutsoukos, F.D. Philippi, T. Welton, S.K. Shaw

Ernest N. Morial Convention Center
Hall B, Room 8

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers, Presiding*

S. Aryal, *Presiding*

8:00 Introductory remarks.

8:05 . Mechanism of cell interactions with dynamic biointerfaces: Applications for cell sorting and harvesting. Y. Kim, A. Laradji, U.M. Jahan, V. Reukov, **S. Minko**

8:35 . Tunable brush-like polymers on silk fibroin biomaterials for controlled drug delivery. S. Patil, C. Foster, C. Rowe, **K. Burke**

8:55 . Bio-informed design of polymer coatings to manipulate microbial behavior. **R. Yang**

9:25 . Functionalization of framboidal boronic acid nanoparticles via aqueous Suzuki-Miyaura coupling reactions for drug delivery applications. **A.J. van der Vlies**, U. Hasegawa

9:35 Intermission.

9:45 . Influence of peptide sequence on assembly of gold binding peptides for nanobiomaterials fabrication. C. Johnson, T. Bader, T. Nair, N. Mora, C. Tamerler, **C.L. Berrie**

10:05 . Evaluation of the catalytic activity of different esterases from the circulatory system against substrates of different lipophilicity. T. Rifat, L. Lam, **M.A. Ilies**

10:25 . Metal sulfide nanoclusters to control melanoma cell proliferation: the role of oxidation-reduction reactions to disulfides in the cell. **M.E. Castro**, O. Rodriguez, M. Cortez, V. Arroyo, A. Wu Wu, k. Ruiz, K. Quirindongo

Ernest N. Morial Convention Center
Hall B, Room 11

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, C. M. Sims, D. L. Watkins, *Organizers*

R. Nagarajan, *Organizer, Presiding*

8:00 . 1D lepidocrocite Titania-based nanomaterials, their diverse morphologies and exceptional properties. **M.W. Barsoum**

8:30 . Developing structure-process-property relationships for 3D printing of additive-free $Ti_3C_2T_x$ MXenes into functional devices. **F. Mekunye**, M. Woods, M. Beidaghi, V.A. Davis

8:50 . Impact of chemical intercalant on vanadium carbide (V_2C) MXene stability. **R.A. Beers**, J. Ray

9:10 . Self assembly of inorganic gels and networks from unique 1-dimensional lepidocrocite phase titanium oxide. **G. Schwenk**, A.D. Walter, M. Mieles, H. Ji, J.R. Uzarski, M.W. Barsoum

9:30 . Withdrawn

9:50 . Fabricating metallic nanoparticles on carbon nanofibers through microwave heating. **L. Zhai**, A. Burnstine-Townley, Q. Le

10:20 . Tuning the electronic structure of phosphorene quantum dots via edge passivation. U. De Alwis, **K.L. Shuford**

10:50 . Withdrawn

11:20 . One-dimensional titanium oxide lepidocrocite nanofilaments: From fabrication to application. **A.D. Walter**, J.R. Uzarski, G.R. Schwenk, J. Cope, M. Ibrahim, K. Sudhakar, M. Hassig, L. Ferrer, A. Mininni, A.J. Lindsay, B. Markunas, J. Snyder, M.W. Barsoum

Ernest N. Morial Convention Center
Room 239

PUNC: Nanomaterials Research at Primarily Undergraduate Institutions

J. G. Clar, S. Hughes, A. M. Munro, A. K. Sharma, *Organizers*

D. Ghosh, P. Lyu, *Presiding*

8:00 Introductory Remarks.

8:05 . ZnSe nanorod formation. **A.M. Munro**

8:25 . Precursor libraries to control zinc sulfide nanocrystals. **M.P. Hendricks**, V. Li, K.G. Woodburn, K. Martin, E.R. Smith, S. Sandeno

8:45 . Bottom-up assembly of MOF films tailored by altering deposition parameters, fabrication methods, and surface chemistry. **M.E. Anderson**

9:05 Intermission.

9:25 . Size control of $CuInS_2$ nanocrystals. **S. Hughes**

9:45 . Deformation mechanisms of gold and silver nanocrystals under high pressure. **L. Hanson**, I. Uyan

10:05 . Emerging affordable metallic nanoparticles for sustainable photocatalysis. **P. Lyu**

10:25 Intermission.

10:45 . Intermolecular interactions between nanoparticles and hydrogels at sliding interfaces: Towards mechanochemical synthesis of hydrogel nanocomposites. **M.B. Elinski**, C. Bovia, G. Gleeson, B. Couturier, L. Buckley, M. Platz

11:05 . Photocatalytic degradation of PFOA using boron nitride nanomaterials. **J.G. Clar**, A. Sheffield

11:25 . Bioconjugation density analysis on surface-structurally diverse microgel particles. **M. Gaines**, J. Kamuche, A. Brooks, J. Burks, T. Ford

Ernest N. Morial Convention Center
Room 252

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

E. Tanner, *Presiding*

8:00 . N-heterocyclic carbenes as novel ligands on planar metal surfaces–self assembled monolayers, on surface ligand dynamics and applications in atomic layer deposition. **C.M. Crudden**

8:30 . Carbon-metal covalent bonding for enhanced gold nanoparticle functionalization. **K. Park**, N.L. Dominique, J.P. Camden, R.A. Vaia

9:00 . Golden Age of mass spectrometry: N-heterocyclic carbene mass tags for laser desorption/ionization mass spectrometry. **N.L. Dominique**, I. Jensen, G. Kaur, C. Kotseos, W.C. Boggess, D.M. Jenkins, J.P. Camden

9:20 Intermission.

9:30 . Synthesis, characterization and applications of carbene-stabilized gold nanoparticles. **M.R. Reithofer**, J. Chin, C.J. Serpell, L. Ge, C. Eisen

10:00 . Non-covalent electrode modifications mimic the covalent. **A. Wuttig**

10:30 . Exploring the diversity of NHC-metal binding modes on oxide surfaces. **S. Dery**, W. Cao, C. Yao, A. Yakimov, C. Coperet

10:50 Intermission.

11:00 . Modeling SERS of N-heterocyclic carbenes on a gold surface. **L. Jensen**

11:30 . Electrodeposition of NHCs. **E. Gross**

Virtual Only
Virtual Session

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

S. Muralidharan, *Organizer, Presiding*

10:00 . DOTAP: Structure, hydration and the counterion effect. **E. Mihailescu**, D.L. Worcester, C. Carroll, R. Chamberlin, S.H. White

10:30 . Modeling lipid nanodiscs to encapsulate multiple materials in circumferential divided rim sections. **C. Cheu**, M. Nieh

11:00 . Exploring the influence of varied low-melting phospholipid chain length on the coupling of phase behavior in asymmetric systems. **K.B. Kennison**, H. Scott, T.A. Enoki, N. Waxham, F. Heberle

11:30 . Bridging simuations with NMR: Caveats in sampling lipid dynamics. **M. Doktorova**, G. Khelashvili, R. Ashkar, M.F. Brown

12:00 . Investigating the influence of membrane dipole potential on liquid-ordered/liquid-disordered phase separation in model membranes. K.D. Sharma, N. Waxham, **F. Heberle**

12:30 . Computational investigation of compositional asymmetry and its effects on mixed-chain lipid bilayers. **E.H. Chaisson**, M. Doktorova, F. Heberle

1:00 . Utilizing Cryogenic Electron Microscopy to Identify tieline endpoints and domain size in the coexisting Ld and Lo Phases. **D. Mehhta**, K. Sharma, M. Doktorova, N. Waxham, F. Heberle

SUNDAY AFTERNOON

Ernest N. Morial Convention Center
Room 240

Colloidal Forces: Connecting Molecular to Macroscopic Scales

J. Chun, *Organizer*

B. Bharti, *Organizer*, *Presiding*

2:00 . Sense and sensibility of nanoparticle self-assembly probed by liquid-phase TEM. **Q. Chen**

2:20 . Effect of nanoscale confinement on surfactant aggregation and surface. **W.A. Ducker**, Z. Zhang

2:40 . Surface charge redistribution directs the aggregation of anisotropic Janus-like particles. **D.A. Olaya Muñoz**, J. Molina-Mosquera, M. Olvera De La Cruz, J.P. Hernandez-Ortiz

3:00 . Solvent quality determines the size, shape, and interfacial rheology of soluble asphaltene nanoaggregates. N.M. Pagán Pagán, **A. Marciel**

3:20 . Withdrawn

3:40 . Pressure-induced self-assembly of gold nanoparticle in biphasic solvent mixtures. **J. Böttner**, L. Hanson

Ernest N. Morial Convention Center
Room 242

2024 ACS National Award in Colloid Chemistry - Symposium in Honor of Robert D. Tilton

S. Garoff, J. K. Riley, *Organizers*

K. J. Stebe, *Organizer, Presiding*

2:00 Introductory Remarks.

2:10 . Particles, surfaces, and interfaces: Influence of Robert Tilton's teaching and mentoring. **N.B. Saleh**

2:35 . ATRP in dispersed media with ppb amounts of residual copper. **K. Matyjaszewski**

3:00 . Air-liquid interface induced epithelial delamination. **G.G. Fuller**, C. Liu

3:25 . Dumbbells in colloid chemistry: PEGylated protein morphology and application. **T.M. Przybycien**

3:50 Intermission.

4:20 . Adsorption and interfacial rheology of monoclonal antibodies. **E.M. Furst**

4:45 . Microbots formed from Colloidal Particles. **D. Marr**

5:10 . Effect of the lyophobic phase on particle jamming in Pickering systems at fluid/fluid interfaces. O.M. Haider, **L. Walker**

Ernest N. Morial Convention Center
Hall B, Room 2

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers, Presiding*

S. Aryal, *Presiding*

2:00 Introductory remarks.

2:05 . Polyelectrolyte microgels as self-defensive biomaterials. **M. Libera**

2:35 . Sono-enzymatic functionalization on urinary catheters with antifouling and antimicrobial nano-enabled hydrogel coating. **A.J. Puertas**, K. Ivanova, G. Ciardelli, T. Tzanov

2:55 . Nitric oxide-releasing glycosaminoglycans for corneal wound healing. **M.E. Purvis**, M.H. Schoenfisch

3:15 . Conformational studies of globular Proteomimetic brush polymers of structured peptides. **J. Oktawiec**, O. Ebrahim, C.A. Sharpe, N.D. Rosenmann, Y. Chen, C. Barbut, S. Weigand, M.P. Thompson, L. Yang, J. Byrnes, B. Qiao, N.C. Gianneschi

3:35 Intermission.

3:45 . GlycoMIP: A new resource for the biomaterials and biointerfaces research communities. **M. Roman**, R. Porell

4:05 . Controlling human touch through surface chemistry for assistive tactile technologies. **C. Dhong**

4:25 . Exploring novel strategies to fight antimicrobial resistance: Advancements in electroactive materials. **M.M. Fernandes**, J. Moreira, E. Carvalho, S. Lanceros-Mendez

4:45 . Intracellular formation of reactive sulfur species by enzyme mimetic micelles and their proangiogenic activity. **U. Hasegawa**, S. Yamane, E. Abbasi GharehTapeh

Ernest N. Morial Convention Center
Room 239

PUNC: Nanomaterials Research at Primarily Undergraduate Institutions

J. G. Clar, S. Hughes, A. M. Munro, A. K. Sharma, *Organizers*

C. A. Daly, A. C. Mensch, *Presiding*

2:00 Introductory Remarks.

2:05 . Comparing experimental and computational approaches for studying the binding of N-heterocyclic carbenes. **A. Santos**, S. Simpson

2:25 . Room-temperature sonochemical synthesis of gold nanoparticles functionalized with single-stranded DNA. **K. Wagner**, K. Conlan, C. Duong

2:45 . Role of gold nanoparticle diameter and ligand properties in thefFormation of peptoid nano-sandwiches. **E.J. Robertson**, R. Dueñas, C. James, S. Qureshi, C. Tran Minh

3:05 Intermission.

3:25 . Design of cationic cellulose nanocrystals as potential vaccine nanoadjuvants. **R. Sunasee**

3:45 . Characterization of SARS CoV-2 spike protein coated gold colloids and interaction with ACE2. **K. Yokoyama**

4:05 . Multifaceted quantification of drug-polymer complexes on gold nanoparticles. **L.B. Thompson**, R.J. Gawel

4:25 Intermission.

4:45 . Progress towards the development of a lithium ion selective nanosensor. **E. Tollefson**

5:05 . Electrokinetic motion of neurotransmitters through a single-walled carbon nanotube. **M.D. Ellison**

5:25 . Nucleic acid nanoparticles for low-cost environmental sensing in marine systems. **M. Machado**

Ernest N. Morial Convention Center
Room 253

Surface Chemistry

Limited-D Materials and Structural Dynamics

S. Claridge, A. V. Teplyakov, X. Zhou, *Organizers*

M. Porras-Gomez, L. Tribe, *Organizers, Presiding*

2:00 . Deciphering nucleation, crystallisation, and kinetics of pyrene-based 2D covalent organic frameworks. **N. Herrmann**, C. Martin, S. Eyley, G. Zhan, Z. Cai, N. Bilbao, V. Rubio-Gimenez, M. Van der Auweraer, W. Thielemans, L. Chen, K.S. Mali, S. De Feyter

2:20 . Stabilization and structural engineering of porous liquids achieved by a surface deposition strategy. **L. Qiu**, Z. Yang, S. Dai

2:40 . Efficient and recyclable rare-earth element (REE) extraction by post-synthetically modified covalent organic frameworks. **P. Chatterjee**, A. Volkov, J. Mi, A.J. Rossini, L.M. Stanley, W. Huang

3:00 . Charge transfer and friction tensor of adsorbate on the polyacetylene chain. **L.F. Martinez-Gomez**, R. Ribeiro

3:20 Intermission.

3:40 . Exploring the effects of inhomogeneous broadening in coherent vibrational spectroscopy. **M. Rayaluru**, A.K. Pennathur, A.V. Benderskii

4:00 . Understanding the growth of pentaerythritol tetranitrate crystals through multiscale-multiphysics simulations. **H. Singh**, J. Jeffries, A. Redondo, C.F. Negre, E.M. Saez, R. Perriot

4:20 . Active capturing and sorting of microplastics using liquid interfaces. **X. Wang**, S. Roh, N.L. Abbott

4:40 . Ultralong inhibition of heterogeneous ice nucleation by robust anti-freezing coating with self-lubricating ionic salts layer. **J. Ji**, G. Liu, Y. Wei, L. Feng

Ernest N. Morial Convention Center
Hall B, Room 11

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, C. M. Sims, D. L. Watkins, *Organizers*

R. Nagarajan, *Organizer, Presiding*

2:00 . Detection of nanoparticle-initiated melting/solidification my photothermal microscopy. **B. Dragnea**

2:30 . Glutathione-mediated destabilization of small and ultrasmall PEGylated gold nanoparticles. M. Sanchez, **M.A. Ilies**

3:00 . Gold nanostars and titanium dioxide nanofibers: synthesis and dental application. **N. Le**, S. Kwon, M.M. Allard, C.C. Perry

3:20 . High-throughput all-optical determination of nanorod size and orientation. **M. Knobeloch**, **Z.J. O'Dell**, S.E. Skrabalak, K.A. Willets

3:40 . Withdrawn

4:00 . Controlling optical properties of aerosolized plasmonic nanoshells through surface modification. R.A. Dziatko, S.M. Chintapalli, Y. Song, E. Daskopoulou, D. Kachman, Z.B. Zander, D.L. Kuhn, S.M. Thon, **A.E. Bragg**

4:20 . Investigating Fermi level carriers in highly faceted plasmonic Cd_2SnO_4 inverse spinel nanocrystals. **R.E. Ortega**, J. Kuszynski, R. Smith, A. Bayles, R.W. Schurko, N.J. Halas, G.F. Strouse

4:40 . Novel theranostic nanocarriers for combined drug delivery and diagnostic monitoring by Magnetic Resonance Imaging (MRI). **N. Thomson**, D. Gray, H. Poptani, S. Rannard, M. Giardiello

5:00 . B-cyclodextrin-modified gold nanoparticles (β-CD- AuNPs) as enzyme-mimic for colorimetric detection of dopamine. S. Anderson, **J. Paudyal**

5:20 . Tuning the magnetic response of organic/inorganic nanocomposites composed of Spion embedded nanogels. **D. Gray**, E. Ureña Horno, R. Batty, J. Leaver, L. O'Brien, M. Giardiello

5:40 . Functionalization of large-area fully alloyed Ag/Au nanoparticle arrays. **L. Gundlach**, O.E. Babawale

Virtual Only
Virtual Session

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

F. Heberle, *Presiding*

3:00 . Unleashing machine learning to characterize the structure of liquid-ordered and liquid-disorder phases in Cryo-EM images of lipid membranes. **K.D. Sharma**, M. Doktorova, D. Mehhta, N. Waxham, F. Heberle

3:30 . Molecular insights into biological memory in phospholipid bilayers. **D. Bolmatov**, C.P. Collier, J. Katsaras

4:00 . Introducing pyridinium Gemini surfactants in synthetic lipid membranes for practical applications. **A. Eftaiha**, A.K. Qaroush, A. Abo-shunnar, S.B. Hammad, D. Foudeh, F. Al-Qaisi, K. Assaf, N. Morris, T. Kumarage, S. BUTI, R. Ashkar

4:30 . Rethinking cholesterol effects with NMR spectroscopy. **M.F. Brown**, F.T. Doole, M. Doktorova, G. Khelashvili, T. Kumarage, R. Ashkar

5:00 . Fluid lipid nanodiscs in delivery applications in-vitro and in-vivo. **C.R. Safinya**, V.M. Steffes, K.K. Ewert, Y. Li

5:30 . Vitamin E flip-flop in lipid membranes. J. Taylor, **J.C. Conboy**

6:00 . Model biological membrane composed of patterned lipid bilayer and nanometer-sized confinement. **K. Morigaki**

6:30 . Withdrawn

SUNDAY EVENING

Ernest N. Morial Convention Center
Hall C

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, Z. Niroobakhsh, *Organizers*

7:00 . Pickering liquid crystal emulsions with enhanced sensitivity to aqueous analytes. **M.K. Oñate-Socarras**, O.H. Piñeres-Quiñones, D.M. Lynn, C. Acevedo

7:00 . Revealing foam stability for cationic and zwitterionic triethylsilyl-containing surfactants. **J.R. Brown**, M. Madsen, A. Ates, R. Islam, S. Ham, B. Agbo, K. Karimi Nikoo, B.Y. Lattimer, R. Xie, T. Long

7:00 . ATR FTIR spectroscopy of protein and surfactant adsorption to the oil-water interface. **D.A. Beattie**, M. Krasowska, G. Gillies, J.L. Webber

7:00 . Enhanced sampling simulations to probe formation of binary ionic colloidal crystals. **N. Smina**, G.M. Hocky, S. Sacanna, S. Paul, K. Liu

7:00 . Study of self-assembly of a gemini surfactant induced by anionic QDs in aqueous solution. **a. DHANAGAR**, A. Shaheen

7:00 . Withdrawn

7:00 . Determination of the effects of hydrogel chemical composition on single-walled carbon nanotube purification. L. Hughes, **K.C. Tvrdy**

7:00 . Transport of small molecules across surfactant-laden interfaces. S. Ham, **X. Wang**, R. Qiao

7:00 . Influence of solvent and ligand phase segregation on nanoparticle stability under varying mixture composition and pressure. **S. Salas Sanabria**, L. Hanson

7:00 . Interfacial behavior of micelle-polymer complex coacervates. **S. Ekanayaka Mudiyanselage**, A. Xu

7:00 . Phase behavior and reactivity of α-keto acids at air-water interfaces. **B. Rugeley**, C. Koltun, R. Rapf

7:00 . Kinetic study of megasonic-activated supramolecular chemistry adsorption onto Al_2O_3-coated oxidized silicon carbide. **P. Smith**, J. Powell, J.J. Keleher

7:00 . Hydrogen storage in subsurface: influence of rock and geofluid chemistry. W. Snodgrass, R. Carbajal, **P. Bazazi**

7:00 . Comparison of spectroscopic, thermal, and gelation properties of Anthraquinonylalkanamides. **K. Turnage**, R. Pham, T. Hayashi, J. Norton, E. Lee, A. Mallia

7:00 . Withdrawn

Ernest N. Morial Convention Center
Hall C

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers*

7:00 . Advancements in differential dynamic microscopy: A novel approach for nanoscale particle characterization. **A. Missaoui**, J. Qiao, D. Obloj, P. Tin, S. Sinha Ray

7:00 . ^{89}Zr-Radiolabeled Trastuzumab-targeting triblock copolymer vesicles for positron emission tomography (PET) imaging. **V.A. Kozlovskaya**, M. Dolmat, E.P. Kharlampieva

7:00 . Gold nanoparticles control towards metastatic effects of triple-negative breast cancer. **M. Marcellus**, C.J. Murphy

7:00 . Soft matter-based platform for high-yield and high-throughput engineered organoid culture. **H. Jeon**, Y. Wang

7:00 . Zwitterionic polymer-drug conjugate for multidrug delivery. H. Sun, L. Yan, **z. zhang**, J.F. Lovell, Y. Wu, C. Cheng

7:00 . DNA origami six-helix bundle nanostructures as biomimetic scaffolds for calcium phosphate mineralization. **H. Young**, A.E. Gerdon

7:00 . Cationic bolaamphiphiles containing different linker: Comparison study on self-assembly, in vitro cytotoxicity, antibacterial activity, and gene transfection. **P. Mondal**, S. Roy, J. Dey, S.B. Dasgupta

7:00 . Targeting biofilms using functionalized gold nanoparticles under dynamic flow. **d.L. amarasekara**, R. Somarathne, T. Shaikh, E.R. McCaffrey, M. Hejny, N.C. Fitzkee

7:00 . Emperical dip-coating process development for a drug-releasing coating applied to implanted medical devices. **B. Laine**

7:00 . Synthesis and characterization of stimuli- responsive self-assembling cyclic peptide nanotubes through light exposure. **O. Atoyebi**, M. Beasley, W.A. Maza, M.K. Kolel-Veetil, A.D. Dunkelberger, K. Fears

7:00 . Functionalization of glass surfaces for anti-biofilm properties for dental restorative materials. **L.A. Miller**, F. Sandes De Lucena, C.S. Pfeifer

7:00 . Role of microbial biofilms in the settlement of macrofoulers on antifouling marine coatings. **S. Tuck**, M. Kardish, B. Orihuela, G. Vora, D. Rittschof, K.J. Franz, K. Fears

7:00 . Antimicrobial efficiency of Ag- and Cu- nanoparticle-hydrogel nanocomposite systems. **K.M. Sheets**, N.L. Courtenay, J. Dominguez, U.I. Flores, M. Havens, J.J. Keleher

Ernest N. Morial Convention Center
Hall C

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

7:00 . Rhodopsin activation: Effects of hydration and membrane lipids. K. Hewage, S. Chen, S. Fried, T. Luu, A. Struts, S. Perera, **M. Brown**

7:00 . Exploring the binding of metal cations to negatively charged lipids by diffusion constant measurements. C. Reynolds, **R. Zdenek**, P.S. Cremer

7:00 . Withdrawn

7:00 . Investigation of the thermodynamics and kinetics of transition metal ion - lipid binding interactions. C. Reynolds, A. Marroquin, **O.C. Fiebig**, R. Zdenek, K. Chokhany, A.J. Glaid, P.S. Cremer

7:00 . Investigation of the structure and stability of model membrane nanodiscs. **A. Lott**, P. Ho, O.C. Fiebig, P.S. Cremer

7:00 . Wrinkled Myelin: surface wrinkling of myelin figures in aqueous solutions of polymers. **A. Vyas**, P.D. Sambre, L. Wang, A.N. Parikh

7:00 . Membraneless organization in a molecularly crowded environment: Interplay between associative and segregative LLPS systems. **C. Love**, C. Chen, C.F. Carnahan, S. Deshpande, A.N. Parikh

7:00 . Probing Neuropilin-1 oligomerization in the plasma membrane. **K. Bell**, K.A. Hristova

7:00 . Langmuir Monolayers as model cell membrane systems for the investigation of the healing effects of bee propolis and its main bioactibve component on burned and wounded skin cells. **I. Hawkins**, A. Goach

7:00 . ApoA1 interaction with synthestic cell membranes. **C.F. Carnahan**, W. He, M. shaaban mohamed abdelrasoul, A. Noy, M.A. Coleman, A.N. Parikh

7:00 . Utilizing model membrane systems to Investigate the specific molecular interactions that result in elderberry acting as an antibacterial. **D. Lavan**, A. Goach

7:00 . Structural characterization and modeling of photosynthetic membranes via small-angle neutron scattering. **C. Liu**, G. Nagy

Ernest N. Morial Convention Center
Hall C

Colloidal Nanoparticles Synthesis and Assembly

H. Fan, D. Huber, T. Li, Y. Sun, D. Ye, *Organizers*

7:00 . Modulation of two-dimensional exciton emissions at room temperature by colloidal gold nanodisk-based plasmonic nanocavities. **X. XIA**, J. Wang

7:00 . Direct synthesis of water-dispersible MFe_2O_4 ($M=Fe^{2+}$, Ni^{2+}, Co^{2+}, Mn^{2+}) nanoparticles with continue growth. **J. Qu**, P. Cheah, D. Adams, Y. Zhao

7:00 . Halide-assisted differential growth of chiral nanoparticles. **K. ZHANG**, J. Wang

7:00 . Light-mediated synthesis and characterization of tunable chiral gold nanoparticles. **M. Hoff**, C. Froehlich, C.L. Haynes

7:00 . Time-dependent digestive ripening of colloidal gold nanoparticles with varying dodecanethiol ratios. **V.V. Le**, B.J. Lear

7:00 . Design and synthesis of antibacterial manganese sulfide nanoparticles for Pierce's disease. **Y. Faroud**, J. Pereira, S. Santra

7:00 . Mapping surface ligand binding in anisotropic nanoparticles using metal "tag" particles. **M. Carmona Pichardo**, Z. Yang, S. Hendrichs, M.R. Jones

7:00 . In-situ observation of a rotational symmetry-breaking mechanism generating planar chirality in 2D superlattices of anisotropic achiral nanoparticles. **S. Fisher**, Z. Cheng, M.R. Jones

7:00 . Transformable polymer masks as a platform for regioselective galvanic replacement on metal nanocrystals. **M. Knobeloch**, C. Ma, S.E. Skrabalak

7:00 . Exfoliation and manipulation of self-assembled 2D nanoparticle metasurfaces. **Y. Xing**

7:00 . Synthesis of ultrathin $Nb(S_xSe_{(1-x)})_2$ nanosheets and identification of catalytic active sites for hydrogen evolution reaction. **V. Jha**, S. Sapra

7:00 . Polyoxometalate precursors for colloidal synthesis of ternary metal oxide nanocrystals. **M.R. Buck**, L.J. Barrante, A.J. Biacchi, A.R. Hight Walker

7:00 . Nano- and microparticle synthesis *via Shirasu Porous Glass* membranes. **M. Trömer**, A. Gröschel

7:00 . Development of plasmonic catalysts for light-driven ammonia production. **D. Grinnell**, M. King

7:00 . Nickel-copper bimetallic nanocatalyst synthesis via galvanic exchange. **C.B. Wijethunga**, M. King

7:00 . Withdrawn

7:00 . Colorimetric assay of the effect of gold nanoparticle size on the performance of a DNA aptamer. **N. Perez Lantigua**, J.E. Smith

7:00 . Design of stimuli-responsive core-shell nanoparticles for low defectivity Cu Chemical Mechanical Planarization (CMP). **A. Caridi**, K.R. Reyes, J.J. Keleher

7:00 . Structural characterization of self-assembled three-dimensional nanoporous organic-silicon oxide particles (3D-nano-Or-SOx) for environmental remediation. **A.Y. VARGAS-LIZARAZO**, G. Kohli, J. Martinez-Zambrano, C. Castañeda Martinez, N. Mazumder, M. Ali, P. Kohli

7:00 . High-throughput active learning for temperature-controlled solid-solid DNA crystal transformations. **N. Herringer**, D. McKeen, H. Chiang, A. Ferguson, O. Gang, L. Pozzo

7:00 . Withdrawn

7:00 . Photocured graphene oxide liquid crystals. **K.B. Riad**, P. Wood-Adams

7:00 . Withdrawn

7:00 . Self-assembly of computationally designed peptide coiled coil peptide bundle: effect of organic solvent on solution assembled structure. **Y. Tang**, K.C. Moscowitz, N.J. Sinha, R. Guo, J.G. Saven, C.J. Kloxin, D.J. Pochan

7:00 . Modulating chiral plasmonic activates via stimulus triggered assembly transformation. Y. He, Z. Guo, **C. Ye**

7:00 . Functional block copolymer cubosomes with broad applicability. **M. Schumacher**, A. Gröschel

7:00 . Engineered chiral interfaces for efficient biosensing. **j. cai**, D. Pang

7:00 . Withdrawn

7:00 . Withdrawn

7:00 . Metal nanoparticles encapsulated with skewered porphyrins assembled by siloxane coupling. **J.C. Garno**, O.H. Olubowale

7:00 . Controlled and facile aminophosphine-based synthesis of colloidal InP-based quantum dots in a tubular flow reactor. **Z. Wang**, D. Segets

7:00 . Flame-made quantum dots. **K.B. Riad**, M.R. Kholghy, P. Wood-Adams

Ernest N. Morial Convention Center
Hall C

Colloidal Semiconductor Nanocrystals (Including Perovskite Nanocrystals)

S. Jeong, G. Jia, J. Macdonald, X. Yang, *Organizers*

7:00 . Power dependence in the excited-state lifetime decay of homogenous $Cu_xZn_yIn_zS_2$ and heterogenous/gradient-alloyed $Cu_x(Zn_y)In_zS_2$ quantum dots. **J.C. Morales Orocu**, C.D. Heyes

7:00 . Multiexcitonic emission from $Cs_2ZrCl_6:Mo^{4+}$ vacancy ordered lead-free double perovskites. **S. KUMAR**, S. Sapra

7:00 . Enhancing the colloidal stability and surface properties of organic-inorganic perovskite quantum dots using carboxybetaine-based polyzwitterionic ligands. **S. Donmez**, U. Vorajee, H.M. Mattoussi

7:00 . Electronic passivation and structural stabilization of perovskite nanoplatelets using Polysalt ligand-complexes. **U. Vorajee**, S. Donmez, S. Wang, H.M. Mattoussi

7:00 . Directing triplet and singlet energy transfer in halide perovskite nanocrystal-rhodamine dye hybrids. **A. Chemmangat**, P.V. Kamat

7:00 . Synthesizing $Ba_xSr_{1-x}ZrS_3$ and tailoring optoelectronic properties of distorted ABX_3 chalcogenide perovskites. **N. Arrykova**, D. Zilevu, S.E. Creutz

7:00 . Spectroscopic analysis of $CuCrS_2$ nanoparticles: effects of sulfur-to-copper ratio on localized surface plasmon resonance. **J. Rider**, J. Kuszynski, G.F. Strouse

Ernest N. Morial Convention Center
Hall C

Colloids and Interfaces for Bioelectrochemical Systems and Sensors

Cosponsored by ANYL
E. S. Andreescu, S. Martic, *Organizers*

7:00 . Electric field-regulated protein adsorption on antifouling polymer brushes. **E. Postma**, S. de Beer

7:00 . Capability study of laser-reduced graphene oxide electrochemical sensors. **B.P. Cronin**, A. Rowley, S. Fan, Y. Stehle

Ernest N. Morial Convention Center
Hall C

Development of Sustainable Materials Using Colloid and Surface Science

D. Dermody, R. Moglia, C. W. Nelson, Y. Rao, W. Zhou, *Organizers*

7:00 . Sustainable opal films by combining cellulose nanowhiskers with core-shell particles and the melt-shear organization technique. **R. Leiner**, S. Witayakran, L. Siegwardt, M. Gallei

7:00 . Evaluation of sustainable fungicidal nanoformulation to counteract Pestalotiopsis spp. effecting mangrove ecosystems. **M.M. Deinys**, J. Pereira, S. Santra

7:00 . Development of sustainable paper coatings using biodegradable water-borne soybean oil emulsions. **A. Khan**, M. Rabnawaz

7:00 . Improving the interfacial adhesion between asphalt and aggregate using dopamine derivatives. **M. Hasan**, J. Kim

7:00 . Alginate-based nanohydrogels for foliar delivery of micronutrients to plants. **C. Jalomo**, E. Hernandez, A. Schroeder, C.J. Murphy

7:00 . Novel bimetallic Fe/Cu nanowires based electrical potential driven surfaces for broad-band microbial decontamination. **M. Ali**, A.Y. VARGAS-LIZARAZO, N.A. Mazumder, S. Hamilton-Brehm, M.E. Olson, P. Kohli

7:00 . Electrically polarized and chemically modified graphite-based devices demonstrate efficient suppression of Gram positive and negative bacteria. **N. Mazumder**, A.Y. VARGAS-LIZARAZO, M. Ali, S. Hamilton-Brehm, P. Kohli

7:00 . Determining core size and ligand dependence of ligand binding motif populations on InP Quantum Dots through monte carlo based fitting of FTIR spectra. **C. BISTED**, S.F. Sandeno, F. Dou, B.M. Cossairt, M.H. Khalil

7:00 . Understanding bonding of N-heterocyclic carbenes on Pd/Cu(111) single atom alloys via non-local density functional theory to store hydrogen via the molecular corking effect. **S. Simpson**

7:00 . Soybean oil based long-chain fatty acid amides as cationic surfactants. **J.P. Youngblood**, C. Martinez, Y. Zheng

7:00 . Variable structures of solvated porous organic cages as a mechanism for porous liquid design. J. Rimsza, **M. Hurlock**, T.M. Nenoff

7:00 . Perfluorinated porous liquid for high performance gas uptake and separation. **E. LI**, Z. Yang, S. Dai

Ernest N. Morial Convention Center
Hall C

Fundamental Research in Colloids, Surfaces and Nanomaterials

S. Hunyadi Murph, J. Katsaras, U. Natarajan, *Organizers*

7:00 . Modifying reaction conditions to control nanoparticle morphology in gold decorated graphene oxide. E. Stroud, **S. Burkert**

7:00 . Raman and CytoViva hyperspectral imaging characterization of core gold nanoparticles for anticancer drug delivery. **L. Reyna**, I.E. Pavel, G. Lorenzana Vazquez, E. Melendez

7:00 . Ligand control over the electronic structure of palladium nanoparticles for use in hydrogen storage. **K.M. Aviles**, B.J. Lear

7:00 . Electronic and photocatalytic properties of colloidal one-dimensional titanium oxide lepidocrocite nanofilaments. **A.D. Walter**, G.R. Schwenk, J. Cope, K. Sudhakar, M. Hassig, L. Ferrer, A. Mininni, A.J. Lindsay, M.W. Barsoum

7:00 . Electronic properties of gold nanoparticles and how thiolate ligands interact with the surface. **B. Kaercher**, B. Lear

7:00 . Identification of heterogeneous exosomes using magneto-luminescent nanoarchitectures. **O. Kolawole**, A. Pramanik, S. Kundu, K. Gates, L. Corby, P.C. Ray

7:00 . Solid drug nanoparticle (SDN) technology for underpinning long-acting formulations. **C. Hogarth**, J.J. Hobson, A.C. Savage, C. Unsworth, e. barlow, J. Massam, A.B. Dwyer, A. Owen, S.P. Rannard

7:00 . Development of solid drug nanoparticles of bictegravir and tenofovir alafenamide and incorporation in dissolving microneedle array patches. **J.J. Hobson**, A. Hutton, A. Paredes, K. Peng, A.C. Savage, A. Owen, R.F. Donnelly, S.P. Rannard

7:00 . Reformulating medicines for the treatment of infectious diseases: The LONGEVITY project. **A.C. Savage**, C. Unsworth, A.B. Dwyer, J. Massam, C. Hogarth, J.J. Hobson, P. Curley, R. Rajoli, H. Pertinez, J. Herriott, E. Kijak, E. Gallardo-Toledo, C. Bramwell, U. Arshad, H. Cox, M. Neary, J. Sharp, A. Owen, S. Rannard

7:00 . Electrically switchable biosensors from DNA-dendron conjugates. **Y. Cai**, S. Day, E. Lukhmanov

7:00 . Withdrawn

7:00 . Nanoprecipitation of niclosamide and *in-vivo* demonstration of long-acting delivery. **C. Unsworth**, J.J. Hobson, A.C. Savage, A.B. Dwyer, J. Massam, U. Arshad, H. Pertinez, H. Box, L. Tatham, R. Rajoli, M. Neary, J. Sharp, A. Valentijin, C. David, P. Curley, N. Liptrott, T.O. McDonald, A. Owen, S.P. Rannard

7:00 . Optimization of the Au_{32} nanocluster synthesis to further concentrate nanoclusters. **F. Akilo**, A. Ali, C.F. Graverson, M.R. Jones

7:00 . PGM-containing alumina reference materials for use in the evaluation of catalytic aerogels. **E.K. Brinkley**, A.M. Anderson, B.A. Bruno, M.K. Carroll

7:00 . Impact of disaccharide osmolytes on the AOT reverse micelle environment. D.E. Collier, **B.L. Gourley**, N.E. Levinger

Ernest N. Morial Convention Center
Hall C

Mechanochemistry in Colloid and Surface Chemistry

A. B. Altman, J. Batteas, A. Martini, I. Speight, *Organizers*

7:00 . Mechanochemical synthesis of Group 11 bulky allyl compounds. **D. Button-Jennings**, T.P. Hanusa

7:00 . Mechanochemical formation of polyacrylamide nanocomposites: Impact of nanoparticle surface chemistry and substrate functionalization. **B. Couturier**, A. Lanham, M.B. Elinski

7:00 . Asymmetric functionalization and fluorescent confocal microscopy of flexible nanoparticles. **T. Robertson**, M.R. Jones

7:00 . Mechanistic model for quantifying the effect of impact force on mechanochemical reactivity. **E.C. Nwoye**, S. Raghuraman, M. Costales, J. Batteas, J.R. Felts

7:00 . Mechanically induced reactivity of single-layer graphene. N. Hawthorne, **E. Broker**, Q. Moore, S. Banerjee, C. Cardinal, J. Ha, U. Braga, Y. Bao, A.M. Rappe, J. Batteas

7:00 . Optimizing ball-milling for sustainable mechanochemical syntheses of tolbutamide via copper-catalyzed coupling. **K.R. Floyd**, J. Batteas, T. Friscic, L. Gonnet

7:00 . Single-crystal substituted anthracenes for nanoscale mechanochemical Diels-Alder reactions. **M. Costales**, N. Bhuvanesh, J. Batteas

7:00 . Development of wave-responsive CeO_2 nanoparticles for use in shallow trench isolation (STI) chemical mechanical planarization (CMP). **E.M. McDonnell**, **L.N. Formanski**, J.J. Keleher

7:00 . Computational analysis of molecular distortions. **R.W. Kwok**, M.A. Shlain, M. Patel, A.B. Braunschweig, M. Marianski

Ernest N. Morial Convention Center
Hall C

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, R. Nagarajan, C. M. Sims, D. L. Watkins, *Organizers*

7:00 . Photoresponse properties of green assisted Fe_3O_4 nanoparticles supported activated carbon. **D.O. Idisi**, B.W. Mwakikunga, U. Aigbe

7:00 . Development of fluorinated graphene oxide (FGO)-polyethyleneimine (PEI) based 3D nanoarchitecture for chemical and biological toxin separation from water. **S. Kundu**, A. Pramanik, O. Kolawole, K. Gates, P.C. Ray

7:00 . Withdrawn

7:00 . Quartz crystal microbalance with dissipation detection (QCM-D) studies of adsorption/desorption processes of guests in covalent organic frameworks (COFs) in aqueous environments. **S. CHENG**, J. Shyue

7:00 . Development of icariin loaded DSPE-PEG2000/DPPC micelles for pulmonary delivery. **C. Jiang**

7:00 . Targeted delivery of liposomal hybrid gold nano-assembly for enhanced photothermal therapy against lung carcinomas. **U.S. Patel**

7:00 . Electron-phonon interaction and NIR photoluminescence of atomically precise gold nanoclusters. **Z. Liu**

7:00 . Effect of ZnO nanoparticles on the growth of bacteria and fungi. **S. Córdova**, M. Guzmán, B.C. Galarreta, Y. Hernández, C.A. Rebaza-Chávez, C.R. Rojas

7:00 . Potential application of laser reduced graphene oxide as force sensitive sensor. **S. Fan**, Y. Stehle, B.P. Cronin

7:00 . On-site detection of neonicotinoid pesticides using functionalized gold nanoparticles and halogen bonding. **S. Reiff**

7:00 . Mucosal targeted surface-modified electrohydrodynamic co-jetted Janus nanoparticle for drug delivery. **A. Chang**, J. Lahann

7:00 . Conductive and magnetic nanocomposites from liquid phase synthesis of graphene-coated iron oxide nanoparticles. **J. Kaur**, C. Masterson, M. Lee, V. Colvin

7:00 . Characterization of graphene oxide's physicochemical properties. **Y. Chun**, Y. Stehle, E.J. Robertson

7:00 . Using self-assembled monolayers to control poly(3-hexlthiophene) polymer morphology: Applications in microcontact printing. **T. Kaz**, S. Flagg, O. Armendarez, G. Todd, E. Silver, B. Augustine, P.M. Lundin

7:00 . Surfaced-modified $BaTiO_3$/PVDF composites for sensing and energy-harvesting applications. **J. Lee**, N. Kim, J. Ryou, T. Lee

7:00 . Gold- and gold/silver-deposited magnesium ferrite-based nanoparticles for catalytic reduction of 4-nitrophenol. **S. Hoijang**, T. Kunakham, J. Nonkumwong, S. Ananta, T. Lee, L. Srisombat

7:00 . Cationized Zein nanoparticles as a stable platform for nucleic acid delivery. **P. Ghosh**, M.A. Quadir

7:00 . Size and homogeneity effects on the volume phase transition in thermoresponsive Au nanorod-hydrogel nanocomposites. **E. Reynoso Bernardo**, L. Hanson

7:00 . Ni/Fe active sites embedded in 1-dimensional lepidocrocite titanium oxide for durable oxygen evolution catalysis. **G. Schwenk**, N. Carpentieri, H. Badr, A.D. Walter, J. Snyder, M.W. Barsoum

7:00 . Metal-organic framework based polymeric nanoparticles for protein delivery system. **M. KHAN**, Z. Armstrong, M. Lenertz, N. Kale, Q. Li, A. MacRae, Z. Yang, M. Quadir

7:00 . Optimizing magnetic nanomaterials for enhanced biomedical performance through structural control. **M. Nguyen**, S.B. Attanayake, M. Fuller, L. Deng, C. Chu, M. Phan, T. Lee

7:00 . Functionalization of carbon nanotubes with diverse ligands: Expanding possibilities for surface modifications and applications via high-energy ball milling (HEBM). **A. Garcia**, J.P. Vanegas, H. Ribeiro

7:00 . Exploring photoluminescence properties, shape, and size of high energy ball-milled gold, copper, silver, and silicon nanoparticles. **J. Garcia**, J.P. Vanegas, A. Garcia

Ernest N. Morial Convention Center
Hall C

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

7:00 . Non-covalent interactions mimic the covalent: An electrode-orthogonal self-assembled layer. **M. Huynh**, D. Badgurjar, B. Masters, A. Wuttig

7:00 . Fundamental characteristics of N-heterocyclic carbenes on varying deposition protocol. **A. Chandran**, N.L. Dominique, L.C. Ekowo, G. Kaur, N. Arroyo Curras, D.M. Jenkins, J.P. Camden

7:00 . Probing the Au-C bond in N-heterocyclic carbene-functionalized gold nanoparticles using surface-enhanced Raman spectroscopy. **S. Chowdhury**, I. Jensen, G. Hu, L. Jensen, D.M. Jenkins, J.P. Camden

7:00 . Nanotextured stainless steel for antifungal applications. **S. Lee**, A. Tripathi, J. Champion

7:00 . Monitoring post-synthetic modifications of N-heterocyclic carbenes monolayers using SERS and LDI-MS. **L.C. Ekowo**, N.L. Dominique, J.P. Camden, M. Champion

7:00 . Generation of tunable NHC tags for multiplexable SERS applications in materials authentication and data storage applications. **C. Rizkalli**, R. Thimes, N.L. Dominique, G. Kaur, I. Jensen, D.M. Jenkins, J.P. Camden

7:00 . Withdrawn

Ernest N. Morial Convention Center
Hall C

PUNC: Nanomaterials Research at Primarily Undergraduate Institutions

J. G. Clar, S. Hughes, A. M. Munro, A. K. Sharma, *Organizers*

7:00 . Impact of silver nanoparticles on trout Gill epithelial cells. **E. Kessler**, A.C. Mensch

7:00 . Design of antimicrobial silver nanoparticle-thiolated polyethylene glycol film as a potential water purification filter. **E. Park**, T. Versosky, G. Eubanks

7:00 . Tuning metal-organic frameworks to tailor structure and optimize gas absorption. **D.L. Maglich**, B. Dhanapala, M.E. Anderson

7:00 . Synthesis and characterization of chalcogenides for photovoltaic and thermoelectric applications. **B. Matthias**, J. Daniel, M.E. Anderson

7:00 . Impact of deposition temperature on thin film growth of surface-anchored metal-organic frameworks. **S.J. Delozier**, D.L. Maglich, K.S. Euston, M.E. Anderson

7:00 . Utilizing boron nitride nanomaterials for PFAS remediation. **A. Sheffield**, J.G. Clar

7:00 . Adsorption of ciprofloxacin, amoxicillin, and tylosin to model sediment surface. **A. DiFelice**, A.C. Mensch

7:00 . Glutathione monolayer protected nanoparticles influence calcium phosphate mineralization of collagen. **K. Ta**, A.E. Gerdon

7:00 . Impact of tylosin tartrate on the size, charge, and deposition of polystyrene nanoplastics. **A. Silver**, A. DiFelice, A.C. Mensch

7:00 . Fluorescence enhancement of $CuInS_2$ nanoplatelets. **K. Willard**, S. Hughes

7:00 . Development of polymer nanoparticle sensors for detection of heavy metals in water. **K. DeWittie**, L. Toote

7:00 . Synthesis and characterization of gold nanoparticle-DNA aptamer conjugates for calcium phosphate mineralization. **D. Alphonse**, A.E. Gerdon

7:00 . Synthesis of promising thermoelectric and photovoltaic candidates: Ternary and quartenary copper chalcogenide nanoparticles. **G.M. George**, B. Matthias, J. Daniel, M.E. Anderson

7:00 . Synthesis and characterization of thiol-based bismuth nanoparticles. **N. Carver**, J.L. Crane, E. Tollefson

7:00 . Asphaltene-Inhibitor non-covalent interactions database. **M. Franke**, S. Arsala, S.L. Franke, S. Gingras, A.K. Sharma

7:00 . Computational investigation of the impact of orientations on ionic contact pairs. **S.L. Franke**, A.K. Sharma

7:00 . Interaction of Iron nanoclusters with sulfur oxides. **J. Saxton**, **A.K. Sharma**

7:00 . Carbon-nanotube-coated polydimethylsiloxane for biofilm inhibition. **N. Fiore**, **C. Hudson**, **E. Tucker**, **C. Worley**, M.D. Ellison

7:00 . Plasmon driven chemistry of viologen derivatives. **T. Huffman**, M.D. Sonntag

7:00 . Developing selenium precursors for ZnSe nanocrystal syntheses. **R. Smith**, A.M. Munro

7:00 . Withdrawn

7:00 . Investigating the fabrication of MOF films, powders, and composites. **K.S. Euston**, M.E. Anderson

7:00 . Decoupling sphere diameter and origami binding site size in microsphere/nanosphere lithography. **J. Hastings**, C. Smith, D. Neff, **M.L. Norton**

7:00 . Optimization of nanomaterials for fabrication of semitransparent agrivoltaics. **A.G. Vicini**, J. Penick, M.C. So, R. Bashiri

7:00 . Assembly and properties of peptoid nanosheets formed with 10-nm gold nanoparticles functionalized with either polystyrene or octadecanthiol ligands. R. Dueñas, **E.J. Robertson**

7:00 . Solid phase synthesis of amphiphilic peptoid sequences for assembly into gold nanoparticle-embedded peptoid nanosheets. S. Stark, K. Witte, C. Proulx, **E.J. Robertson**

7:00 . Incorporating octanethiol-functionalized gold nanoparticles into the interior of bilayer peptoid nanosheets. C. James, **E.J. Robertson**

7:00 . Functionalized gold nanoparticle embedded peptoid nanosheets: Tuning the packing density of nanosheets by altering ligand length via ligand exchange. S. Qureshi, C. Whitehead, **E.J. Robertson**

7:00 . Regulating interparticle gap distances in peptoid nanosheets by modifying gold nanoparticle surface ligands. C. Tran Minh, **E.J. Robertson**

7:00 . Synthesis and characterization of 1,2,3-traizole stabilized silver nanoparticles for propective chemosensing applications. **M. Castillo Vega**, D. Ghosh

7:00 . Characterization of SARS-CoV-2 spike protein coated gold colloid in a silica-sol-gel matrix. **M. Fazzolari**, K. Yokoyama, P.J. Loss

7:00 . Visualizing cytoskeletal protein reconstruction of vulvar cancer with surface-enhanced Raman spectroscopy and gold nanoparticles. **K. Haering**, J. Lewis, K. Yokoyama

7:00 . Using a machine learning approach to identify physical hole defects in the B_2C. **L. Zhang**, M. Groves

7:00 . Assembling gold nanorods with pH responsive polyelectrolytes: A study on factors that influence nanorod Assembly. **Z. Wang**, **H. Konno**, L.B. Thompson

7:00 . Synthesis, purification, and characterization of mercaptosuccinic acid- and ethylenediaminetetraacetic acid-carbon quantum dots. **R.E. Nemcek**, D.T. Miles

7:00 . Evaluation of NaCl nanoparticles as an antibacterial agent. **E. Nardone**, M. Machado

7:00 . Photo-catalytic degridation of emerging pollutants using a nano-carbon / TiO_2 self-assembled coating. **M.A. Burrows**, F. Webster

7:00 . Ferrihydrite / carbon nanoparticle composite for low-cost multifunctional wastewater pollution remediation. **J. Kreck**, F. Webster

7:00 . Exploring biomimetic patterned surfaces to combat bacterial biofilm growth. **J. Mastropolo**

7:00 . Correlation between alkali metal acetate precipitating salts and the size of para-mercaptobenzoic acid capped gold nanoclusters. **E.H. June**, E.M. Ward-Dones, C.L. Heinecke

7:00 . Effect of capping agent size and chemical structure on silver nanoparticle catalytic activity for 4-nitrophenol reduction. **D. Correll**, A.L. Marsh

7:00 . Relationship of alkali metal chloride precipitating salts and size of para-mercaptobenzoic acid capped gold clusters. **E.M. Ward-Dones**, E.H. June, C.L. Heinecke

7:00 . Effect of Zn^{2+} ions to the reversible aggregation formation of amyloid beta 1-40 coated gold nanoparticles. **L. Carrillo**, **R. Hirschkind**, K. Yokoyama

7:00 . Amyloid beta 1-40 protein corona formation on gold colloids and investigation of nano-size dependence. **B. Martinez Hernandez**, **V. Brzezinski**, K. Yokoyama

7:00 . Detecting heavy metal pollutants in water using ZnS quantum dot derivatives. **W. Zimmer**, C. Whitehead

7:00 . Gold nanoparticle assemblies as electrochemical non-enzymatic Dopamine Sensor. **E. Diakiw**, K. Bandyopadhyay

7:00 . Electrokinetic motion of dopamine through a carbon nanotube. **J. Allen**, **L. Davis**, **A. Russell**, M.D. Ellison

7:00 . Nanopatterning inorganic materials using selective infiltration inside polymers for emerging technologies. **S. Patra**, U. Manna, M. Biswas

Ernest N. Morial Convention Center
Hall C

Surface Chemistry

S. Claridge, A. V. Teplyakov, L. Tribe, X. Zhou, *Organizers*

7:00 . Investigating molecular adsorption and transport properties at colloidal particle interfaces using second harmonic generation (SHG) spectroscopy. **R.O. Ali**, A. Dikkumbura, L.H. Haber

7:00 . Withdrawn

7:00 . Exploration of surface chemistry effects on the biodistribution and pharmacokinetics of dual-ligand luminescent gold nanoparticles. **C. Zhou**, Y. Lin, S. Yong, C. Scholtz, C. Du, S. Sun, J.D. Steinkruger, X. Zhou, S. Yang

7:00 . Development and optimization of a glass-based plasmonic platform decorated with gold nanospheres. **A. Saldaña**, S. Córdova, A. Fabián, Y. Hernandez, B.C. Galarreta

7:00 . Probing Au nanoparticle ligand bilayer dynamics via nuclear magnetic resonance (NMR) spectroscopy. **C.F. Graverson**, M.R. Jones

7:00 . Dynamics of polymer thin films in three-dimensional media. **J. Zou**, W. Chen

7:00 . Stability of poly(vinyl alcohol) thin films under environmental stressors. **S.M. Lee**, W. Chen

7:00 . Role of intermolecular interactions between nanoparticle capping ligands and hydrogel surfaces during sliding. **L. Buckley**, C. Bovia, G. Gleeson, M. Platz, M.B. Elinski

7:00 . Characterizing the geochemical transformations of halogenated organic compounds in-situ with Martian regolith simulants and terrestrial Bay sediments by 13C NMR. **P. Sharrock**, M. Bonder, M. Gaudreau, S. Panczak, G. Dingley, S.K. O'Shea

7:00 . Optical response of organized chiral surface using vibrational sum-frequency generation spectroscopy. **A. ALI**, N. Chiang, S. Baldelli

7:00 . How do metalation and ring-fusion affect surface-level adsorption of tetrapyrrolic macrocycles? : Systematic first-principles studies. **S. Suthaharan**, U. Mazur, K. Hipps, B. Chilukuri

MONDAY MORNING

Ernest N. Morial Convention Center
Room 232

2024 ACS National Award in Surface Chemistry - Symposium in Honor of Hedi Mattoussi

D. Miller, C. Wirth, *Organizers*

P. Guyot-Sionnest, *Presiding*

8:00 . Kinetics and mechanism of adsorption. **V.E. Agbo**

8:30 . From colloidal particles to far-from-equilibrium materials. **O. Steinbock**

9:00 . Early contributions to colloidal quantum dot surface chemistry and present challenges for their mid-infrared applications. **P. Guyot-Sionnest**

9:30 . Using functional polymer ligands to passivate and disperse perovskite nanocrystals. **T. Emrick**, C. Cueto, G. Leone

10:00 . Looking at the interface of nanoparticles with solution NMR spectroscopy. **F. Ribot**

Ernest N. Morial Convention Center
Room 240

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, U. Natarajan, Z. Niroobakhsh, *Organizers*

A. Mallia, *Organizer, Presiding*

8:00 . Molecular structure of 1:1 cationic:anionic surfactant pairs at the oil-water interface: Joined at the tail or not?. **K. Jones**, L.F. Scatena, G.L. Richmond

8:20 . Molecular scale investigation of oil-surfactant-brine microemulsion microstructure and viscosity. **A. Talapatra**, B. Nojabaei

8:40 . Dynamics of Pickering emulsifier assembly at fluid-fluid interfaces. **J.J. Bradford**, N. Starvaggi, E. Pentzer

9:00 . Effect of alkyl chain length on the gelation properties of alkanoic acids and ammonium Alkanoates as low-molecular-mass gelators. **A. Mallia**, H. Gurung Kunwar, J. Suazo, B. Matei

9:20 . Withdrawn

9:40 . Synthesis and assembly of spherical colloids with precise rough patches. **K. Guillot**, A. Al Harraq, P. Brahana, N.D. Ogbonna, J. Lawrence, Y. An, M.G. Benton, B. Bharti

10:00 . Withdrawn

10:20 . Exploring chitin nanocrystal-surfactant interactions via isothermal titration calorimetry and rheology. **P. Sarker**, X. Su, O.J. Rojas, S.A. Khan

Ernest N. Morial Convention Center
Room 231

2024 ACS National Award in Colloid Chemistry - Symposium in Honor of Robert D. Tilton

S. Garoff, J. K. Riley, K. J. Stebe, *Organizers*

T. M. Przybycien, *Presiding*

8:00 . Impact of weathering and pollutant adsorption on the fate of microplastics. P. Wu, M. Pasquet, Y. Fu, **J. Frechette**

8:25 . Predicting behaviors of macromolecule-coated nanoparticles using non-Langmuirian competitive adsorption models. **S.M. Louie**, R.A. Mathew

8:50 . Nonlinear electrophoresis of colloidal particles. R. Cobos, **A. Khair**

9:15 . Dynamics of interfacially adsorbed colloids in a bijel: dependence on particle surface chemistry. **A. Mohraz**

9:40 Intermission.

10:10 . Molecular basis of strong association in monoclonal antibodies. A. Valiya Parambathu, D.J. Rosenman, S. Yadav, **A.M. Lenhoff**

10:35 . Exploring magnetophoretic separation: From microscale motion control to water treatment. W. Chong, X. Teng, W. Ng, **J. Lim**

11:00 . Depletion forces in living systems. W. Niu, **M.M. Santore**

Ernest N. Morial Convention Center
Room 252

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 . Towards infection- and thromboresistant-medical device surfaces via antifouling strategies with controlled nitric oxide delivery. **M.R. Garren**, M. Ashcraft, O. Lautner-Csorba, V. Pinon, Y. Wu, D. Crowley, J. Hill, Y. Morales, R. Bartlett, E.J. Brisbois, H. Handa

8:25 . Nanoparticle-assisted foliar delivery of oxytetracycline for perennial food crop health management. **J. Pereira**, E. Davidson, S. Santra

8:45 . Materials degradation caused by biofouling in marine environments, evaluation, and surface finishing as a countermeasure. **H. Kanematsu**, D.M. Barry, A. Ogawa, T. Kogo, R. Kawai, H. Miura, N. Hirai, T. Kato, T. Kamijo, T. Hagio, R. Ichino, M. Yoshitake

9:05 . Selective determination of SARS-CoV-2 spike antigen by aptamers using localized surface plasmon resonance. **T. Lewis**, E. Giroux, S. Martic

9:25 Intermission.

9:35 . Improving the growth rate of hydrogen producing bacteria. **V. Horton**, M.G. Benton, B. Bharti

9:55 . Effect of the surface charge density on changes in α-synuclein structure. **B. Jachimska**, A. Kaminska, J. Szechynska

10:15 . DNA aptamer secondary structure influences calcium materials and collagen mineralization. **A.E. Gerdon**

10:35 . Extracellular vesicles infused liposomes in targeted drug delivery. S. sulthana, D. Shrestha, I. Joshua Santhosh, M. Kirby, A. Jernigan, **S. Aryal**

10:55 . Eradication of antibiotic-resistant *Pseudomonas aeruginosa* biofilms with a hybrid enzyme-antibiotic, stimuli-responsive nanosystem. **T. Tzanov**, K. Ivanova

11:15 . Design and delivery of new peptide-drug conjugates into three-dimensional tumoroids. **M.A. Biggs**, H.L. Hunt, S. Frantzeskos, **I.A. Banerjee**

11:35 . Silver nanoparticles stabilized on gelatin nanoparticles with enhanced antimicrobial activity. **D. Ozhava**, P. Winkler, Y. Mao

Ernest N. Morial Convention Center
Room 211

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

M. M. Santore, *Presiding*

8:00 . Osmocytosis: Osmotically induced generation and pulsatory poration of pinocytic vesicles inside giant vesicles. **P.D. Sambre**, J.C. Ho, A.N. Parikh

8:30 . Cholesterol Chelating Utility of Cyclodextrins. E. Fong, **A. Christopherson**, S. Kinzie, M.S. Johal

9:00 . Investigation of the antibacterial effects of natural products, elderberry, tea tree oil, and propolis, using Langmuir monolayers. **A. Goach**

9:30 . Tales from the deep: Lipidomic adaptations at extreme pressure. **E. Lyman**

10:00 . Correlated diffusion in lipid bilayer membranes. **F.L. Brown**

10:30 . Asymmetry and phase transitions in the two leaflets of cell membranes. **H. Dai**

11:00 . Lipid droplets as substrates for protein phase separation. **A. Kamatar**, J. Bravo, F. Yuan, L. Wang, E. Lafer, D. Taylor, J. Stachowiak, S. Parekh

Ernest N. Morial Convention Center
Room 253

Colloidal and Soft Metameterials

Colloidal and Soft Metamaterials for Optics

E. Runnerstrom, *Organizer*

J. Palomba, *Organizer, Presiding*

8:00 Introductory Remarks.

8:10 . Photonic materials from colloidal self-assembly. **D. Pine**

8:40 . Strain-induced photonic Pseudomagnetism in colloidal assemblies. **M. Rechtsman**

9:10 . Colloidal polaritonic metasurfaces for strong light-molecule interactions. **M. Wang**, A. Alù

9:40 Intermission.

10:10 . Interfacial assembly of colloidal meta-atoms and metasurfaces. **A.R. Tao**

10:40 . Macroscopic nanoparticle superlattices via self-assembly. **R. Macfarlane**

11:10 . Infrared plasmonic superlattices of colloidal metal oxide nanocrystals. **D.J. Milliron**

Ernest N. Morial Convention Center
Room 354

Surface Chemistry

Biocompatibility and Surface Functional Groups

S. Claridge, A. V. Teplyakov, X. Zhou, *Organizers*

M. Porras-Gomez, L. Tribe, *Organizers, Presiding*

8:00 . Geometric and scaling effects in the speed of catalytic enzyme micropumps. **T. Gao**, J. McNeill, T.E. Mallouk

8:20 . Use of silane self-assembled monolayers to inhibit methicillin-resistant *Staphylococcus aureus* biofilm formation. **E. Gillis**, P. Lundin, M.S. Blackledge, B. Fiser

8:40 . Transport of plastic nanoparticles on biomimetic membrane surfaces: Effects of heterogeneity and environmental parameters. **C. Dutta**

9:00 . Withdrawn

9:20 Intermission.

9:40 . '*Liquid-Like'* solid surfaces: Combative strategy towards anti-biofouling. **A. Shome**

10:00 . Zeolite surface characterization in aqueous suspension: Surface silanols profiling by conductometric titrations. **R. Dosi**, J.C. Poler

10:20 . Scanning probe microscopy investigations of bio-fouling on naval assets. **T.T. Brown**, J. Lee

10:40 . Understand the role of nitrogeneous functional group identity on accelerating 1,2, 3-trichloropropane decay by pyrogenic carbonaceous matters (PCM) and sulfide using PCM-like polymers. **H. Cao**, J. Mao, P.G. Tratnyek, W. Xu

Ernest N. Morial Convention Center
Hall B, Room 11

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, C. M. Sims, D. L. Watkins, *Organizers*

R. Nagarajan, *Organizer, Presiding*

8:00 . High-throughput experimental characterization of metal-organic framework-polymer interfaces. Y. Xu, J. Palomba, V. Saygin, **K.A. Brown**

8:30 . Influences of secondary building unit and linker functionalization on the surface properties of metal-organic framework materials: Gas sorption of SF_6. **D.S. Hedbom**, M. Åhlen, M. Sjodin, M. Strömme

8:50 . Covalent Organopolyhedra (COP) for enhanced fingerprint ridge detection: advancements over conventional print powders. A. Enz, **S. Liu**, J.L. Liu

9:10 . Solvation shells of porous nanocrystals revealed by vibrational spectroscopy. **A.N. Mapile**, M. LeRoy, K. Fabrizio, L.F. Scatena, C. Brozek

9:30 . Nanobrick wall multilayer thin films with high dielectric breakdown strength. **E. Iverson**, H. Legendre, S.V. Chavan, A. Aryal, M. Singh, S. Chakravarty, K. Schmieg, H. Chiang, P. Shamberger, A. Karim, J.C. Grunlan

9:50 . Achieving superhydrophobic surfaces via air-assisted electrospray. **L. Fei**

10:20 . Ligand-based control over the density of states in metallic systems. **B.J. Lear**, Z. Rhoden, B. Kaercher, K. Aviles

10:40 . Colloidal synthesis of transition metal nitride nanoparticles for the oxygen evolution reaction. C. DeLaney, S. Diaz-Abad, S. Maurya, J. Watt, **S. Ivanov**

11:00 . Synthesis and Characterisation of Bismuth Selenide for degradation and kinetic studies of anionic dyes under thermal and photochemical conditions. **U. Utkoor**, M. Shanti

11:20 . Molecular-level understanding of the interactions between polymer nanoparticles and phospholipid vesicles (liposomes). **K. Mendis**, L. Kesner, Z.A. Piskulich, Q. Cui, Z. Rosenzweig

11:40 . ZnO-NPs doped with cerium ions: use of machine learning models to predict the antibacterial activity. **D. Navarro-Lopez**, J. Mejía-Méndez, Y. Perfecto-Avalos, S. Martinez-Beltran, D. Torres-Rojas, K. Suarez Avila, T. Robles, A. Zavala, M. de Luna, A. Sanchez-Martinez, O. Ceballos-Sanchez, M. Sepulveda-Villegas, G. Sanchez-Ante, N. Tiwari, E. Lopez-Mena

Ernest N. Morial Convention Center
Room 239

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

A. Nazemi, *Presiding*

8:00 . Mesoionic carbenes (MIC), a versatile type of N-heterocyclic carbens (NHC) for the stabilization of gold nanoparticles. **F. Ribot**, L. Fensterbank, D. Mercier

8:30 . Stabilization of colloidal nanocrystal surfaces with *N*-heterocyclic carbene ligands. **R.L. Brutchey**

9:00 . Elucidating the wingtip-dependent orientation of N-heterocyclic carbenes on gold surfaces. **R. Thimes**, A. Santos, R. Chen, G. Kaur, L. Jensen, D.M. Jenkins, J.P. Camden

9:20 Intermission.

9:30 . Water-soluble NHC-stabilized gold nanoparticles: Applications in catalysis and biomedicine. **S.R. Thomas**, A. de Andrade-Querino, A. Casini

10:00 . Optical and photoluminescent properties of ligand-stabilized noble metal nanoclusters. **C.M. Aikens**

10:30 . Scalable preparation of intrinsically chiral metal surfaces for enantioselective processes. **N. Shukla**, A.J. Gellman

10:50 Intermission.

11:00 . Award Address (ACS Award in Surface Chemistry sponsored by Procter & Gamble). Coordinating polymers based on imidazole, N-heterocyclic carbene, salt and zwitterion motifs as nanocrystal stabilizers. **H. Mattoussi**

11:30 . Considerations for the syntheses of N-heterocyclic carbenes from a surface perspective. I. Jensen, G. Kaur, P. Nalaoh, H. Kirby, R. Borsari, J. DeJesus, S.S. Strausser, **D.M. Jenkins**

F-Element Reactivity at Interfaces

Sponsored by NUCL, Cosponsored by COLL, ENVR and GEOC

Gabor A. Somorjai Award for Creative Research in Catalysis

Sponsored by CATL, Cosponsored by COLL‡

Gabor A. Somorjai Award for Creative Research in Catalysis

Sponsored by CATL, Cosponsored by COLL‡

MONDAY AFTERNOON

Ernest N. Morial Convention Center
Room 232

2024 ACS National Award in Surface Chemistry - Symposium in Honor of Hedi Mattoussi

D. Miller, C. Wirth, *Organizers*

J. B. Schlenoff, *Presiding*

2:00 . Ligand exchange equilibrium at quantum dot surfaces in polar and aqueous solvent environments. **A.B. Greytak**

2:30 . Deficient ligand exchange and site-specific grafting of polymers on metal nanoparticles: Polymer-guided supracolloidal polymerization. **J. He**

3:00 . Synthesis and chemical modification of biological macromolecules while adsorbed on a solid support. **P. Dawson**

3:30 . Nanocrystals with near-universal solubility. S. Sarkar, O. Arogundade, **A. Smith**

4:00 . Theranostics using near-infared light. **F. Vetrone**

Ernest N. Morial Convention Center
Room 240

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers, Presiding*

S. Aryal, *Presiding*

2:00 Introductory remarks.

2:05 . Order evolution of protein 2D assembly at solid-liquid interfaces. **S. Zhang**

2:25 . Directing phase separation to harness microstructure in biomaterials for controlled cellular behavior. **L. Li**

2:45 . The effect of changing surface polyethylene glycol architecture on model tumour penetration of elongated nanoparticles. **M.G. Roberts**, V. Facca, R. Keunen, R. Reilly, M. Winnik

3:05 . Withdrawn

3:25 Intermission.

3:35 . Establishing morphology and conformational changes at biosensor interfaces for VOC detection using XAS and AFM techniques. **g. sant'anna**, N. Bedford, S. Kim, D. Sim

3:55 . Determining binding constants between LRP-1 and Fibrinogen: Applications in surface chemistry. **A. Yao**

4:15 . Divalent cations promote huntingtin fibril formation on endoplasmic reticulum model membranes. J. Markle, A. Skeens, J.A. Legleiter, **S. Frey**

4:35 . Bioengineered subcutaneous colon-specific immune niche for the treatment of colitis. **K. Au**, J. Wilson, J. Ting, A. Wang

Ernest N. Morial Convention Center
Room 231

2024 ACS National Award in Colloid Chemistry - Symposium in Honor of Robert D. Tilton

J. K. Riley, K. J. Stebe, *Organizers*

S. Garoff, *Organizer, Presiding*

2:00 Introductory Remarks.

2:05 . In situ optical mapping of the non-equilibrium organization of amphiphiles at oil-water interfaces. **N.L. Abbott**

2:30 . Designer polymers and nanoparticles for environmental sustainability. **G. Lowry**, R.D. Tilton, K. Matyjaszewski

2:55 . Colloid-polymer-surfactant interactions across the paint color palette. **J.K. Riley**, J. Gu, J.J. Rabasco, P.E. Hartnett

3:20 . Anti-icing charged polymer coatings. R.A. Biro, E. Tyrode, **E. Thormann**

3:45 Intermission.

4:15 . Surfactants in the environment: Self-assembly of PFAS pollutants in solution and at interfaces. **P. Alexandridis**, M. Tsianou, D. Bedrov

4:40 . Enhancing piroctone olamine retention from an anti-dandruff shampoo using micelle kinetics and polymer-surfactant phase science. **E.S. Johnson**, D. Chang, J.R. Schwartz, T.L. Catarino, A.L. Talley

5:05 . How do you like the neighborhood? Imaging protein stability in materials. **D.E. Leckband**, R. Chang, M. Gruebele

5:30 . Interfacial colloidal interactions & diffusion with adsorbed macromolecules. **M.A. Bevan**

Ernest N. Morial Convention Center
Room 211

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

K. A. Hristova, *Presiding*

2:00 . Using model membranes to investigate the relationship between sex hormones and cholesterol and their role in the progression of Alzheimer's Disease. **C. Nolasco**, A. Goach

2:30 . Biomimetic membrane platform reveals colloidal phase transitions in 2D elastic systems. W. Xin, **M.M. Santore**

3:00 . Biomembrane interactions with non-spherical nanoparticles. **N. Malmstadt**, R. Chairil

3:30 . Facile fabrication of polymer gel-supported lipid bilayer systems using droplet-assisted assembly technique. K. Chuduang, P. Pholraksa, **C. Naumann**

4:00 . Investigating interactions of small molecules and peptides with the bacterial cell envelope using enhanced sampling methods. A. Kulshrestha, P. Sharma, R. Vaiwala, **G.K. Ayappa**, s. punnathanam

4:30 . Lipid packing defects preferred over charge in alpha-synuclein-membrane binding interaction. **M. Turke**, D.H. Kerr, S. Maltseva, B.R. Slaw, K.M. Raghavan, K.C. Lee

5:00 . Influence of alcohols on the mechanical properties and phase behaviour of lipid bilayers. **S. BUTI**, A. Agrawal, R. Ashkar, R. V.A.

Ernest N. Morial Convention Center
Room 252

Colloidal Nanoparticles Synthesis and Assembly

Synthesis and Assembly of Nanoparticles

D. Huber, T. Li, Y. Sun, D. Ye, *Organizers*

H. Fan, *Organizer, Presiding*

2:00 . Self-assembly of metallic particles for electrophotographic printing applications. Y. Qi, **C. Cheng**

2:30 . Metallic nanostructures with enzyme-like catalytic activities. **X. Xia**

3:00 . Insights into scientific publishing. **A. Vartanian**

3:30 Intermission.

3:40 . Determine molecular structures of proteins at buried interfaces. **Z. Chen**

4:10 . Public-private-academic partnership: The microelectronics Commons. **A. Smith**

4:40 . Impact of nonionic surfactants on particle synthesis and particle assembly at interfaces. **D. Miller**, M. Carter, J. Schork, T. Ratani, T. Lan, R. Woodworth, T. Kuo, J.S. Fisk, J. Mecca

5:10 . Engineering multi-phase nanodroplets for nanoparticle templating and encapsulation. **M.E. Helgeson**

Ernest N. Morial Convention Center
Hall B, Room 11

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, C. M. Sims, D. L. Watkins, *Organizers*

R. Nagarajan, *Organizer*, *Presiding*

2:00 . Evaluating how the physicochemical properties of nanomaterials in biomimetic environments influence their reflectivity and optical contrast. **M.R. Mackiewicz**

2:30 . Using 2D graphene nanopores for enhanced desalination: Influence of cation-Pi interactions and salt concentration on evaporation flux. A. Ronghe, **G.K. Ayappa**

3:00 . Controlling light emission in group IV (Si, Ge, Sn) semiconductor nanomaterials. B. Ryan, J.B. Essner, A. Bera, **M.G. Panthani**

3:30 . Optimization in the synthesis of superparamagnetic iron oxide nanoparticles as magnetic particle imaging (MPI) tracers. **E. Ureña Horno**, D. Gray, R. Batty, J. Leaver, L. O'Brien, M. Giardiello

3:50 . Optimisation of SPIONs as MPI tracers for diagnostic and theranostic applications. **L.D. Owens**, E. Ureña Horno, D. Gray, H. Poptani, S. Rannard, M. Giardiello

4:10 . Zombie Diatoms: Acoustically powered, diatom frustule biotemplated microswimmers. **M.C. Ozkan**, J. McNeill, T.E. Mallouk

4:30 . Understanding the photophysics of WO_{3-x}. **C.J. Fabiano**

4:50 . Sustanable utilization of biowaste towards green Synthwsis of metal nanoparticles and its structure characterization. **S. SHEU**, D.J. Macquarrie

5:10 . Withdrawn

Ernest N. Morial Convention Center
Room 253

Colloidal and Soft Metameterials

3D Metamaterials by Bottom-Up, Top-Down, and Hybrid Approaches

J. Palomba, E. Runnerstrom, *Organizers*

J. R. Uzarski, *Presiding*

2:00 . 3D functional nanomaterials through self-assembly by design. **O. Gang**

2:30 . Designing colloids for manufacturing soft electronics and multifunctional metamaterials. **W. Boley**

3:00 . Emulsion-templated polymerizations to fabricate hybrid materials for energy management, gas uptake, and additive manufacturing. E. Pentzer, **N. Starvaggi**

3:30 Intermission.

4:00 . Topochemical photo-polymerization of self-assembled donor-acceptor stilbenes. **G. Han**, J. Usuba

4:30 . Multifunctional molecular ferroelectric metamaterials. **S. Ren**

5:00 . E-beam patterned shape-shifting microhydrogels. X. Wu, **M. Libera**

5:30 . 3D printing-assisted casting of soft electronic materials. **Y. Wang**

Ernest N. Morial Convention Center
Room 239

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

K. Park, *Presiding*

2:00 . Aluminum nanocrystals: The surface oxide as ligand for chemical functionalities. **N.J. Halas**

2:30 . Key role of surfactants to control the shape and the catalytic properties of metallic nanoparticles. **C. Michel**

3:00 . Bonding of N-heterocyclic carbenes on metal nanoparticles: A computational approach to characterizing stability. **A. Santos**, L. Jensen, G. Knizia

3:20 Intermission.

3:30 . Ligand-derived nanoparticle chemomechanics. **M.R. Jones**

4:00 . Nanoscale imaging of molecular adsorption on single nanoparticles. **P. Chen**

4:30 . Investigating the top-down synthesis of peg-functionalized NHC@AuNPs and their application for bioconjugation. **C. Eisen**, B. Keppler, J. Chin, X. Su, M.R. Reithofer

4:50 Intermission.

5:00 . Choline carboxylic acid ionic liquid-stabilized gold nanoparticles for biomedical applications. P. Vashisth, **E. Tanner**

5:30 . Enhanced stability of self-assembled monolayers by supramolecular and organometallic approaches. **H. Yoon**

Virtual Only
Virtual Session

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, *Organizers*

Z. Niroobakhsh, *Organizer, Presiding*

3:00 . Specific ion effects on the surface of sugar-based macromolecules in aqueous medium. **Y. Ozdogan**, S. Farooq, H. Okur

3:20 . Universal fast mode regime in wetting kinetics. S. Zaidi, **P. Jaiswal**, M. Priya, S. Puri

3:40 . Structure and transport properties of dense monodisperse and polydisperse fluids. S. Suvarna, **M. Priya**

4:00 . Phase behavior of attractive polymer chains via Monte Carlo simulation. **A. Sevilla**, D. Martínez-Fernández, M. Herranz, K. Foteinopoulou, N. Karayiannis, M. Laso

Virtual Only
Virtual Session

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, Z. Niroobakhsh, *Organizers*

12:00 . Phase behavior of athermal colloidal mixtures of chains and monomers. **O. Bouzid**, D. Martínez-Fernández, M. Herranz, N. Karayiannis

12:00 . Rhodopsin activation involves biasing of lipid-dependent ensemble of conformational substates. **M.F. Brown**, E. Ritter, P. Fischer, B. Mertz, F. Bartl, A. Struts

12:00 . Direct emulsification of stable superheated perfluorobutane nanodroplets by sonication: Addressing the limitations of the microbubble condensation technique. A. Woodward, R.F. Mattrey, **C. de Gracia Lux**

12:00 . Fabrication and characterization of nitroxide containing hybrid nanogels. A. Fried, K. Alsaedi, H. Ariel, A. li, M. Ginsburg, **U. Samuni**

12:00 . Reactive simulations of silica functionalization with aromatic hydrocarbons. **S.R. Garcia**, Y.S. Zholdassov, A.B. Braunschweig, A. Martini

Virtual Only
Virtual Session

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, R. M. Espinosa-Marzal, S. Sinha Ray, *Organizers*

12:00 . Synthesis of terbium-doped carbon dots (Tb-CDs) as a novel contrast agent for efficient X-ray attenuation. **T.S. Atabaev**, K. Zhumanova

12:00 . Design and development of peptide amphiphiles with antioxidant properties for bioprinting. **H.L. Hunt**, B.G. Goncalves, M.A. Biggs, **I.A. Banerjee**

Virtual Only
Virtual Session

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

12:00 . Lipid headgroup influence on membrane packing and elasticity. F.T. Doole, C.K. Chan, D. Sarkar, C. Job, A. Singharoy, A. Struts, **M.F. Brown**

Virtual Only
Virtual Session

Colloidal Nanoparticles Synthesis and Assembly

H. Fan, D. Huber, T. Li, Y. Sun, D. Ye, *Organizers*

12:00 . Tough films with high crack-propagation resistance assembled from polymer nanoparticles. **Y. Sasaki**, Y. Nishizawa, T. Kureha, K. Uenishi, K. Nakazono, T. Takata, D. Suzuki

12:00 . Organic dye nano-assemblies with aggregation-induced photophysical changes and their bio-applications. **M. Fan**, C. Ji, M. Yin

12:00 . Design, synthesis, and application of Perylene monoimide-based NIR-II phototheranostic agent. **M. Peng**, C. Ji, M. Yin

12:00 . Solid-state synthesis of $Si_{1-x}Ge_x$ nanocrystals for composition-tunable energy gaps. **G. Spence**, D. Pate, U. Ozgur, I.U. Arachchige

12:00 . VEGFR-targeted peptide nanoparticles for inhibiting neovascularization and enhancing photodynamic therapy. **X. Li**, N. Yan

12:00 . Spherical crystallization of N-acetyl-L-cysteine for improved pharmaceutical properties. **M.S. Balanay**, I.C. Dela Cruz, C. Chang

Virtual Only
Virtual Session

Fundamental Research in Colloids, Surfaces and Nanomaterials

S. Hunyadi Murph, J. Katsaras, U. Natarajan, *Organizers*

12:00 . Universal Strategy Enabling Fabrication of durable superhydrophobic surfaces based on interface strengthening. **C. Cui**, L. Yang, B. Qi, Z. Li, J. Wei

Virtual Only
Virtual Session

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, R. Nagarajan, C. M. Sims, D. L. Watkins, *Organizers*

12:00 . Nitroso-Au interactions for the label-free SERS detection. **M. Johsnon**, D. Aligholizadeh, E. Hondrogiannis, **M. Devadas**

12:00 . Dual-light activatable Perylenediimides for nitric oxide enhanced photothermal therapy. **x. zheng**, C. Ji, M. Yin

12:00 . pH and temperature-responsive drug delivery: A study on DOX encapsulation in ZIF-8 with PCM coating. **P. Lu**, W. Wei, M. Wildy

12:00 . Solid quantum dot films for improved waveguiding in LSC applications. **S. Froggatt**, D.A. Rider, S. McDowall

12:00 . Effect of plasma treatment on the structure of graphene oxide membranes and its potential water treatment application. **A. Donnelly**, Y. Stehle, E.J. Robertson

12:00 . Dual SERS enhancement of hybrid materials based on silver nanoshells and graphene quantum dots. **H. Chang**, H. Lee

Virtual Only
Virtual Session

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

12:00 . Detection of renal biomarkers using Surface-Enhanced Raman Spectroscopic nanoprobes for early detection of Chronic Kidney Disease of unknown etiology. **U. Rodrigo**, H. Jayaweera, S. Gunewardene, N. Abeyasinghe

Virtual Only
Virtual Session

PUNC: Nanomaterials Research at Primarily Undergraduate Institutions

J. G. Clar, S. Hughes, A. M. Munro, A. K. Sharma, *Organizers*

12:00 . Metal doping effect on bi-icosahedral Au25 nanoclusters. **B. Raufman**, **C. Connolly**, Z. Qureshi, D. Smith, Z. Freeland, **M. Devadas**

12:00 . Synthesis and characterization of gold nanoclusters with an electroactive ligand. **T. Snyder**, **J. Winterle**, D. Smith, C. Connolly, M. Hakim, **M. Devadas**

Virtual Only
Virtual Session

Surface Chemistry

S. Claridge, A. V. Teplyakov, L. Tribe, X. Zhou, *Organizers*

12:00 . Enhancing rate performance of LiFePO4 cathode by designing Helmholtz plane with high lithium ion concentration on cathode side. **T. Rui**

12:00 . Water-assisted mechanochemical synthesis of highly porous carbon materials from cellulose derivative. **R. Dubadi**, P. Onsri, L. Chuenchom, D. Dechtrirat, M. Jaroniec

F-Element Reactivity at Interfaces

Sponsored by NUCL, Cosponsored by COLL, ENVR and GEOC

Gabor A. Somorjai Award for Creative Research in Catalysis

Sponsored by CATL, Cosponsored by COLL‡

Gabor A. Somorjai Award for Creative Research in Catalysis

Sponsored by CATL, Cosponsored by COLL‡

MONDAY EVENING

Ernest N. Morial Convention Center
Hall C

COLL Sci-Mix

8:00 . Molecular structure of 1:1 cationic:anionic surfactant pairs at the oil-water interface: Joined at the tail or not?. **K. Jones**, L.F. Scatena, G.L. Richmond

8:00 . SFG and QCM-D studies on interfacial behavior and antifouling activity of adsorbed copolymers at solid/liquid interfaces in situ in real-time. **j. Gao**, M. Khan, Y. Wu, D. Hawker, K.E. Gutowski, T. Lu, R. Konradi, P. Stengel, L. Mayr, J. Jeanne M. Hankett, M. Kellermeier, Z. Chen

8:00 . Mechanisms of nanobubbles interactions with biological macromolecules. **M. Colic**

8:00 . Characterization of lipid-based natamycin nanocarriers for ophthalmic drug delivery. **L. Talarico**, I. Clemente, S. Pepi, A. Gennari, G. Leone, C. Bonechi, M. Consumi, A. Magnani

8:00 . Effect of operational parameters on photocatalytic degradation of ibuprofen pharmaceutical using coconut shell activated carbon doped ZnO nanocomposites. **A.O. Dada**, U. Pal

8:00 . 2D-classification of core-shell quantum dots via selective agglomeration. **A. Rezvani**, Z. Wang, D. Segets

8:00 . Graphene oxide and its derivatives as adsorbents for PFOA molecules. **X. Wang**, R. Qiao

8:00 . Transport of small molecules across surfactant-laden interfaces. S. Ham, **X. Wang**, R. Qiao

8:00 . Nitric oxide-releasing glycosaminoglycans for corneal wound healing. **M.E. Purvis**, M.H. Schoenfisch

8:00 . Directing phase separation to harness microstructure in biomaterials for controlled cellular behavior. **L. Li**

8:00 . Divalent cations promote huntingtin fibril formation on endoplasmic reticulum model membranes. J. Markle, A. Skeens, J.A. Legleiter, **S. Frey**

8:00 . Determining binding constants between LRP-1 and Fibrinogen: Applications in surface chemistry. **A. Yao**

8:00 . pH-responsive rhenium disulfide/mesoporous silica core-shell nanoparticles for drug delivery, chemo-photothermal therapy and cellular imaging. **H. Na**, D. Radu, J. Carrier, C. Lai

8:00 . Multifunctional nanogels to cure drug-resistant bacterial infections and attenuate bacterial antigen-responsive hyper-inflammation. **S. Mukherjee**, J. Haldar

8:00 . Cationic bolaamphiphiles containing different linker: Comparison study on self-assembly, in vitro cytotoxicity, antibacterial activity, and gene transfection. **P. Mondal**, S. Roy, J. Dey, S.B. Dasgupta

8:00 . Antimicrobial efficiency of Ag- and Cu- nanoparticle-hydrogel nanocomposite systems. **K.M. Sheets**, N.L. Courtenay, J. Dominguez, U.I. Flores, M. Havens, J.J. Keleher

8:00 . Synthesis and characterization of stimuli- responsive self-assembling cyclic peptide nanotubes through light exposure. **O. Atoyebi**, M. Beasley, W.A. Maza, M.K. Kolel-Veetil, A.D. Dunkelberger, K. Fears

8:00 . Novel theranostic nanocarriers for combined drug delivery and diagnostic monitoring by Magnetic Resonance Imaging (MRI). **N. Thomson**, D. Gray, H. Poptani, S. Rannard, M. Giardiello

8:00 . Tuning the magnetic response of organic/inorganic nanocomposites composed of Spion embedded nanogels. **D. Gray**, E. Ureña Horno, R. Batty, J. Leaver, L. O'Brien, M. Giardiello

8:00 . Development of icariin loaded DSPE-PEG2000/DPPC micelles for pulmonary delivery. **C. Jiang**

8:00 . Gold- and gold/silver-deposited magnesium ferrite-based nanoparticles for catalytic reduction of 4-nitrophenol. **S. Hoijang**, T. Kunakham, J. Nonkumwong, S. Ananta, T. Lee, L. Srisombat

8:00 . Characterization of graphene oxide's physicochemical properties. **Y. Chun**, Y. Stehle, E.J. Robertson

8:00 . To bind or not to bind: Donor-acceptor complexation at the liquid-solid interface through bivalent design. **R. Reynaerts**, A. Mukherjee, A. Minoia, A. Rösch, C. Corbet, R. Lazzaroni, G. Vantomme, E.W. Meijer, K.S. Mali, S. De Feyter

8:00 . '*Liquid-Like'* solid surfaces: Combative strategy towards anti-biofouling. **A. Shome**

8:00 . Modifying reaction conditions to control nanoparticle morphology in gold decorated graphene oxide. E. Stroud, **S. Burkert**

8:00 . Influence of alcohols on the mechanical properties and phase behaviour of lipid bilayers. **S. BUTI**, A. Agrawal, R. Ashkar, R. V.A.

8:00 . Using model membranes to investigate the relationship between sex hormones and cholesterol and their role in the progression of Alzheimer's Disease. **C. Nolasco**, A. Goach

8:00 . Impact of amphiphilic co-solvents on cellular membrane organization and its implications for biofuel production. L. Tan, M. Smith, S. Pingali, H.M. O'Neill, J. Katsaras, J. Smith, B.H. Davison, J. Elkins, **J.D. Nickels**

8:00 . Withdrawn

8:00 . Perfluorooctanoic acid fluidizes membranes and enhances bioconcentration. **R.C. Trousdale**, T.N. Sobolewski, R.A. Walker

8:00 . Exploring the binding of metal cations to negatively charged lipids by diffusion constant measurements. C. Reynolds, **R. Zdenek**, P.S. Cremer

8:00 . Investigation of the thermodynamics and kinetics of transition metal ion - lipid binding interactions. C. Reynolds, A. Marroquin, **O.C. Fiebig**, R. Zdenek, K. Chokhany, A.J. Glaid, P.S. Cremer

8:00 . Membraneless organization in a molecularly crowded environment: Interplay between associative and segregative LLPS systems. **C. Love**, C. Chen, C.F. Carnahan, S. Deshpande, A.N. Parikh

8:00 . Langmuir Monolayers as model cell membrane systems for the investigation of the healing effects of bee propolis and its main bioactibve component on burned and wounded skin cells. **I. Hawkins**, A. Goach

8:00 . Preventing coarsening of foams using hydrophobically modified silica nanoparticles: A study using microfluidics, xray reflectivity, grazing incidence small angle xray scattering and dilational viscosity measurents. **C. Maldarelli**, N. Donovan, R.S. Tu, B. Ocko, H. Zhang, M. Bera

8:00 . Glutathione monolayer protected nanoparticles influence calcium phosphate mineralization of collagen. **K. Ta**, A.E. Gerdon

8:00 . Computational investigation of the impact of orientations on ionic contact pairs. **S.L. Franke**, A.K. Sharma

8:00 . Plasmon driven chemistry of viologen derivatives. **T. Huffman**, M.D. Sonntag

8:00 . Developing selenium precursors for ZnSe nanocrystal syntheses. **R. Smith**, A.M. Munro

8:00 . Decoupling sphere diameter and origami binding site size in microsphere/nanosphere lithography. **J. Hastings**, C. Smith, D. Neff, **M.L. Norton**

8:00 . Incorporating octanethiol-functionalized gold nanoparticles into the interior of bilayer peptoid nanosheets. C. James, **E.J. Robertson**

8:00 . Photo-catalytic degridation of emerging pollutants using a nano-carbon / TiO_2 self-assembled coating. **M.A. Burrows**, F. Webster

8:00 . Achieving metal doping of strongly confined halide perovskite nanocrystals under ambient conditions. **Z. VanOrman**, M. Cárdenes Wuttig, A.M. Reponen, S. Feldmann

8:00 . Directing triplet and singlet energy transfer in halide perovskite nanocrystal-rhodamine dye hybrids. **A. Chemmangat**, P.V. Kamat

8:00 . Multiexcitonic emission from $Cs_2ZrCl_6:Mo^{4+}$ vacancy ordered lead-free double perovskites. **S. KUMAR**, S. Sapra

8:00 . Aluminum nanocrystals: The surface oxide as ligand for chemical functionalities. **N.J. Halas**

8:00 . General synthesis of rare earth oxide nanocluster superstructures via high temperature surface ligand switching. **G. Johnson**, C. Liu, S. Zhang

8:00 . Modulation of two-dimensional exciton emissions at room temperature by colloidal gold nanodisk-based plasmonic nanocavities. **X. XIA**, J. Wang

8:00 . Design and synthesis of antibacterial manganese sulfide nanoparticles for Pierce's disease. **Y. Faroud**, J. Pereira, S. Santra

8:00 . Development of plasmonic catalysts for light-driven ammonia production. **D. Grinnell**, M. King

8:00 . Nickel-copper bimetallic nanocatalyst synthesis via galvanic exchange. **C.B. Wijethunga**, M. King

8:00 . Thermal-responsive nanocrystals superlattice from increased mobility of NCS with lubricating ligands. **S. Yang**, N. Yifan, D. Yang, Y. Cai, Y. Zhang, C.R. Kagan, J.G. Saven, C.B. Murray

8:00 . Probing the thermodynamics of the nanoparticle-protein corona using a host-guest framework. **C.S. Kariyawasam**, A. Aborode, T.L. Sousa, N.C. Fitzkee

8:00 . Highly fluorescent nanoplatforms for specific cell targeting. **M. Holzapfel**, M. Mutas, S. Kerpa, W. Maison, N. Feliu Torres

8:00 . Examining fibroblast growth factor protein corona formation on $CuInS_2$/ZnS Quantum Dots with FRET and quenching. **C. Robinson**, B. Alexander, M. Mohale, P. Okoto, S.K. Thallapuranam, C.D. Heyes

8:00 . Strain-induced photonic Pseudomagnetism in colloidal assemblies. **M. Rechtsman**

8:00 . Multifunctional molecular ferroelectric metamaterials. **S. Ren**

8:00 . Room-temperature quantum coherence in icosahedral virus particles. **B. Dragnea**

8:00 . Self-organization of active colloids induced by shape heterogeneity and broken axisymmetry. **W.E. Uspal**

8:00 . Accelerated aging as a solvent-free methodology to access biomass-based nanomaterials. **T. Jin**, E. Lam, A.H. Moores

8:00 . Pressure modulated monoxidation of C-H bonds by Dicopper-m-oxo complex. **N. Martell**, P. VanNatta, H. Yan

8:00 . Capability study of laser-reduced graphene oxide electrochemical sensors. **B.P. Cronin**, A. Rowley, S. Fan, Y. Stehle

Virtual Only
Virtual Session

COLL Sci-Mix

8:00 . Phase behavior of attractive polymer chains via Monte Carlo simulation. **A. Sevilla**, D. Martínez-Fernández, M. Herranz, K. Foteinopoulou, N. Karayiannis, M. Laso

8:00 . Design and delivery of new peptide-drug conjugates into three-dimensional tumoroids. **M.A. Biggs**, H.L. Hunt, S. Frantzeskos, **I.A. Banerjee**

8:00 . Synthesis and characterization of gold nanoclusters with an electroactive ligand. **T. Snyder**, **J. Winterle**, D. Smith, C. Connolly, M. Hakim, **M. Devadas**

8:00 . Metal doping effect on bi-icosahedral Au25 nanoclusters. **B. Raufman**, **C. Connolly**, Z. Qureshi, D. Smith, Z. Freeland, **M. Devadas**

8:00 . Iron-mediated cancer therapy promoted by hyperthermia. **M. Zha**, K. Li

8:00 . Human serum albumin conjugated gold nanoparticles based drug delivery systems of ferulic acid and sinapic acid. **A. ANJALI**, N. Kishore

TUESDAY MORNING

Ernest N. Morial Convention Center
Room 252

Active and Responsive Matter

N. Pesika, *Organizer*

B. Bharti, *Organizer, Presiding*

8:00 . Living active emulsions driven by bacteria. N. Dewangan, U. Ramesh Kumar, N. Nguyen, P. Cirino, **J. Conrad**

8:40 . Chemically tuning attractive and repulsive interactions between solubilizing, active droplets. C. Wentworth, A. Castonguay, P. Moerman, C. Meredith, R. Balaj, S. Cheon, **L.D. Zarzar**

9:00 . Enzyme catalysis causes fluid flow, motility, and directional transport on membranes. **A. Sapre**

9:20 . Catalytic active particle motion in the presence of molecular adsorbates: liquid-phase adsorption isotherms and enhanced active motion. **E.A. Baghdady**, J.W. Medlin, D.K. Schwartz

9:40 . Morphogenesis of supramolecular assemblies via biocatalytic activation. **W. Paxton**, N. Bair, C. Miller, B.A. Staynings, Q. Zhu, D.R. Tree

Ernest N. Morial Convention Center
Room 240

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, *Organizers, Presiding*

S. Aryal, *Presiding*

8:00 Introductory remarks.

8:05 . Nature-inspired microhook structures for directional adhesion. **M. Farzam**, M. Beitollahpoor, N. Pesika

8:20 . pH-responsive rhenium disulfide/mesoporous silica core-shell nanoparticles for drug delivery, chemo-photothermal therapy and cellular imaging. **H. Na**, D. Radu, J. Carrier, C. Lai

8:35 . Emerging biomaterials: Engineered hydroxyapatite nanowire bio-ink for cellular regeneration and 3D printing. **M.B. Venedicto**, D. Thomas, C. Lai, D. Radu

8:50 . Large-scale 3D nanonetwored silica film for polymer-free drug-eluting stents. **E. Jeon**, D. Kang, S. Kim, K. Kim, J. Lee

9:05 . Fabricating remarkably stable hydrophilic silk surfaces using plasma modification. A. Keobounnam, C. Lenert-Mondou, A. Kubik, **M.J. Hawker**

9:20 Intermission.

9:30 . Spatially confined tandem system with GOx and HRP compartmentalized in ultrafiltration membrane. **S. Barricella**

9:45 . Nanogel-coated antimicrobial and antifouling contact lenses. **G. Ferreres Cabanes**, S. Pérez-Rafael, E. Guaus, O. Palacios, J. Torrent-Burgués, T. Tzanov

10:00 . Magnetically-modulated antimicrobial activity of biopolymer-based magnetoelectric nanocomposites. **J. Moreira**

10:15 . Multifunctional nanogels to cure drug-resistant bacterial infections and attenuate bacterial antigen-responsive hyper-inflammation. **S. Mukherjee**, J. Haldar

10:30 . Developing a nitric oxide-releasing topical treatment for cutaneous melanoma. **Q.E. Grayton**, S. Wallet, M.H. Schoenfisch

Ernest N. Morial Convention Center
Room 242

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, *Organizers*

Z. Niroobakhsh, *Organizer, Presiding*

H. C. Chu, *Presiding*

8:00 . Effects of molecular and macromolecular crowding agents on protein/polymer complex coacervation. **S. BISWAS**, A. Hecht, S. Noble, Q. Huang, R. Gillilan, A. Xu

8:20 . Vesiculation in amphiphilic diblock and triblock copolymers: morphology evolution and thermodynamic driving forces. S. Liu, **R. Sureshkumar**

8:40 . Effects of photooxidation on microplastic surface properties. **P. Brahana**, A. Al Harraq, B. Bharti

9:00 . Self-assembly of zwitterionic bottlebrush amphiphiles for drug delivery. **J. LEE**, K.E. Cureno Hernandez, S. Kim, Z.R. Cartwright, M. Herrera-Alonso

9:20 . SFG and QCM-D studies on interfacial behavior and antifouling activity of adsorbed copolymers at solid/liquid interfaces in situ in real-time. **j. Gao**, M. Khan, Y. Wu, D. Hawker,

K.E. Gutowski, T. Lu, R. Konradi, P. Stengel, L. Mayr, J. Jeanne M. Hankett, M. Kellermeier, Z. Chen

9:40 Intermission.

9:55 . Ternary phase diagram of SBM-triblock terpolymer in controlled confinement. **M. Trömer**, Y. Post, E. Zirdehi, A. Nikoubashman, A. Gröschel

10:15 . Hierarchical polymer nanoparticles self-assembly *via* controlled interfacial interactions. **N.R. Visaveliya**, J. Koehler

10:35 . PFAS removal from aqueous based systems with nanobubbles and nanoparticles enhanced colloidal organoclay adsorption and flotation. **M. Colic**

10:55 . Graphene-coated poly(butyl acrylate) microspheres for granular grippers with force-sensing ability. M. Joyce, S.M. McDermott, **D.H. Adamson**

Ernest N. Morial Convention Center
Hall B, Room 10

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

R. Ashkar, *Presiding*

8:00 . Elucidate the interaction mechanism between aluminum adjuvants and phospholipids. **B. Broderick**, A. Xu

8:30 . Phase-separated lipid-based nanoparticles: selective behavior at the nano-bio interface. **A. Kros**

9:00 . Quantification of ligand and mutation-induced bias in EGFR phosphorylation in direct response to ligand binding. D. Wirth, E. Ozdemir, **K.A. Hristova**

9:30 . Deciphering differential recognition of phosphatidylserine-binding peripheral membrane proteins. D. Kerr, T. Suwatthee, Z. Gong, S. Maltseva, H. Hwang, B.R. Slaw, W. Bu, B. Lin, J. Henderson, G. Tietjen, T.L. Steck, E.J. Adams, **K.C. Lee**

10:00 . Mimicking lipid membranes. **N.K. Devaraj**

10:30 . Investigating membrane associated protein complex using nonlinear spectroscopic technique. **Z. Chen**

11:00 . Reconstruction of single-pass transmembrane proteins in synthetic cells using a spontaneous insertion-ligation strategy. **A.J. Lin**, A. Karthik, B. Belardi

Ernest N. Morial Convention Center
Room 231

2024 ACS National Award in Colloid Chemistry - Symposium in Honor of Robert D. Tilton

S. Garoff, K. J. Stebe, *Organizers*

J. K. Riley, *Organizer, Presiding*

8:00 . Porous thin films facilitate rapid evaporation of water droplets. **W.A. Ducker**, M. Hosseini

8:25 . Diffusiophoresis of a spherical particle in porous media. **H.C. Chu**, S. Sambamoorthy

8:50 . Designing peptides to fish for rare earth elements. L. Ortuno Macias, C. Maldarelli, K.J. Stebe, **R.S. Tu**

9:15 . Investigating the influence of surfactant and gas type on foam strength in porous media. **S.L. Biswal**

9:40 Intermission.

10:10 . Process intensification for multiphase systems. **E. Lopez Guajardo**

10:35 . Design of protein nanoparticles to improve cancer vaccine efficacy. N. Butkovich, E. Li, J.A. Tucker, E.L. Nelson, **S. Wang**

11:00 . Preventing coarsening of foams using hydrophobically modified silica nanoparticles: A study using microfluidics, xray reflectivity, grazing incidence small angle xray scattering and dilational viscosity measurents. **C. Maldarelli**, N. Donovan, R.S. Tu, B. Ocko, H. Zhang, M. Bera

11:25 . Experimental and Theoretical Advances in Surfactant Adsorption and Dilatation. **J. Zasadzinski**

11:50 Concluding Remarks.

Ernest N. Morial Convention Center
Hall B, Room 11

Colloidal and Soft Metameterials

Data- and Theory-Driven 3D Metamaterials Design

J. Palomba, *Organizer*

E. Runnerstrom, *Organizer, Presiding*

8:00 . Optical feedback and theoretical modeling for nanoscale self-assembly dynamics. **G. Bisker**

8:30 . Computational framework enabling fast and scalable simulations of particulate suspensions. Z. Ma, Z. Ye, **W. Pan**

9:00 . Unravelling hierarchical soft matter using self-driving Labs. **K.A. Brown**

9:30 . Neural network driven optimization of targeted metasurface colors. **M. Griep**, C. Rinderspacher, D. Shreiber

10:00 Intermission.

10:20 . Hyperuniform many-body systems and their novel physical properties. **J. Kim**, S. Torquato

10:50 . High-throughput virtual screening and hybrid computational/experimental active learning for novel hydrogel-nanoparticle sensors for fentanyl detection. **A. Shayesteh Zadeh**, A. Winton, M. Coppock, J. Palomba, A. Ferguson

11:10 . Transfer learning of inter-nanoparticle interactions for Maxwell lattice. **Z. Ma**, C. Qian, Q. Chen, W. Pan

11:30 . Plasmon coupling in disordered colloidal networks. **T. Truskett**

Ernest N. Morial Convention Center
Room 232

Colloidal Nanoparticles Synthesis and Assembly

Synthesis and Assembly of Nanoparticles

H. Fan, T. Li, Y. Sun, D. Ye, *Organizers*

D. Huber, *Organizer*, *Presiding*

8:00 . Decorating the ends of gold nanorods. **C.J. Murphy**

8:30 . Colloidal Cd-chalcogenide-based core-shell quantum dots: synthesis, self-assembly and applications. **O. Chen**

9:00 . DNA-programmed assembly of wafer-scale, nanoarchitected materials. **R. Macfarlane**

9:20 . Colloidal gels from plasmonic metal oxide nanocrystals. **D.J. Milliron**

9:50 Intermission.

10:00 . Enhancing the facture resistance of nanoparticle assemblies via polymer infiltration. **D. Lee**, K. Turner

10:30 . Chiral nanostructures with chirality continuum. **N. Kotov**

11:00 . Chiral plasmonic nanoparticles. **J. Wang**

11:30 . Devising new synthetic controls for forming asymmetric metallic nanostructures. **S. Neretina**, R. Hughes, W. Tuff, Z. Lawson, R. Neal, S. Golze

Ernest N. Morial Convention Center
Room 239

Next-Generation Surface Functionalization Strategies for Noble-Metal Surfaces and Nanoparticles: From Fundamentals to Applications

J. P. Camden, E. Gross, D. M. Jenkins, *Organizers*

A. Wuttig, *Presiding*

8:00 . Withdrawn

8:30 . Surface chemistry controlled structure and performance of metal and metal-like nanoparticles. **J. Millstone**

9:00 . Reactivity variance between stereoisomers of saturated N-heterocyclic carbenes and their orientation on gold surfaces. **G. Kaur**, N.L. Dominique, G. Hu, P. Nalaoh, R. Thimes, S.S. Strausser, L. Jensen, J.P. Camden, D.M. Jenkins

9:20 Intermission.

9:30 . From mono- and bimetallic polymerized N-heterocyclic carbenes to stable and catalytically active metal nanoparticles. **A. Nazemi**

10:00 . Polymer carbenes on metal nanoparticles: new ligands to promote CO_2 electroreduction. **J. He**

10:30 . N-heterocyclic carbene boranes: Dual reagents for the synthesis of gold nanoparticles. **S. Ba sowid**, L. Hippolyte, O. Sadek, A. Porcheron, N. Bridonneau, S. Blanchard, M. Desage El Murr, D. Gatineau, Y. Gimbert, D. Mercier, p. MARCUS, C. Chauvier, C. Chanéac, F. Ribot, L. Fensterbank

10:50 Intermission.

11:00 . N-Heterocyclic carbene assemblies on metal and oxidized copper surfaces. **J. Navarro**, M. Das, S. Tosoni, F. Landwehr, M. Koy, J.P. Bruce, M. Heyde, G. Pacchioni, F. Glorius, B. Roldan Cuenya

11:30 . Combining mass spectrometry, electrochemistry, and surface vibrational spectroscopy to elucidate the structure and bonding of N-heterocyclic carbene monolayers on gold. **J.P. Camden**

Virtual Only
Virtual Session

Nanomaterials

J. A. Hollingsworth, S. Hunyadi Murph, C. M. Sims, D. L. Watkins, *Organizers*

R. Nagarajan, *Organizer, Presiding*

10:00 . Dendritic self-assembled structures from therapeutic charged pentapeptides. **L. Resina**, K. El Hauadi, D. Zanuy, T. Esteves, F.C. Ferreira, M.M. Pérez-Madrigal, C. Aleman

10:20 . Dual role of dendronized gold nanoparticles as catalyst and core of gold Nanorattles. **T. Baradaran Kayyal**, M. Daniel

10:40 . Dual-template strategies application in the dry-gel method for beta zeolite synthesis. A. Omirzakova , **D. Seitova**, Z. Rymzhanova, G. Vassilina

11:00 . Cerium-based nanoparticles doped with neodymium: Machine learning validation and evaluation of their antibacterial, anticancer, and antioxidant applications. **J. Mejía-Méndez**, O. Ceballos-Sanchez, D. Navarro-Lopez, E. Sanchez-Arreola, G. Sanchez-Ante, A. Sanchez-Martinez, K. Juarez-Moreno, N. Tiwari, E. Lopez-Mena

11:20 . ZnO-NPs doped with lanthanum and samarium: Study of their effect against oxidative stress and cancer, and its validation using machine learning. **J. Mejía-Méndez**, D. Navarro-Lopez, A. Sanchez-Martinez, O. Ceballos-Sanchez, G. Sanchez-Ante, E. Sanchez-Arreola, K. Juarez-Moreno, N. Tiwari, E. Lopez-Mena

Fundamental Understanding of the Structure and Reactivity at Mineral Water Interfaces

Sponsored by GEOC, Cosponsored by COLL, ENVR and PHYS

TUESDAY AFTERNOON

Ernest N. Morial Convention Center
Room 231

ACS Award Lectures 2023

D. Miller, *Organizer*

L. Zarzar, *Organizer, Presiding*

2:00 Introductory Remarks.

2:10 . Award Address (ACS Award in Colloid Chemistry sponsored by the ColgatePalmolive Company). Appreciating the complexity of complex fluid formulations: Direct and indirect synergistic effects in multicomponent systems. **R.D. Tilton**

3:10 . Interfacing colloidal nanomaterials with biological and non-biological systems and implications in sensor design. **H.M. Mattoussi**

Ernest N. Morial Convention Center
Room 252

Active and Responsive Matter

B. Bharti, *Organizer*

N. Pesika, *Organizer, Presiding*

2:00 . Far-from-equilibrium topological defects on active nematic colloids. **K.J. Stebe**, Q. Zhang, M. Rajabi

2:40 . Magnetic control of non-magnetic worm dynamics. **A. Al Harraq**, H. Gauri, M. Feng, Q. Sun, B. Bharti

3:00 . Micro-ellipsoids for cargo transport and autonomous navigation. **H.M. Gauri**, B. Bharti

3:20 . Autonomously motile “moonwalking” microbeads with internalized anisotropic magnetic assemblies. **A. Basu**, E. Buchsbaum, O.D. Velev

3:40 . Particle size can influence the lubrication mechanism of a dilute colloidal lubricating system. **S. Solomon**, V.T. John, N. Pesika

4:00 . Dynamics of active nanoparticles in 3D heterogeneous porous media. **A. Shi**, D.K. Schwartz

Ernest N. Morial Convention Center
Room 239

2024 ACS National Award in Surface Chemistry - Symposium in Honor of Hedi Mattoussi

D. Miller, C. Wirth, *Organizers*

W. J. Parak, *Presiding*

2:00 . Experimental approaches towards mapping the protein corona around endocytosed nanoparticles. **W.J. Parak**, N. Feliu Torres

2:30 . Strategies for antifouling surfaces. **J.B. Schlenoff**, J. Akintola

3:00 . Studying the impact of surface chemistry on nanoparticle circulation and biodistribution with *in vivo* SWIR imaging. **A.M. Dennis**

3:30 . Directed evolution of artificial repeat proteins for bionanomaterial science: Protein origami and nanocrystal growth directors. **E. DUJARDIN**

4:00 . Quantum dots and gold nanoparticles grafted with dithiolane ligands and their applications in disease sensing, drug screening and cell signaling. **E. Oh**, K. Susumu, O.K. Nag, J. Delehanty

4:30 . Multifunctional nanohybrids for biomedical applications. **D. Ma**

Ernest N. Morial Convention Center
Hall B, Room 10

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

A. N. Parikh, *Organizer, Presiding*

2:00 . Establishing molecular design rules for engineered liposomes with sterol conjugated lipids. **T. Kumarage**, W. Borden, M. Ziu, A. Habibi, J. Nghyen, H. Scott, J. Katsaras, R. Ashkar

2:30 . Host defense at biological membranes: Investigating synergistic effects based on the antimicrobial peptide piscidin. **M. Cotten**, E. Mihailescu, A. Zourou, F. Liu, R. Miceli, A. Greenwood, R. Fu, R.A. Gross, S. Gross

3:00 . Self-assembling peptide nanopores are stabilized by a cooperative hydrogen-bond network. A. Bondar, K.A. Hristova, **W.C. Wimley**

3:30 . Impact of amphiphilic co-solvents on cellular membrane organization and its implications for biofuel production. L. Tan, M. Smith, S. Pingali, H.M. O'Neill, J. Katsaras, J. Smith, B.H. Davison, J. Elkins, **J.D. Nickels**

4:00 . Using giant vesicles to decipher the effects of intracellular noise and membrane binding on cellular circadian rhythms. **A. Subramaniam**

4:30 . Membrane bending and interleaflet coupling induced by intrinsic-area asymmetry. L. Hua, M. Krompers, **H. Heerklotz**

5:00 . Automated small sngle scattering interpretation via machine learning morphology classification and structural parameter regression. **G. Roberts**, M. Nieh, A. Ma, Q. Yang

Ernest N. Morial Convention Center
Room 232

Colloidal Nanoparticles Synthesis and Assembly

Biofunctionalization and Biomedical Uses of Colloids

D. Huber, T. Li, Y. Sun, D. Ye, *Organizers*

H. Fan, *Organizer, Presiding*

2:00 . Streamlining materials design and device performance via massively parallel and mask-free micro- and nanofabrication. **K. Justus**, J. Magoline, A. Ivankin

2:30 . Transforming nanofabrication tools into massively parallel synthesis capabilities. **C.A. Mirkin**

3:00 . Biomaterials for delivering on the promise of immunotherapy. **N. Artzi**

3:30 . Lipid nanoparticle compositions and fate in protein solutions and nanoparticle uptake into cells in microgels. **G.C. Walker**

4:00 Intermission.

4:10 . Nano porphyrins: Killing bacteria, viruses, and odor. **T. Webster**, E. Walsey

4:40 . Kinetic control in the assembly of lipid and polymeric nanoparticles. **y. liu**

5:10 . Enhanced fluorescence detection with Ultraplasmonic fluoro-supraparticles. G. Cruz, **L. Stanciu**

Ernest N. Morial Convention Center
Room 240

PUNC: Nanomaterials Research at Primarily Undergraduate Institutions

J. G. Clar, S. Hughes, A. M. Munro, A. K. Sharma, *Organizers*

M. Machado, L. B. Thompson, *Presiding*

2:00 . Analysis of carbon quantum dots synthesized from water-soluble thiols and polycarboxylic acids. R.E. Nemcek, **D.T. Miles**

2:20 . Role of alkali metal counterions on size of para-mercaptobenzoic acid capped gold clusters. **C.L. Heinecke**, E.H. June, E.M. Ward-Dones, N.F. Cheema, S.G. McMahon

2:40 . Emulsion formation with semiconducting vinyl polymer to encapsulate dyes in polymeric nanoparticles. **D. Ghosh**

3:00 Intermission.

3:20 . Impact of tylosin tartrate on the environmental behavior of polystyrene nanoplastics. **A.C. Mensch**, A. DiFelice, A. Silver, E. Good

3:40 . Elucidating and mitigating instabilities of poly(vinyl alcohol) thin films via glutaraldehyde crosslinking. **W. Chen**

4:00 . Using machine learning to quantifying physical hole defects in β_{12}-borophene. A. Truong, A. Tsuyuki, A. Penilla, T. Le, E. Nguyen, **M. Groves**

4:20 Discussion.

Ernest N. Morial Convention Center
Hall B, Room 11

Colloidal and Soft Metameterials

Polymeric and Liquid-Crystalline Metamaterials

J. Palomba, E. Runnerstrom, *Organizers*

M. Griep, *Presiding*

2:00 . Functional dynamic polymer networks based on periodically placed non-covalent dynamic bonds. **Z. Bao**

2:30 . Stealth and Universal surfactants enabled by architecture. **T.P. Russell**, Z. Chen, H. Seong, M. Hu, X. Gan, J. Ju, H. Wang, T. Emrick

3:00 . Hierarchical helical structure of cholesteric liquid crystals enabled localized optical/mechanical control with nanoscale precision. **X. Li**, T. pawale

3:30 . Understanding the influence of polymer mechanical properties on mechanochromic behavior of cholesteric liquid crystals. **T. Lawton**, A. Nguyen, H. Childs, M. Salter, A. Filippas, B. McInnes, K. Senecal, P. D'Angelo, W. Zukas, T. Alexander, V. Ayotte, H. Zhao, C. Tang

4:00 Intermission.

4:30 . Condensed droplet polymerization for the facile synthesis of polymer nano-domes. **R. Yang**

5:00 . Control of multi-way chemical interactions for solids dispersal in polymer thin films and impact on composite materials properties. **T.P. Pearl**, M. Varady, C. Thompson, B.A. Mantooth, G.W. Peterson

5:30 . Tailored phase behavior of monodisperse, sequence-defined liquid crystalline polymers. C. Chan, E. Ostermann, **E. Davidson**

Bio-Based Colloids in Multi-Phase Systems

Nanocellulose, Nanochitin, and Nanochitosan

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

Bio-Based Colloids in Multi-Phase Systems

Nanocellulose, Nanochitin, and Nanochitosan

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

State of the Art in Protein-Based Engineered Materials

Protein-based Materials Engineering

Sponsored by CELL, Cosponsored by AGFD, COLL and PMSE

Fundamental Understanding of the Structure and Reactivity at Mineral Water Interfaces

Sponsored by GEOC, Cosponsored by COLL, ENVR and PHYS

WEDNESDAY MORNING

Ernest N. Morial Convention Center
Room 239

Active and Responsive Matter

B. Bharti, N. Pesika, *Organizers*

A. Al Harraq, *Presiding*

8:00 . Cooperative chiral dynamics of materials: From surface twisting to disassembly-induced spinning. **P. Kral**

8:20 . Thermal-responsive nanocrystals superlattice from increased mobility of NCS with lubricating ligands. **S. Yang**, N. Yifan, D. Yang, Y. Cai, Y. Zhang, C.R. Kagan, J.G. Saven, C.B. Murray

8:40 . Soft micro-motors with programmable motion enabled by stimulus shape reconfiguration. X. Zhao, H. Wamg, X. Chen, **C. Ye**

9:00 . Fluctuation-enhanced Nanoswimmer transport in a porous environment. **I.J. Wyllie**, A. Shi, D.K. Schwartz

9:20 . Rapid chemotactic identification and separation of target proteins for drug discovery. **A. Sapre**

9:40 . Seal and heal: Next generation electroadhesive gels for suture-less tissue repairs. **M. Nader**, U. Kokilepersaud, L. Borden, S.R. Raghavan

Ernest N. Morial Convention Center
Room 252

Characterization and Applications of the Nano-Bio Interface

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

N. C. Fitzkee, *Presiding*

8:00 . Withdrawn

8:20 . Advancing evidence-based interpretation in optical spectroscopy for nanomaterials. **D. Zhang**

8:40 . Multicomponent system of single-walled carbon nanotubes functionalized with a melanin-inspired material for optical detection and scavenging of metals. **G. Bisker**

9:00 . Protein adsorption on polystyrene surfaces: The adsorbotope model. **N.C. Fitzkee**, R. Somarathne, d.L. amarasekara, H.A. Robertson, R.S. Mayatt

9:20 . Advanced characterization of the wetting properties and stability of superhydrophobic surfaces. **M. Beitollahpoor**, M. Farzam, N. Pesika

9:40 . Surface modifications of Ti3C2 MXene nanosheets and thin films enable tuning their antibacterial activity. **S. Sengupta**, S.B. Ambade, L.E. Posada Escobar, H. Fairbrother, Z. Rosenzweig

10:00 . Does size really matter? A comparative exploration of how shape and size affect the toxicity of Hybrid-lipid coated silver nanoparticles. **C. Nieves Lira**, A. Carpenter, P. Nguyen, S. Harper, M.R. Mackiewicz, B. Harper, J. Baio

Ernest N. Morial Convention Center
Room 231

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, Z. Niroobakhsh, *Organizers*

M. Ilies, *Presiding*

8:00 . Characterization of lipid-based natamycin nanocarriers for ophthalmic drug delivery. **L. Talarico**, I. Clemente, S. Pepi, A. Gennari, G. Leone, C. Bonechi, M. Consumi, A. Magnani

8:20 . Development of long-acting injectable solid drug nanoparticle formulations of investigational antiretroviral therapeutics. **J.J. Hobson**, C. Unsworth, J. Massam, A. Djemai, T. Riley, M. Johnson, A. Owen, S.P. Rannard

8:40 . Development of a long-acting injectable formulation for the treatment of hepatitis C. **A.C. Savage**, A.B. Dwyer, C. Unsworth, J. Massam, J.J. Hobson, J. Sharp, E. Kijak, E. Gallardo-Toledo, C. Bramwell, M. Neary, U. Arshad, P. Curley, L. Tatham, D.L. Thomas, A. Owen, S. Rannard

9:00 . Application of solid drug nanoparticles of niclosamide and nitazoxanide to inhalation delivery through vibrating mesh nebulisation. **C. Unsworth**, A.B. Dwyer, A.C. Savage, J.J. Hobson, T.O. McDonald, P. Curley, A. Owen, A. O'Sullivan, R. MacLoughlin, S.P. Rannard

9:20 . Solid injectables made using solid drug nanoparticles: From proof of concept to *in vivo* studies. **E. Barlow**, J.J. Hobson, A.B. Dwyer, J. Massam, J. Sharp, M. Neary, J. Herriott, E. Kijak, E. Gallardo-Toledo, P. Curley, U. Arshad, H. Cox, A. Owen, S.P. Rannard

9:40 . Preparation of nanogels from natural compound hematoxylin and l-lysine and their biomedical applications. **M. Sahiner**, A.K. Sunol, **N. Sahiner**

10:00 . Phospholipase A2-mediated degradation of amphiphilic POPC-based self-assemblies. S.A. Khan, **M.A. Ilies**

10:20 . Biopolymers as a green alternative for preventing bubble attachment in flotation process. **P. Pawliszak**, A. Beheshti, A. Moeller, M. Krasowska, D. Beattie

10:40 . Mechanisms of nanobubbles interactions with biological macromolecules. **M. Colic**

11:00 . Effect of operational parameters on photocatalytic degradation of ibuprofen pharmaceutical using coconut shell activated carbon doped ZnO nanocomposites. **A.O. Dada**, U. Pal

Ernest N. Morial Convention Center
Room 232

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

M. Nieh, *Organizer, Presiding*

8:00 . Perfluorooctanoic acid affinity for model biological membranes and its consequences. **T.N. Sobolewski**, R. Trousdale, J.E. Hemphill, R.A. Walker

8:30 . Defining the preferred local lipid environments of membrane proteins using synthetic amphipathic copolymers. **L.M. Real Hernandez**, I. Levental

9:00 . Electromechanical response and memcapacitive properties of biomembranes under oscillatory electrical perturbation. **J. Carrillo**, D. Bolmatov, M. Lavrentovich

9:30 . Electrotonic potentials couple short-term and long-term potentiation in lipid bilayer memristors and memcapacitors. **C.P. Collier**, J. Katsaras

10:00 . Lipid composition as a source of in-plane cooperativity for peripheral membrane-binding proteins. **D. Kerr**, T. Suwatthee, S. Maltseva, M. Turke, K.C. Lee

10:30 . Electrostatic and steric interactions of polyethylene glycol grafted lipids synergistically promote the assembly of giant vesicles. **A. Cooper**, A.B. Subramaniam

11:00 . Liquids and solids in clathrin mediated endocytosis. **B. Malady**, G. LeBrun, E. Lafer, L. Wang, D. Owen, J. Stachowiak

Ernest N. Morial Convention Center
Room 240

Colloidal and Soft Metameterials

Colloidal and Soft Metamaterials for Optics

J. Palomba, *Organizer*

E. Runnerstrom, *Organizer, Presiding*

8:00 . Highly ordered optically active eutectic mesostructures via template-directed solidification. **P.V. Braun**

8:30 . Mid-infrared spectroscopic and Ellipsometric analysis of hierarchically doped ITO nanocrystal metamaterials. **A. Cleri**, K. Kim, Z. Sherman, W. Chang, J. Maria, T. Truskett, D.J. Milliron

9:00 . Multi-stable elastic pixels for non-volatile memory in reconfigurable metamaterials. **K.J. Stebe**, J. Edziah, N. Engheta

9:30 Intermission.

10:00 . Protein assembly in abiotic environments: towards structural color changing materials. **J. Uzarski**, K. Ngo, J. Palomba, A. Mathew, M. Gordon, D. Morse

10:30 . Room-temperature quantum coherence in icosahedral virus particles. **B. Dragnea**

11:00 . Block copolymer-directed assembly of spherical nanoparticle lattices. **S. Copp**

Ernest N. Morial Convention Center
Room 242

Colloidal Nanoparticles Synthesis and Assembly

Synthesis and Assembly of Nanoparticles

H. Fan, D. Huber, Y. Sun, D. Ye, *Organizers*

T. Li, *Organizer, Presiding*

8:00 . Acceleration of near-IR emission through efficient surface passivation in Cd_3P_2 quantum dots. L. Smith, N. Tiwari, A. Halim, K.E. Harbison, B. Diroll, **I. Fedin**

8:20 . Faceted nanoparticle self-assembly at fluid-fluid interfaces: Precision control of orientation and novel superstructure formation. **Y. Zhou**, T. Tang, Q. Yang, Y. Wang, R. Basak, A. Frano, A.R. Tao, G. Arya

8:40 . Machine design assisted design of effective potentials, surface ligand patterns, and annealing protocols for colloidal self-assembly. Y. Zhou, P. Lin, S. Callioglu, S. Bore, S. Ren, Y. Yang, A.R. Tao, L. Collins, F. Paesani, Y. Ke, S. Zauscher, **G. Arya**

9:00 . Metal nanocrystals in photonic crystals as hybrid optical materials. **W. Li**, S. Yang, C.B. Murray

9:20 . Analytical methodology to determine lattice plane orientations of anisotropic 2D materials. **T. Adel**, M. Munoz, T. Mai, C. Stokes, A.R. Hight Walker

9:40 . General synthesis of rare earth oxide nanocluster superstructures via high temperature surface ligand switching. **G. Johnson**, C. Liu, S. Zhang

10:00 Intermission.

10:10 . Formation mechanism and population balance model for the formation of silver-gold alloy nanoparticles. **N.E. Traore**, T. Schikarski, P. Cardenas, J. Walter, L. Pflug, W. Perkert

10:30 . Quadrupole field chirality in magnets to assemble molecules and materials into chiral superstructures. **Z. Li**

10:50 . Synthesis and self-assembly of patchy au tetrahedra. **X. Lin**, C. Kim, T. Waltmann, H. Liu, J. Lu, S.C. Glotzer, N. Kotov, Q. Chen

11:10 . Tunability of nanoparticle size and shape in food-waste derived green chemical synthesis. **B. Yust**, N.Z. Rao, C. Duong

11:30 . Bioinspired synthesis and assembly of nanoparticles through peptoid-based approaches. **C. Chen**

Ernest N. Morial Convention Center
Room 253

Mechanochemistry in Colloid and Surface Chemistry

A. B. Altman, J. Batteas, I. Speight, *Organizers*

A. Martini, *Organizer, Presiding*

8:00 Introductory remarks.

8:10 . Putting the squeeze on the Sonogashira: Development of a mechanochemical Sonogashira for scale-up. **I.R. Speight**, R.H. Hastings, M. Mokhtar, A. Ruggles, C. Schmidt, D. Bourdeau, M.C. Haibach, H. Geneste, J.E. Mack, S.S. Co

8:45 . *In situ* monitoring of mechanochemical reaction kinetics in ball mills using Raman spectroscopy. **S. Pagola**, M. Masso

9:20 . Cocrystallization and polymorph control of pharmaceuticals facilitated by mechanochemistry. **K.M. Hutchins**

9:55 Intermission.

10:15 . Force-induced selectivity of classical organic reactions. R.W. Kwok, M.A. Shlain, M. Patel, A.B. Braunschweig, **M. Marianski**

10:45 . Catalytic mechanopolymerization. **T.L. Nelson**, T. Nirmani, M. Ebqa'ai

11:20 . Award Address (ACS Award for Affordable Green Chemistry Chemistry supported by an endowed fund established by Rohm and Haas).Application of Resonany Acoustic Mixing in the production of pharmaceutically relevant cocrystals. **K. Nagapudi**

Bio-Based Colloids in Multi-Phase Systems

Bio-based Multi-phase Systems and Their Applications

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

Bio-Based Colloids in Multi-Phase Systems

Bio-based Multi-phase Systems and Their Applications

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

Geochemistry for Co2 Capture, Conversion, and Long-Term Storage

Sponsored by GEOC, Cosponsored by COLL, ENVR, I&EC and INOR

State of the Art in Protein-Based Engineered Materials

Protein Waste Revalorisation for Sustainable Materials

Sponsored by CELL, Cosponsored by AGFD, COLL and PMSE

WEDNESDAY AFTERNOON

Ernest N. Morial Convention Center
Room 239

Active and Responsive Matter

B. Bharti, N. Pesika, *Organizers*

A. Al Harraq, *Presiding*

2:00 . Multicompartment capsules (MCCs): Mimicking cellular architecture through ‘smart’ and responsive compartments. **F.A. Burni**, S. Ahn, S.R. Raghavan

2:20 . Synthesis of salt-responsive, ultra-stable patchy nanoparticles via surface-grafting of polycationic poly(glycidyl-methacrylate) brushes with in-situ surface probing. **B. Aldakkan**, N. Chalmpes, M. Hammami, M. Kanj, E.P. Giannelis

2:40 . Metal–organic framework fluorescent and colorimetric dual-signal readout platform for the detection of a genetic sequence from the SARS-CoV-2 genome. **J.C. Hadynski**, M. Wriedt

3:00 . Enhancing degradability of dual-responsive nanogels through *t*-butyl methacrylate incorporation. **D. Gray**, T.O. McDonald

3:20 . Structural control of plasmon resonance in molecularly linked metal oxide nanocrystal gel assemblies. **J. Kang**, Z. Sherman, D. Conrad, E.V. Anslyn, T. Truskett, D.J. Milliron

Ernest N. Morial Convention Center
Room 252

Characterization and Applications of the Nano-Bio Interface

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

M. Mutas, *Presiding*

2:00 . Precision control of nanoparticle behavior with engineered biomimetic protein coronas. **T. Shaikh**, d.L. amarasekara, K. Hulugalla, R.S. Mayatt, T. Werfel, N.C. Fitzkee

2:20 . Probing the thermodynamics of the nanoparticle-protein corona using a host-guest framework. **C.S. Kariyawasam**, A. Aborode, T.L. Sousa, N.C. Fitzkee

2:40 . Role of protein folding in prenucleation clusters on the activity of Enzyme@Metal-Organic Frameworks. **B.B. Rose**, B.P. Carpenter, E.M. Olivas, M. Navarro, R. Talosig, P. Hurst, G. Di Palma, L. Xing, R. GUHA, J.P. Patterson, S.M. Copp

3:00 . Highly fluorescent nanoplatforms for specific cell targeting. **M. Holzapfel**, M. Mutas, S. Kerpa, W. Maison, N. Feliu Torres

3:20 . Water-soluble fluorine-rich polymers as enhanced ^{19}F-based MRI contrast agents. **J. Procida**, N. Arabzadeh, H.M. Mattoussi

3:40 . Human serum albumin conjugated gold nanoparticles based drug delivery systems of ferulic acid and sinapic acid. **A. ANJALI**, N. Kishore

4:00 . Preparation of organosilane and protein nanopatterns using immersion colloidal lithography. **A.R. Walker**, Q. Do, J.C. Garno

Ernest N. Morial Convention Center
Room 231

Basic Research in Colloids, Surfactants, and Interfaces

S. Hunyadi Murph, A. Mallia, U. Natarajan, Z. Niroobakhsh, *Organizers*

J. Franck, *Presiding*

2:00 . Silica-coated micrometer-sized latex particles. **O. Norvilaite**, S.P. Armes

2:20 . Characterization of surface coated aluminas using low-field NMR solvent relaxation and HSP. **D. Fairhurst**, R. Sharma, J. Ikeda

2:40 . Utilizing colloid-thin film model surfaces to elucidate chemical processes at interfaces. **Y. Mueanngern**, W. Li, S. Anantachaisophon, T. Vachiraanun, W. Promchaisri, P. Sangsawang, P. Tanalikhit, S. Ittisanronnachai, T. Atithep, P. Sanguanchua, A. Ratanasangsathien, M. Jirapunyawong, S. Suntiworapong, S. Warintaraporn, M. Spelic, C. Li, J. Jinschek, J. Graham, N. Pimental, L. Baker, Y. Khalifa

3:00 . Nanopatterns of tetraphenyl porphyrin bound covalently by reaction with tin tetrachloride investigated with Atomic Force Microscopy. **Q. Do**, J.C. Garno

3:20 . Population balance modeling of InP nucleation and growth: towards rational quantum dot optimization. **Z. Wang**, N. Traore, T. Schikarski, W. Perkert, L. Pflug, D. Segets

3:40 Intermission.

3:55 . Stability and surface interactions in binary colloids: A study of Au nanoparticles and ZnS quantum dots. **A. Rezvani**, O. Anwar, D. Segets

4:15 . 2D-classification of core-shell quantum dots via selective agglomeration. **A. Rezvani**, Z. Wang, D. Segets

4:35 . Graphene oxide and its derivatives as adsorbents for PFOA molecules. **X. Wang**, R. Qiao

4:55 . Determining the hydrophilicity of porous media using dielectric spectroscopy and Hansen solubility parameters. **A. AlShuaibi**, E.P. Giannelis

5:15 . Magnetic resonance toolbox to interrogate diffusion at multiple length-scales. **J. Franck**

5:35 . Mechanism and mitigation of irreversible material loss within gel-based single-walled carbon nanotube purification schemes. B.P. Watts, C. Rolsma, M. Dolan, **K.C. Tvrdy**

Ernest N. Morial Convention Center
Room 232

Biomembrane Synthesis, Structure, Mechanics, and Dynamics

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

J. Katsaras, *Organizer, Presiding*

2:00 . Perfluorooctanoic acid fluidizes membranes and enhances bioconcentration. **R.C. Trousdale**, T.N. Sobolewski, R.A. Walker

2:30 . Withdrawn

3:00 . Characterizing the regulatory roles of biomembranes in two-dimensional protein condensation phase transitions. **S. Sun**, Y. Miao, J.T. Groves

3:30 . Understanding how membranes behave under biochemical stress using bioinspired synthetic lipids. **E.C. Izgu**

4:00 . Determining the minimum physical requirements for actin bundling by liquid-like protein condensates. **C. Walker**, K. Graham, A. Torres, L. Wang, E. Lafer, A. Chandrasekaran, P. Rangamani, J. Stachowiak

4:30 . Scalable methodology to assemble larger numbers of cell-mimetic giant vesicles in physiological conditions. **V. Vijayananda**, A.B. Subramaniam

Ernest N. Morial Convention Center
Room 240

Colloidal and Soft Metameterials

Bio-inspired, Dynamic, Multi-functional, and Active Matter-based Metamaterials

J. Palomba, *Organizer*

E. Runnerstrom, *Organizer, Presiding*

2:00 . Using cephalopods as inspiration for adaptive capsules and coatings. **L. Deravi**

2:30 . Biomolecules and biomolecular circuits for directing hierarchical soft material assembly and deformation. **R. Schulman**

3:00 . Magnetically actuated metamaterials for tunable mechanical, acoustic, and electromagnetic properties. **R. Zhao**

3:30 Intermission.

4:00 . Electric field-induced non-reciprocal interactions, assembly, and reconfiguration in mixtures of active and passive colloids. **R. Patel**, A. Al Harraq, J. Chun, B. Bharti

4:20 . In-situ control over short-range attraction and long-range repulsion using magnetic fields. **H.M. Gauri**, B. Bharti

4:40 . Cell-like capsules with smart compartments: ability to switch on fluorescence, chemiluminescence, and color. **S.R. Raghavan**

5:10 . Unveiling the shape morphing of hierarchical responsive microfiber-networks. **A. Sitt**

Ernest N. Morial Convention Center
Room 242

Colloidal Nanoparticles Synthesis and Assembly

Synthesis and Assembly of Nanoparticles

H. Fan, D. Huber, T. Li, D. Ye, *Organizers*

Y. Sun, *Organizer, Presiding*

2:00 . Asymmetric nanoparticle oxidation observed in-situ by the evolution of diffraction contrast. A. Poerwoprajitno, N. Baradwaj, M. Singh, C. Carter, D. Huber, R. Kalia, **J. Watt**

2:20 . Withdrawn

2:40 . Parametric approach to unravelling the bifunctionality of capping agents in bimetallic nanoparticle syntheses. **J.K. Mathiesen**, H. Ashberry, R. Pokratath, J.T. Gamler, B. Wang, A. Kirsch, E. Kjær, S. Banerjee, J. De Roo, K. Jensen, S.E. Skrabalak

3:00 . SA-XPCS at APS-U: Steering self-assembly and phase transitions in colloidal and polymer systems. **Q. Zhang**, E. Dufresne, S. Narayanan

3:20 . Wetting considerations in supported bimetallic PdAu nanoparticle catalyst synthesis. **K. Lim**, S.K. Kaiser, C.J. Owen, T. Kim, P. Routh, J.D. Lee, K. Park, C. O'Connor, N. Marcella, S. Garg, J. Gardener, M. Bijl, M. Aizenberg, C. Reece, A. Frenkel, B. Kozinsky, J. Aizenberg

3:40 . Approaches to colloidal synthesis of plasmonic magnesium nanoparticles. **V. LOMONOSOV**, L. Torrente Murciano, E. Ringe

4:00 Intermission.

4:10 . Formation and removal of monometallic and bimetallic nanoparticles from silicon substrates into colloidal solutions and their structural and optical properties. **Y. Shi**, S.N. Bonvicini, L.Q. Ly

4:30 . Synthesis of patchy nanoparticles by atomic stencils for scaled-up self-assembly. **C. Kim**, A. Kim, E. Kim, W. Cheng, L. Yao, Y. Liu, E. Yang, X. Lin, C. Hwang, T. Vo, X. Mao, K. Fichthorn, Q. Chen

4:50 . Continuous production of the precursors for the synthesis of near-infrared II Ag_2Se quantum dots with acid resistance. **A. Liu**, L. Yang, D. Pang

5:10 . Macroscopic surface-patterned nanoparticle array via DNA programmed self-assembly. **F. Teng**, H. Zhang, D. Nykypanchuk, O. Gang

5:30 . Topotacitical Reordring of dry NCSLS solid with lubricating ligands. **S. Yang**, Y. NING, D. Yang, R. Li, Y. Zhang, C.R. Kagan, J.G. Saven, C.B. Murray

Ernest N. Morial Convention Center
Room 253

Mechanochemistry in Colloid and Surface Chemistry

J. Batteas, A. Martini, I. Speight, *Organizers*

A. B. Altman, *Organizer, Presiding*

2:00 Introductory remarks.

2:05 . Activation volume in mechanochemistry: what it means and how to calculate it. **W.T. Tysoe**

2:40 . Understanding pressure effects on the electronic properties of new structural phases in low-valent lanthanide compounds. **E. Oyeka**, R. O'Shea, A.B. Altman

3:10 . Theoretical prediction of mechanochemical molecular motion on curved graphene. **A.M. Rappe**, S. Banerjee

3:40 Intermisson.

3:55 . Mechanical diversity of NCSLS at different level of interdigitation in ligand shells. **S. Yang**, D. Yang, K. Wang, Y. NING, H. Jia, S. Yang, J.G. Saven, C.B. Murray

4:25 . Mapping the structural diversity of copper oxygen centers with high-pressure precision mechanochemistry. **H. Yan**

5:00 . Mechanochemical syntheses of mosaic halide perovskites. **H. Karunadasa**, J. Li

Virtual Only
Virtual Session

Virtual Graduate Students Symposium in Asia-Pacific Region on Biomaterials & Biointerfaces

C. Chen, D. Ding, C. Zheng, *Organizers, Presiding*

7:30 Introductory Remarks.

7:35 . NCP/polymer nano-hybrids for effective cGAS-STING activation and cancer immunotherapy. **X. Cao**, Y. Liu

7:50 . TGR5 activation and real-time tracking enabled by non-absorbable drug-grafted carriers. **Y. Zhang**, Y. Wang, Y. Gan

8:05 . Iron-mediated cancer therapy promoted by hyperthermia. **M. Zha**, K. Li

8:20 . Inorganic biomaterials promote innervated tissue regeneration. **H. Zhang**

8:35 . Tumor microenvironment responsive infinite coordination polymer-engineered nanomedicines for dual-ion interference therapy. **J. Yao**, A. Wu

8:50 . Transformable supramolecular self-assembled peptides for ferroptosis primed cancer immunotherapy. **D. Jiao**, H. Wang, D. Ding

9:05 . Design and biomedical applications of molybdenum disulfide nanoenzymes. **L. Wang**

9:20 . Construction of nanomedicines for activation of the STING pathway and application to chemoimmunotherapy. **L. Zhang**, H. Xiao

9:35 . Lung cancer shapes commensal bacteria via exosome-like nanoparticles. **J. Mei**, J. Jiang, C. Chen, Y. Liu

9:50 . Polypeptide nanoplatforms with *in situ* regulatory capability to metal elements for tumor therapy. **J. Yang**

10:05 . Peptide-conjugated probe with cleavage-induced morphological change for treatment on tumor cell membrane. **W. Zhang**, X. Lou

10:20 . Enhanced immunotherapy via lipid nanoparticle-delivered CRISPR/Cas9 gene editing in dendritic cells. **K. Mao**, Y. Yang, T. Sun

10:35 . Precisely translating computed tomography diagnosis accuracy into therapeutic intervention by a carbon-iodine conjugated polymer. **M. Yin**, X. Liu, Z. Lei, L. Luo

10:50 . Antibacterial polypeptide and polymersomes: Application in implant infection and diabetic wound. **D. Liu**, J. Du

11:05 . Development of biohybrid microparticles for the treatment of bacterial pneumonia. **F. Yang**

Geochemistry for Co2 Capture, Conversion, and Long-Term Storage

Sponsored by GEOC, Cosponsored by COLL, ENVR, I&EC and INOR

Bio-Based Colloids in Multi-Phase Systems

Novel Bio-based Materials and Novel Characterization Tools

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

Bio-Based Colloids in Multi-Phase Systems

Novel Bio-based Materials and Novel Characterization Tools

Sponsored by CELL, Cosponsored by COLL‡ and COMP‡

State of the Art in Protein-Based Engineered Materials

Silk/Protein Sequence Engineering for Tunning Materials Properties

Sponsored by CELL, Cosponsored by AGFD, COLL and PMSE

Fundamental Understanding of the Structure and Reactivity at Mineral Water Interfaces

Sponsored by GEOC, Cosponsored by COLL, ENVR and PHYS

Geochemistry for Co2 Capture, Conversion, and Long-Term Storage

Sponsored by GEOC, Cosponsored by COLL, ENVR, I&EC and INOR

THURSDAY MORNING

Ernest N. Morial Convention Center
Room 239

Characterization and Applications of the Nano-Bio Interface

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

M. Holzapfel, *Presiding*

8:00 . Examining fibroblast growth factor protein corona formation on $CuInS_2$/ZnS Quantum Dots with FRET and quenching. **C. Robinson**, B. Alexander, M. Mohale, P. Okoto, S.K. Thallapuranam, C.D. Heyes

8:20 . Non-destructive Nanostraw-based RNA extraction from living 3-dimensional samples for longitudinal analysis. **Y. Quek**, A. Tay, G. Adriani

8:40 . Chiral graphene quantum dots enhanced drug loading into exosomes. **Y. Wang**

9:00 . Detection of circulating tumor cells in prostate cancer using nanotechnology platforms. **M. Mutas**, M. Holzapfel, S. Werner, N. Feliu Torres, K. Pantel

9:20 . CytoViva imaging of human red blood cells interacting with antimicrobial nanosilver. **k. kaiser**, K.L. Wells, P. Alla, I. Murgulet, N.C. Adragna, I.E. Pavel

9:40 . Kinetics of adsorption of enzyme on nanoparticle surface. **K. Mishra**

10:00 . Uptake and intracellular fate of metal-organic-framework (MOF, ZIF-8) nanoparticles. **N. Feliu Torres**, W.J. Parak

Ernest N. Morial Convention Center
Room 252

Colloids and Interfaces for Bioelectrochemical Systems and Sensors

Cosponsored by ANYL

E. S. Andreescu, S. Martic, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 . Withdrawn

8:25 . Electrochemical aptamer-based detection of insulin resistance by homeostatic indexes (HOMA-IR) Empowered by Machine Learning. **M. Awan**, Z. Uygun, E.S. Andreescu

8:45 . Probing biomembrane interfaces with light and electricity at the single-molecule level in microelectrode cavity arrays. L. Van Ye, R.D. Michael, J.J. Meyer, E. Meyer, L.M. Keranen Burden, **D. Burden**

9:05 Intermission.

9:25 . Janus emulsion biosensor for inflammatory biomarkers. **M. Chen**, E. Corless, B. Engelward, T.M. Swager

9:45 . DFT + thermodynamics predictions of MXene surface termination in aqueous conditions and reactivity implications for Biomolecule adsorption. **J.L. Bjorklund**, S.E. Mason, S.B. Ambade

Ernest N. Morial Convention Center
Room 253

Development of Sustainable Materials Using Colloid and Surface Science

C. W. Nelson, *Organizer*

D. Dermody, R. Moglia, Y. Rao, W. Zhou, *Organizers, Presiding*

8:00 . Soft colloid-stabilized Pickering foams for sustainable products. **A. Jayaraman**, J. Vyorykka, D. Winram, M. Einsla, G.P. Abramo, A. Shaffer

8:20 . Adsorption of crude oil onto palm kernel activated carbon supported Iron nano composite (PKAC-Fe-NC). **A.O. Dada**, S. Olatunde, K.O. Ajanaku, F.A. Adekola

8:40 . Friction of methyl-branched fatty acids. R. Cui, **M. Ruths**

9:00 Intermission.

9:15 . Spray Deposition: Quantifying and reducing splashing and bouncing of droplets on leaf surface mimics. **C.W. Nelson**, M.P. Tate, H. Wiles, M. Crimmins, C.E. Mohler

9:35 . Zwitterionic functional materials: Eco-friendly solutions for optical applications. **V. ARJUNAN VASANTHA**

9:55 . Sorbent interactions that govern CO_2 adsorption in ZIF-based Type 3 porous liquids. **M. Hurlock**, M. Christian, J. Rimsza, T.M. Nenoff

Ernest N. Morial Convention Center
Room 242

Colloidal and Soft Metameterials

Bio-inspired, Dynamic, Multi-functional, and Active Matter-based Metamaterials

E. Runnerstrom, *Organizer*

J. Palomba, *Organizer, Presiding*

8:00 . Self-organization of active colloids induced by shape heterogeneity and broken axisymmetry. **W.E. Uspal**

8:30 . Magnetic Janus particles propulsion under external magnetic field. **A. Raghu**, B. Bharti

8:50 . Bioinspired tough and mechanically transformative materials. **B. Xu**, L. Gutierrez, Y. Wang

9:10 . Membrane organization, dynamics, and stability of polymer gel-supported lipid bilayer systems formed using droplet-assisted assembly technique. **K. Chuduang**, P. Pholraksa, C. Naumann

9:30 Intermission.

10:00 . Solid to fluid transitions and active reorganization in biological and bioengineered materials. **P. Katira**

10:30 . Programming the size-specific assembly of helical tubules from nanoscale building blocks. **W.B. Rogers**, T. Videbaek, D. Hayakawa

11:00 . Engineering confined fluids to autonomously assemble hierarchical 3D structures. **A. Balazs**

11:30 Concluding remarks.

Ernest N. Morial Convention Center
Room 244

Colloidal Semiconductor Nanocrystals (Including Perovskite Nanocrystals)

S. Jeong, G. Jia, X. Yang, *Organizers*

J. Macdonald, *Organizer, Presiding*

8:00 . Structure-property correlation and strong electronic cross-talk in low dimensional metal halide hybrids. **J. Kundu**

8:20 . Withdrawn

8:40 . Novel 2D/3D perovskite quantum dots with tunable blue emission. **S. Thomas**, **K. Andersen**, **S. Azzarello**

9:00 . Achieving metal doping of strongly confined halide perovskite nanocrystals under ambient conditions. **Z. VanOrman**, M. Cárdenes Wuttig, A.M. Reponen, S. Feldmann

9:20 . Withdrawn

9:40 . Plasmon-induced hot carrier excited state dynamics in plasmonic semiconductor nanocrystals. **J. Kuszynski**, C. Fabiano, E.T. Nguyen, K. Mao, A. Ahuja, R.D. Schaller, G.F. Strouse

10:00 . Novel emission characteristics in $CsPbBr_3$ quantum dots during liquid to solid state transition while doping with Mn^{2+}. **A. Wielgat**, K. Palas, Y. Luan

10:20 . Withdrawn

10:40 . Partial and complete anion exchange of colloidal ternary chalcogenides for optical tunability. **V.A. Kshirsagar**, T. Boggess, S. Creutz

11:00 . Strongly quantum-confined $CsPbBr_3$/$FAPbBr_3$ core-crown nanoplatelets for blue light emitting diodes. **A.S. Kshirsagar**, M. Gangishetty

11:20 . Cluster seeded doping of perovskite quantum dots. **L. Hidayatova**

Ernest N. Morial Convention Center
Room 231

Mechanochemistry in Colloid and Surface Chemistry

A. B. Altman, J. Batteas, A. Martini, *Organizers*

I. Speight, *Organizer, Presiding*

8:00 Introductory remarks.

8:05 . Unveiling novel synthetic pathway: parameter insights into isocyanate formation from thiocyanate salts. **S. Nasri**, C. Flores, R.R. Silva, J.E. Mack

8:35 . Stress-controlled mechanochemical reactor: A novel tool to determine which stress components drive mechanochemistry. **R. Carpick**, L. Fang, S. Korres, M. Webster

9:05 . Tuning the mechanochemical synthesis of Tolbutamide. K.R. Floyd, L. Gonnet, T. Friscic, **J. Batteas**

9:35 Intermission.

9:50 . Dynamical view of mechanochemical reactions. **A. Michalchuk**

10:25 . Mechanochemistry of repeated loading: Mechanical Fatigue in Microtubules. S.R. Nasrin, N.M. Bassir Kazeruni, J.B. Rodriguez, S. Tsitkov, A. Kakugo, **H. Hess**

10:55 . Accelerated aging as a solvent-free methodology to access biomass-based nanomaterials. **T. Jin**, E. Lam, A.H. Moores

11:25 . Pressure modulated monoxidation of C-H bonds by Dicopper-m-oxo complex. **N. Martell**, P. VanNatta, H. Yan

THURSDAY AFTERNOON

Virtual Only
Virtual Session

Virtual Graduate Students Symposium in Asia-Pacific Region on Biomaterials & Biointerfaces

C. Chen, *Organizer*

D. Ding, C. Zheng, *Organizers, Presiding*

Y. Liu, *Presiding*

7:30 Introductory Remarks.

7:35 . Oral programmed targeted delivery of siRNA by hierarchically editing Gram-positive bacterial membrane vesicles for synergistically enhanced cancer immunotherapy. **C. Liu**, C. Pan, Y. Gan

7:50 . Photo-triggered self-accelerated nanoplatforms for multifunctional imageguided combination cancer immunotherapy. **y. zhang**

8:05 . Neuropeptide-based nanoprobes for tumor diagnosis and treatment across the blood-brain barrier. **X. Duan**, X. He, A. Wu, J. Li, P. Zhang, B. Tang

8:20 . Liquid core nanoparticle with high deformability enables efficient penetration across biological barriers. **C. Wang**, J. Xiao, Y. Liu

8:35 . Single doping for triple functions: Integrated theranostic nanoplatforms for multimodal image-guided tumor therapy. **H. Wang**

8:50 . Multivalent complexes based on conformation-constrained nanobody for the inhibition of amyloid aggregation. **L. Zhao**, F. Meng, L. Luo

9:05 . Bioabsorbable zwitterionic hydrogels achieving excellent protein-repulsion and cell-adhesion. **Q. Sun**, K. Hong, L. Fan, X. Zhang, T. Wu, J. Du, Y. Zhu

9:20 . Surface modification-mediated adaptive evolution of bacteria. **k. xue**

9:35 . Reasonably designed host defense peptide mimetics combating multidrug-resistant cancers effectively without inducing drug resistance. **N. Shao**

9:50 . Pseudo semiconducting polymers for cancer therapy. **D. Tang**

10:05 . Pre-induced ICD membrane-coated carrier-free nanoparticles for the personalized lung cancer immunotherapy. **S. Li**, S. Jiang, Y. Liu

10:20 . Functional polymer-initiating biomineralization for tumor blockade therapy. **H. Li**, Y. Liu

10:35 . Intranasal multivalent epitope-based nanoparticle vaccine confers broad protection against divergent influenza viruses. **J. Pan**, **Z. CUI**

10:50 . DNA-based nanocarriers for the controlled delivery of CRISPR-Cas9 system. **N. Song**