COLL

DIVISION OF COLLOID AND SURFACE CHEMISTRY

D. Miller and R. Gupta, Program Chairs

MONDAY MORNING

The Westin DC Downtown
River Birch B

Mentoring Undergraduate Surface Science Research

From Surface to Structure: Nanoscale Journeys in Chemistry and Materials

G. Avila-Bront, E. V. Iski, G. Y. Stokes, Organizers
A. Baber, Organizer, Presiding

8:00 *Introductory Remarks.*

8:05 . *Colloid & surface chemistry for designing glass 3D printing building blocks.* ***J.F. Destino****, A. Kayton, A.R. Carr, R. Wayne, S. Luna, L. O'Keefe, S. Garapati, M. Schaefer, M.G. Wilson*

8:25 . *Withdrawn*

8:45 . *Utilizing optical diagnostics to explore mechanisms of the plasma-surface interface.* ***J.M. Blechle***

9:05 . *Lessons learned along the tenure path: Plasma modification research with (mostly) undergraduates.* ***M.J. Hawker***

9:25 . *Empowering undergraduates: Exploring unique nanoscale behavior on Au(111) using in air scanning tunneling microscopy (STM). D. Dodge, R. Dirks, L.F. Hornbrook, N. Hamidi,* ***E.V. Iski***

9:45 . *DFT investigations by undergraduate researchers of small molecule reactivity over heterogeneous catalysts. E. Euler, H. Frankovich, A. Baber,* ***K. Letchworth-Weaver***

The Westin DC Downtown
Potomac Salon 3

2025 ACS National Award in Colloid Chemistry: Symposium in Honor of Norman J. Wagner

R. Gupta, M. E. Helgeson, D. Miller, L. Walker, Organizers, Presiding

8:00 *Introductory Remarks.*

8:05 . *Flash nanoprecipitation: Covid vaccines to global health, and what is next?.* ***R.K. Prudhomme***

8:25 . *Obtaining the anisotropic interaction of proteins by measuring the generalized second virial coefficient.* ***Y. Liu****, H. Hatch, G. Yuan, V. Shen, A. Grishaev, M.A. Blanco*

8:45 . *Bringing whole-cell models to life: Colloidal physics instantiate living gains in function.* ***R.N. Zia****, V.S. Sivasankar, G. Roure, J.I. Glass, A.J. Maheshwari, A.M. Sunol, E. Gonzalez, T.S. Yang, J. Hofmann*

9:05 . *Programmable cellular remodeling of anisotropic hydrogels.* ***Y. Luo***

9:25 . *Heteroaggregates as vectors for impurities in protein bioprocessing. S.S. Bhoyar, M. Chien, S. Modla,* ***A.M. Lenhoff***

9:45 *Break.*

10:00 . *Novel class of thermoresponsive, self-assembling ion gels for non-invasive therapeutic delivery. A. Sahu, A.N. Hunter, E.E. Tanner,* ***M.A. Calabrese***

10:20 . *Microgels: Colloids for which the macromolecule-particle distinction fails.* ***W. Richtering***

10:40 . *Elasticity-mediated colloidal assembly in ultrathin membranes: Assembly in 2D.* ***M.M. Santore***

11:00 . *Air-liquid interface induced epithelial delamination.* ***G.G. Fuller****, C. Liu*

11:20 . *Interfacial properties of conditioning oils in consumer products.* ***B. Schubert***

The Westin DC Downtown
Rock Creek Salon C

Basic Research in Colloids, Surfactants & Interfaces

S. Hunyadi Murph, S. Kamdar, A. Mallia, U. Natarajan, D. Nguyen, Z. Niroobakhsh, Organizers, Presiding

8:00 *Introductory Remarks.*

8:05 . *Transparent covalently attached liquid-like surfaces for icephobic coatings with broad substrate compatibility.* ***J. Chin****, T. Eder, A. Kandeloos*

8:23 . *Interfacial polymerization of aromatic polyamide reverse osmosis membranes.* ***S. Zheng****, T. Wei, B.S. Hsiao*

8:41 . *Effect of salts and electric field perturbations on the internal droplet dynamics of bio-colloidal solutions: An experimental and theoretical study.* ***K. Nath****, T. Dhara, U. Ghosh, S. DasGupta*

8:59 . *Thermodynamic and rheological properties of glassy polymers at 2D air-water interface.* ***K. Pham****, B. Thompson, D. Ashkenazi, D. Renggli, M. Gottlieb, N.J. Wagner*

9:17 . *Withdrawn*

9:35 . *Upconverted hot electrons generated in Mn-doped quantum dots with visible light for efficient defluorination of perfluorinated carboxylic acids.* ***I. Schulze****, C. Orrison, D. George, Z. Zhang, C. Hilty, D. Son*

9:53 . *Crumpling and assembling of massive 2D materials by droplet drying.* ***B. Xu***

10:11 . *Capillary wave-assisted colloidal assembly. M.J. Caso, L.D. Manuel, C. Bachar, K. Park,* ***K.M. McPeak***

10:29 . *Withdrawn*

10:47 . *Non-classical electrical double layer of salt-in-ionic liquids.* ***R.M. Espinosa-Marzal***

11:05 . *Withdrawn*

11:23 . *Modified hydrophilic lipophilic deviation (HLD) equation with an inclusion of alcohol mass fraction in surfactant-alcohol mixture and pairwise interaction parameters.* ***N. Gasimli****, H.F. Yoga, R.T. Johns*

11:41 *Concluding remarks.*

The Westin DC Downtown
River Birch A

Biomaterials and Biointerfaces

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

8:00 . *Plant biomolecule coronas on nanomaterials: From in vivo transformations to subcellular imaging.* ***J. Giraldo****, R. Hernandez, J.C. White, K. Wheeler, S. Kruss, C.J. Murphy*

8:20 . *Synergistic pyroptosis and STING activation via Mn-calcium carbonate nanoparticles for enhanced in situ cancer vaccination.* ***W. Tang***

8:40 . *Polythiophene nanoparticles for electrochemical detection of mild traumatic brain injury-specific microRNAs.* ***A.J. van der Vlies****, P. Saha, T. Aditya, K. Dighe, S.H. Hicks, D. Pan*

9:00 . *Multiscale simulations of hydration and antibiofouling behavior of zwitterionic sulfobetaine methacrylate (SBMA).* ***P. Sarker****, X. Qin, J. Fang, T. Wei*

9:20 . *Quantifying the activity of interfacial esterases towards water-soluble and self-assembled substrates for drug delivery.* ***T. Rifat****, M.A. Ilies*

9:40 . *Optimized BSA-based nanoemulsions for selective targeting of folate receptor-expressing tumor cells.* ***A. Robles****, S. Kim, M. Elgegren, J. Nakamatsu*

10:00 . *Withdrawn*

10:20 . *Reversible self-assembly of amyloid beta 1–40-coated gold colloids.* ***K. Yokoyama****, C. Kolilias, V. Brzezinski, A. Ichiki*

10:40 . *Determining the structure of lipid nanoparticles from small angle scattering measurements by machine learning.* ***A. Shepherd****, A. Pathan, B. Thompson, N.J. Wagner*

11:00 . *Withdrawn*

11:20 . *Design of conjugated polymers with reaction-induced turn-on fluorescent properties for biodetection.* ***U. Hasegawa****, A.J. van der Vlies, D. Shin*

The Westin DC Downtown
Rock Creek Salon A

Active & Responsive Matter

A. Liu, D. Tree, Organizers, Presiding

8:00 . *Self-propelled morphing matter for swimming microrobots.* ***A. Pena-Francesch***

8:20 . *Non-reciprocal interparticle interactions in field-driven active colloids.* ***B. Bharti***

8:50 . *Beyond devices: Optimizing magnetorheological fluids through fluid-particle rheology and visualization.* ***A. Koh****, E. Johnson*

9:10 . *Advanced control for active colloids inspired by swarm robotics.* ***D. Tree****, C.K. Peterson, S. Laishley*

9:30 . *Acoustically powered microrobots for transport in biomedicine. R.R. Raj, J.G. Lee, J. Carter, A. Gupta,* ***C.W. Shields***

10:00 . *Deep reinforcement learning for controlled navigation between colloidal shape dependent structures.* ***J.E. Bond****, J. Edison, M.A. Bevan*

10:20 . *Chemically fueled rapid volumetric phase transitions in porous hydrogels.* ***J. Wood****, M. Rath, S. Srivastava, S. Battumur, S.R. Raghavan, T. Woehl*

10:40 . *Movement of nanoparticles in electric fields for manipulating transmittance.* ***H. Yoon***

11:00 . *Synthesis and pH-responsive properties of bacteria mimicking hydrogel capsules.* ***N. Robinson****, V.A. Kozlovskaya, E.P. Kharlampieva*

11:20 . *Liquid-like nanoparticle superlattices under electric field.* ***Z. Wang****, C. Liu, P. Pan, S. Liu, Q. Chen*

11:40 . *Mechanistic details of superspreading surfactancy.* ***T.J. McCarthy****, B. Jun*

The Westin DC Downtown
Rock Creek Salon B

Atomically Precise Nanomaterials: Connecting Coordination, Cluster, Colloidal, & Crystal Chemistry

Atomistic Control in Nanostructures

S. Ivanov, C. Zeng, S. Zhang, Organizers, Presiding

8:00 . *Phase engineering of atomically precise gold nanoclusters.* ***R. Jin***

8:25 . *Atom-precise DNA-stabilized silver nanoclusters and their higher-order assembly.* ***S.M. Copp***

8:50 . *Atomically precise iron-group metal nanoclusters: Synthesis, structure, and properties.* ***T. Higaki***

9:15 . *Synthesis and Electronics of Silicon cluster dimers.* ***T.A. Su***

9:40 . *Benzyl ligand driven self-assembly behavior of atomically precise nanocrystals.* ***G. Johnson****, S. Zhang*

9:55 *Intermission.*

10:05 . *Chemical diversity with atomic precision in multinary clusters.* ***S. Dehnen***

10:30 . *Atomistic insights into how neighboring active sites cooperate to mediate chemical transformations at the surface of M/Co/Se molecular clusters.* ***A. Velian****, J.A. Kephart, D. Zhou*

10:55 . *Synthesis and characterization of paramagnetic nanoclusters containing nickel or cobalt.* ***T.W. Hayton***

11:20 . *Synthesis and reactivity of discrete chalcogen-modified copper nanoclusters.* ***G. Bailey***

11:45 . *Precision synthesis of II-VI and IV-VI semiconductor nanoclusters via cation exchange.* ***F. Ma****, S. Ivanov, L. Dobrzycki, K. Abboud, C. Zeng*

Materials for Energy Innovation Technology

Sponsored by COMSCI, Cosponsored by COLL, ENFL and POLY

Exploring Interfacial Structure and Reactivity in Mineral-Water Systems: From Single-Crystal Surfaces to Porous Media

Sponsored by GEOC, Cosponsored by COLL and ENVR

MONDAY AFTERNOON

The Westin DC Downtown
River Birch B

Mentoring Undergraduate Surface Science Research

Assembling Surfaces, Illuminating Interfaces: Advances from Monolayers to Photocatalysts

G. Avila-Bront, A. Baber, G. Y. Stokes, Organizers
E. V. Iski, Organizer, Presiding

2:00 . *Structural and electronic properties of aromatic self-assembled monolayers. D. Moiny, L. Tackett, L. Penland, H. Hirushan, N. Dissanayake, Q. Zhou, D. Ovchinnikov,* ***R. Farber***

2:20 . *Understanding two-dimensional mixing via the surface structures of binary SAMs.* ***G. Avila-Bront***

2:40 . *Purification and surface restructuring in alkyl thiocyanate-based self-assembled monolayers.* ***A.F. Raigoza***

3:00 . *Photoelectrochemistry of redox-active self-assembled monolayers formed on n-Si/Au nanoparticle photoelectrodes.* ***G. O'Neil***

3:20 . *Investigating the pH dependent surface structure of citrate coated silver nanoparticles.* ***C.A. Daly****, Z. Iskakova, K. Conn, S. Gonzalez, M. Oludare, K.R. Riley*

3:40 . *Mentoring undergraduate students in surface science research at a primarily undergraduate institution.* ***P.N. Njoki****, E. Wideman*

4:00 . *WO3 nanoparticles for dark photocatalysis.* ***E. Borguet***

The Westin DC Downtown
Rock Creek Salon B

Atomically Precise Nanomaterials: Connecting Coordination, Cluster, Colloidal, & Crystal Chemistry

Bridging Theory and Experiment

S. Ivanov, C. Zeng, S. Zhang, Organizers, Presiding

2:00 . *Imprecise ligand chemistry in atomically-precise nanoclusters.* ***M.R. Jones***

2:25 . *Theoretical investigation of dual emission mechanisms in atomically precise nanoclusters.* ***C.M. Aikens***

2:50 . *Atomically precise coinage metal cluster chemistry directed by stibine-based ligands.* ***A. Das***

3:15 . *Localization vs. delocalization: Geometric and electronic structure evolution of Group 13 hydrides.* ***I.A. Popov***

3:40 . *Computational palette across length scales: Chemical bonding, machine learning, and excited-state simulations for clusters and solids.* ***N. Fedik***

4:05 *Intermission.*

4:15 . *Expanding the computational toolbox to explore materials with atomic precision.* ***A.Z. Clayborne***

4:30 . *Utilizing single-crystalline transformations for precise atom placement in polyoxometalate coordination networks.* ***A.M. Schimpf****, L. Chen, E. Samolova*

4:55 . *Atomically well-defined single chains of quasi-1D van der Waals crystals using nanotube encapsulation.* ***M. Arguilla***

5:20 . *Confining excitons through 2D semiconductor–MOF heterojunctions.* ***T. Kempa***

The Westin DC Downtown
Rock Creek Salon C

Basic Research in Colloids, Surfactants & Interfaces

S. Hunyadi Murph, S. Kamdar, A. Mallia, U. Natarajan, D. Nguyen, Z. Niroobakhsh, Organizers, Presiding

2:00 *Introductory Remarks.*

2:05 . *Coarse-grained molecular modeling of Macropore-infused nanocomposite emulsion thermosets (MINET).* ***Y. Xu****, J.P. Singer, R. Sills*

2:23 . *Can coacervates serve as hospitable prebiotic compartments for RNA under environmental perturbations?.* ***J. Pei****, P. Bevilacqua, C.D. Keating*

2:41 . *Surface water organization in ferric sulfate solutions investigated using vibration sum frequency generation.* ***G. Gattermeir****, B. Biswas, H.C. Allen*

2:59 . *Breakdown and sustainable current conductance in insulator system using the Monte Carlo simulation.* ***M.O. Lisunova***

3:17 . *Investigating the self-assembly of pH-sensitive switchable diamine surfactant using sum frequency generation spectroscopy and molecular dynamics simulations.* ***D.C. Garza****, K.A. Cimatu*

3:35 . *Withdrawn*

3:53 . *Correlating the chemical and physical degradation of lipid vesicles.* ***K.P. Mineart****, S. Rezaei, E.G. Kelley*

4:11 . *Effect of surface-bulk partitioning on the heterogeneous oxidation of multi-component aqueous aerosols.* ***K. Selvaraj****, T. Masaya, F. Goulay*

4:29 . *Promise of slippery quasi-liquid surfaces to reduce salt adhesion in desalination systems. M. Khan,* ***B. Fan***

4:47 . *Effect of concentration and chemical nature of weak polyelectrolytes on adsorption behavior at oil-water interface: MD simulation study.* ***U. Natarajan****, R. Kurapati*

5:05 . *Tracking stratification in waterborne bimodal polymer dispersions with comparable diffusion coefficients.* ***G. Ersek****, J. Scheerder, I. van Casteren, Q. Chen, E. Solano, J. Van Der Gucht, G. Portale*

5:23 *Concluding remarks.*

The Westin DC Downtown
Potomac Salon 3

2025 ACS National Award in Colloid Chemistry: Symposium in Honor of Norman J. Wagner

M. E. Helgeson, D. Miller, L. Walker, Organizers
R. Gupta, Organizer, Presiding

2:00 . *Hydrogels and emulsion gels as functional materials - Rheology, 3D extrusion printing, and applications.* ***P. Thareja***

2:20 . *Exploiting and adapting to pressure changes in complex, multicomponent environments.* ***J. Hipp****, K. Quan*

2:40 . *CO_2-switchable phase behavior in crosslinked hydrogels.* ***M. Gordon****, S. Sergi, J. Hastie, F. Smith, A. Devlin*

3:00 . *Electrically sticking gels to tissues and metals.* ***S.R. Raghavan***

3:20 . *Micro- and Meso-mechanics of dense suspensions under flow.* ***S. Jamali***

3:40 *Break.*

4:00 . *Predicting the shear rheology of suspensions containing carbon black leveraging microstructural insight. J. Hipp, B. Liu, P. Ramos,* ***J. Richards***

4:20 . *Linking structural and rheological memory in disordered soft materials. K. Kamani, Y. Shim, J. Griebler, S. Narayanan, Q. Zhang, R. Leheny, J. Harden, A. Deptula, R.M. Espinosa-Marzal,* ***S. Rogers***

4:40 . *Active propulsion of magnetic colloidal assemblies and micro-rollers via non-reciprocal dynamics in non-Newtonian media.* ***O.D. Velev****, A. Basu*

5:00 . *Dynamics of a colloidal suspension during dissipative self-assembly. J. Conradt,* ***E.M. Furst***

5:20 . *Pattern formation during evaporation of nanoparticle films and applications to bacteria-resistant coatings.* ***S. Bhatia***

5:40 . *Building strong industry, academic, & National Lab collaborations to enable technology deployment: An ExxonMobil perspective.* ***J. McMullan***

The Westin DC Downtown
Rock Creek Salon A

Active & Responsive Matter

A. Liu, D. Tree, Organizers, Presiding

2:00 *Soft Matter Lectureship Award Presentation.*

2:10 . *Living gels formed by bacteria growing in complex fluids.* ***S. Datta***

2:50 . *Designing tunable self-assembly process of microparticles at fluidic interfaces. S. Park, J. Choi,* ***A. Liu***

3:10 . *Principles of the propulsion of any type of active particle by AC electrohydrodynamics.* ***O.D. Velev***

3:40 . *Anisotropic colloidal assembly in external fields: Digital twins matching interactions, diffusivities, and structures.* ***A.J. Pellicciotti****, L. Zhang, Q. Wu, M.A. Bevan*

4:00 . *Life and death of far-from-equilibrium active droplets.* ***L.D. Zarzar***

4:30 . *Polymer microarray with tailored morphologies through condensed droplet polymerization for high-resolution optical imaging. K. Park,* ***R. Yang***

4:50 . *Hierarchical surface architectures via self-organization with top-down photochemical control.* ***T. Li****, L. Sun*

5:10 . *Active enzymes: From transport to collective behavior.* ***A. Sen***

5:40 . *Electrochemically driven dynamic clusters of binary colloids.* ***S. Srivastava****, T. Woehl*

The Westin DC Downtown
River Birch A

Biomaterials and Biointerfaces

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

2:00 . *Influence of intercellular force transduction on multicellular organization in three dimensional hydrogel cultures.* ***D. Leckband****, E. Hebner, S. Rahemtulla, S. Leggett*

2:20 . *Self-assembled thiol monolayers as functional coatings for electrodes in stimulus-responsive neurotransmitter delivery.* ***T. Patel****, K. Krukiewicz, M.J. Biggs*

2:40 . *Withdrawn*

3:00 . *Nitric oxide-releasing hyaluronic acid electrospun fiber wound dressings.* ***M.E. Purvis****, W.A. Sellers, M.H. Schoenfisch*

3:20 . *Pilot scale synthesis of peptide based zwitterionic cross-linkers, incorporation into polyampholyte hydrogels, and resistance to bacterial adhesion and biofilm formation.* ***S. Oneida****, A.E. Shea, M.T. Bernards, K.V. Waynant*

3:40 . *Stabilization of Protein inside of cyclic polymeric nanoparticles for therapeutic delivery.* ***M. Khan****, G. Du, M.A. Quadir*

4:00 . *Aquaporin water transit modulation via protein capping.* ***N.K. Singh****, H. Belagali, K. Aung, J.V. Vermaas*

4:20 . *Nitric oxide-releasing mesoporous nanoparticles for the modulation of periodontal disease associated inflammation.* ***T.D. Ramrattan****, R. Kumar, M.E. Nogler, S.M. Wallet, M.H. Schoenfisch*

4:40 . *Enhanced foreign body response mitigation for implantable glucose biosensors via extended nitric oxide release.* ***M.E. Nogler****, R. Kumar, S. Picciotti, M. Warchol, H. El-Ahmad, S.M. Wallet, M.H. Schoenfisch*

5:00 . *Molecular modeling and molecular dynamics simulation of a packed bacterial microcompartment.* ***S. Raza****, N. Yadav, A. Jussupow, N.M. Tefft, D.M. Tiede, C. Kerfeld, M. Teravest, M. Feig, J.V. Vermaas*

5:20 . *Controlled phase separation via in situ acidification: Enhancing inkjet 3D printing of gelatin methacrylated (GelMA)-dextran water-in-water emulsions to produce unique hydrogels with interconnected pores.* ***E. Stefanopoulou****, G.B. Messaoud, W. Richtering, R.S. Ortiz, H. Fischer*

5:40 . *Catalytic silver-platinum hollow nanoparticles as labels for sensitive colorimetric lateral flow assay.* ***J. Zhou****, S. Shao, Z. Wei, X. Sun, X. Xia*

Water-Soluble Polymers: From Foundational Science to Finished Products

Sponsored by COMSCI, Cosponsored by ANYL, COLL, ENVR, I&EC and POLY

Exploring Interfacial Structure and Reactivity in Mineral-Water Systems: From Single-Crystal Surfaces to Porous Media

Sponsored by GEOC, Cosponsored by COLL and ENVR

MONDAY EVENING

Walter E. Washington Convention Center
Hall C

COLL Sci-Mix

8:00 102. *Synthesis and pH-responsive properties of bacteria mimicking hydrogel capsules.* ***N. Robinson****, V.A. Kozlovskaya, E.P. Kharlampieva*

8:00 103. *Active and thermally stable plasmonic nanoparticles for enhanced sensing and anticounterfeiting technologies.* ***A. Aggarwal****, S.E. Skrabalak*

8:00 104. *Precision synthesis of II-VI and IV-VI semiconductor nanoclusters via cation exchange.* ***F. Ma****, S. Ivanov, L. Dobrzycki, K. Abboud, C. Zeng*

8:00 105. *Withdrawn*

8:00 106. *Growth of high optical quality large-area WX_2 (X=S, Se) films through controlled reduction of WO_3.* ***P. Hanrahan****, T. Kempa, R. Dziobek-Garrett*

8:00 D14. *Thermodynamic and rheological properties of glassy polymers at 2D air-water interface.* ***K. Pham****, B. Thompson, D. Ashkenazi, D. Renggli, M. Gottlieb, N.J. Wagner*

8:00 114. *Investigating the self-assembly of pH-sensitive switchable diamine surfactant using sum frequency generation spectroscopy and molecular dynamics simulations.* ***D.C. Garza****, K.A. Cimatu*

8:00 115. *Effect of bio-based polymer-surfactant interactions on rheological response in a sulfate-free micellar system.* ***F. Adeosun****, S. Amin*

8:00 116. *Withdrawn*

8:00 117. *Quantifying the activity of interfacial esterases towards water-soluble and self-assembled substrates for drug delivery.* ***T. Rifat****, M.A. Ilies*

8:00 D13. *Molecular modeling and molecular dynamics simulation of a packed bacterial microcompartment.* ***S. Raza****, N. Yadav, A. Jussupow, N.M. Tefft, D.M. Tiede, C. Kerfeld, M. Teravest, M. Feig, J.V. Vermaas*

8:00 119. *Self-assembled thiol monolayers as functional coatings for electrodes in stimulus-responsive neurotransmitter delivery.* ***T. Patel****, K. Krukiewicz, M.J. Biggs*

8:00 135. *Biofunctionalization of zwitterionic anti-fouling polymers robustly attached to passivated porous silicon for specific optical detection of biomarkers.* ***S. Smail****, E. Mäkilä, J. Salonen, P.E. Laibinis, S.M. Weiss*

8:00 . *Withdrawn*

8:00 136. *Role of poly-arginine tails in the interactions of antimicrobial peptides with lipid membranes.* ***N. Kaur****, E. Mihailescu*

8:00 137. *Developing scalable syntheses to create a library of methacrylamide based zwitterionic crosslinkers for polyampholyte production.* ***M. Witherwax****, C. Malloy, A. Pollard, M.T. Bernards, K.V. Waynant*

8:00 138. *Towards the preparation of MXene-based electrochemical sensors: Influence of the delamination method on the electrochemical performance of glassy carbon electrodes modified with $Ti_3C_2T_x$ particles.* ***M.E. Ballesteros****, M.M. Ameri, R. Grieseler, M.K. Camargo León*

8:00 139. *Nacre-like MXene/polyacrylic acid layer-by-layer films as hydrogen gas barriers.* ***Y. Auh****, M. Radovic, M. Green, H. Yamaguchi, J.L. Lutkenhaus*

8:00 140. *Investigating the impact of algae on the structural and functional properties of MXene nanomaterials.* ***D. Devkota****, Z. Rosenzweig, R. Klaper, E. Ostovich*

8:00 159. *Synthesis of hybrid organic–inorganic MXenes: Mechanistic insights into halide-to-organic transformations.* ***Y. Kim****, M. Czaikowski, V. khokhar, D. Jiang, J.S. Anderson, D. Talapin*

8:00 160. *Withdrawn*

8:00 D15. *Compositionally engineered pure blue-emitting perovskites with improved stability for light-emitting diodes.* ***S. Gundam****, J. Hofkens*

8:00 . *Withdrawn*

8:00 162. *Tailoring high-entropy Cu-Sb-Bi-Ag-Zn-S colloidal nanocrystals via cation exchange for electrochemical applications.* ***A. Bora****, S. Sen, N. Patil, S. Singh, K. Ryan*

8:00 D16. *Time-resolved fluorescence of $CuInS_2$/ZnSeS core/shells at the ensemble and single-particle level.* ***H. Kaur****, C.D. Heyes*

8:00 164. *Exploring tetrazine based organic cations in two dimensional organic-inorganic hybrid perovskites.* ***C.J. Gloor****, Z. Gan, J. Shanahan, S. Bhattacharya, J. Hu, L. Yan, A.M. Moran, W. You*

8:00 197. *Effect of Si/Sn on the energy gap dynamics and optical efficiency of solution-processed ternary $Ge_{1-x-y}Si_ySn_x$ quantum dots.* ***C.J. Onukwughara****, D. Pate, Ü. Özgür, I.U. Arachchige*

8:00 198. *Ferrocene-functionalized CdSe quantum dots as photocatalysts for hydrogen evolution. K.E. García-Pedraza,* ***N. Reilly****, D. Watson*

8:00 199. *Emulsions stabilized by nanoclays and polymers: Behavior of Pickering emulsions in the presence of polymers.* ***H.N. Disanayaka****, N. Gunawardhana, S.T. Laughlin, S.R. Bhatia*

8:00 200. *Surface functionalization of gold nanospheres in biologically relevant solutions with diversely functionalized peptoids.* ***I. Matusich****, M. Batek, H. Goldberg, N. Raman, J. Hong, A.A. Fuller*

8:00 201. *Magnetic cargo (MagCar) for single-cell proteomics in the vertebrate organizer.* ***M. Islam****, J. Li, P. Nemes*

8:00 202. *Colloidal bismuth nanoparticles as diagnostic imaging agents.* ***A. Martino****, F. Mangano, B.C. Fallon, E. Greene, R.C. Willson, N. Mathuria, C.S. Filgueira*

8:00 203. *Quantum-defect engineered fluorescent nanosensors: Unlocking ratiometric sensing for continuous insulin monitoring.* ***A.A. Alizadehmojarad****, H. Kang, G. Sánchez-Velázquez, X. Gong, M. Strano*

8:00 204. *Phase-resolved second harmonic generation for under $50,000: Toward accessible ultrafast laser spectroscopy.* ***N.M. Gonzalez****, A. Alghamdi, F. Geiger*

8:00 205. *Adsorption equilibrium and kinetics at colloidal oil-water interface: Effect of charge and aromatic surfactants.* ***L. Lewison****, D. Coers, M. Subir*

8:00 206. *Understanding the impact of polyol stereochemistry on chitosan film morphologies using scanning electron microscopy.* ***N.E. Morris****, O.E. Coer, G.M. Peters, B. Boardman*

8:00 233. *Leveraging plasmon rulers: High-throughput anti-icing screening with gold nanoparticles.* ***P. Pandey****, Y. Kim, P. Johns, K. Susumu, M. Stewart, E. Oh*

8:00 234. *Electrospun ceramic nanofibers for lighter and stronger polymer nanocomposite materials. L. Zimmerman, A. Mali, S. Obare,* ***L. Zhang***

8:00 235. *Highly luminescent two-dimensional silicon nanosheets.* ***J.B. Essner****, A. Bera, M. Jabrayilov, A. Chaudhari, A. Tan, B. Diroll, J.V. Zaikina, M. Panthani*

8:00 236. *Chiral two-dimensional perovskite with giant chiroptical activity enabled by axially chiral organic cation.* ***M. Zhang****, M. Kim, Z. Lin*

8:00 237. *Engineering human carbonic anhydrase II and ultrasmall gold nanoparticles into enzyme-functionalized nanocarriers: For drug delivery applications.* ***M. Sanchez Machado****, M.A. Ilies*

8:00 238. *Nano-enabled PFAS-free hydrophobic cotton fiber.* ***M. Kashem****, S. Nam, M.B. Hillyer, F. Hassan, D. Fang*

8:00 239. *Thermally responsive composites for dynamic fouling control.* ***G. Parisi****, S. McBride*

8:00 240. *Heterogeneous adsorption of volatile organic compounds to aerosol particle surfaces probed with in-situ surface vibrational sum-frequency scattering.* ***J.B. Brown****, Y. Qian, H. Wang, H. Fisher, Z. Huang-Fu, Y. Rao*

8:00 241. *Hydride and hydrogen atom transfer reactivity of silicon nanoparticles: Stoichiometry, kinetics, and thermodynamics.* ***A.K. Williams****, A. Berlanga, J.M. Mayer*

8:00 242. *Suppressing oxides growth on aluminum for enhanced performance of superconducting quantum circuits using self-assembled monolayers.* ***O.a. Saleh****,* ***S.G. Rao****,* ***K. Alam***

8:00 281. *Modulating the electronic properties of orthorhombic Mo_2C surfaces with strain and defects: Insights from first-principles calculations.* ***S. Kumar****, G. Adabasi, M.Z. Baykara, A. Martini*

TUESDAY MORNING

The Westin DC Downtown
Potomac Salon 3

2025 ACS National Award in Colloid Chemistry: Symposium in Honor of Norman J. Wagner

M. E. Helgeson, D. Miller, L. Walker, Organizers
R. Gupta, Organizer, Presiding

8:00 . *From Shear-Induced transitions to small-angle scattering techniques in industrial R&D.* ***F. Nettesheim***

8:20 . *Simultaneous structure and rheology of block copolymer micelles.* ***K. Weigandt****, K. Rehmann, R.P. Murphy, S.D. Hudson, P. Salipante*

8:40 . *Colloidal gelation and the (generalized) phase behavior of competing interaction fluids: Before and after Norm Wagner.* ***R. Castaneda Priego***

9:00 . *"Squishallurgy": Toward thermal processing of colloidal soft solids.* ***M.E. Helgeson***

9:20 *Break.*

9:40 . *Withdrawn*

10:00 . *Solving polymer challenges in product design.* ***M. Lynch***

10:20 . *Multi-scale simulations of thermodynamics and rheology of polymer-colloid networks.* ***R.G. Larson***

10:40 . *Development of tools for sustainable complex fluid formulation engineering.* ***L. Walker***

11:00 *Introductory Remarks.*

11:10 . *From ancient Rome to lunar exploration, colloidal science & engineering in support of sustainable terrestrial construction materials, lunar in situ resource utilization, and astronaut protection for project Artemis.* ***N.J. Wagner***

The Westin DC Downtown
Rock Creek Salon B

Basic Research in Colloids, Surfactants & Interfaces

S. Hunyadi Murph, S. Kamdar, A. Mallia, U. Natarajan, D. Nguyen, Z. Niroobakhsh, Organizers, Presiding

8:00 *Introductory Remarks.*

8:05 . *In situ formation of self-assembling lipopeptides: From functional synthetic cells to targeted nanocarriers.* ***R.J. Brea Fernández***

8:23 . *Size-dependent mixed surfactant partitioning in aerosol droplets.* ***A. Bain***

8:41 . *Interfacial rheology of polymers without free ends: Effects of molecular architecture at interfaces.* ***D. Renggli****, B. Thompson, J. Allgaier, M. Kruteva, D. Richter, T. Lin, K. Matyjaszewski, D. Vlassopoulos, N.J. Wagner*

8:59 . *Effect of bio-based polymer-surfactant interactions on rheological response in a sulfate-free micellar system.* ***F. Adeosun****, S. Amin*

9:17 . *Phase-transfer of citrate-synthesized metal nanoparticles and controlled metal alkoxide hydrolysis in organic solvents. J. Magdon, M. Jasienski, M. Waltz, T. Lee,* ***R. Medhi***

9:35 . *Janus multipods as inorganic UV-protective Pickering emulsifier for sunscreens.* ***J. Kwon****, H. Lee*

9:53 . *Lipid metal-organic framework colloidosomes.* ***J. Podliska****, C. Coerver, R. Ravanfar*

10:11 . *Structure-property relationships of molecular gels prepared from alkanoic acid derivatives and metal salts.* ***A. Mallia***

10:29 . *Gelation kinetics and structural evolution of aluminosilicate gels measured via paired rheology and stopped-flow SAXS.* ***T. Egnaczyk****, W.H. Hartt V, R.P. Murphy, N.J. Wagner*

10:47 . *Understanding the rheology of oil-in-water emulsions: Influence of phase viscosity, droplet size, and interfacial interactions.* ***E. Johnson****, T. Dettmar, A. Koh*

11:05 . *Microfluidic synthesis of poly lactic-co-glycolic acid (PLGA) microcapsules through interfacial stabilization and evaporation dynamics control.* ***L. Jeon****, H. Lee*

11:23 . *Lyotropic self-assembly of ethoxylated surfactants: A new perspective on their dilute solution behaviors.* ***M.K. Mahanthappa****, Z.M. Baruer, P.M. Bhide*

11:41 *Concluding remarks.*

The Westin DC Downtown
River Birch A

Chemistry of MXenes: Synthesis, Structure, Properties, and Applications

Termination, Structure, Synthesis, and Surface Reactions

D. Jiang, D. Talapin, Organizers, Presiding

8:00 . *MXenes: What is Next?.* ***Y. Gogotsi***

8:40 . *Insights into the MXene termination's influence on structure and stability.* ***P.O. Persson***

9:20 . *Chemistry of inorganic and organic functionalized MXenes.* ***A. Vojvodic***

9:50 *Break.*

10:20 . *Unveiling atomic-scale insights into 2D materials: SIMS at its best.* ***P.P. Michalowski***

11:00 . *Synthesis science of V-MXenes (VXenes). R. Snyder, V. Joshi,* ***C. Birkel***

11:30 . *Etching $Ti_3C_2T_z$ MXenes: Acid, molten salt, or electrothermal molten salt.* ***S. Pas****, K. Arole, S. Micci-Barreca, Y. Zhang, R. Banavath, M. Dujovic, D. Johnson, A. Djire, J.L. Lutkenhaus, M. Radovic, M. Green*

The Westin DC Downtown
River Birch B

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

Structure Sensitivity in Thermal Heterogenous Catalysis

J. Chen, J. He, Y. Yin, Organizers
M. L. Personick, Organizer, Presiding

8:00 . *Toward active-site tailoring in heterogeneous catalysis.* ***R. Jin***

8:30 . *Withdrawn*

9:00 . *Improving the fidelity of nanoparticle active site models.* ***L.T. Roling***

9:30 . *Structure sensitivity in CO_2 methanation over Ni catalysts.* ***M. Ball***

10:00 *Break.*

10:10 . *Ethylene epoxidation: Computation and experiment for a novel alloy catalyst.* ***M. Montemore***

10:40 . *Engineering Pd sites via strong metal-support interactions and alloying for selective hydrogenation.* ***H. Zhu***

11:10 . *Nano-size metal oxides for catalytic oxidation reactions.* ***S.L. Suib***

The Westin DC Downtown
Potomac Salon 2

Innovative Nanotechnology & Single Cell Imaging in Biology and Medicine

Cosponsored by ANYL, BIOL, BIOT‡ and PHYS
X. Xu, Organizer, Presiding

8:00 . *DNA-based nanostructures as next-generation live-cell probes.* ***C.A. Mirkin***

8:30 . *Advancing metallomics, metabolomics, and glycomics using functional DNA nanotechnology.* ***Y. Lu***

9:00 . *Using nanoparticle contrast agents to study nanoplastics in zebrafish.* ***E.R. Van Keuren****, C. Albanese, O. Bulgin, Z. Chakeri, A. Fox, E. Glasgow, M. Kausch, S. Noonepalle, D. Quiceno-Torres, O. Rodriguez, S.L. Stoll, A. Villagra*

9:30 *Recess.*

9:40 . *Time-resolved nonlinear optical microscopy of molecular adsorption and transport at living cell membranes.* ***H. Dai***

10:10 . *Behind closed membranes: Illuminating the chemistry of immune defense.* ***Y. Yu***

10:40 . *Quantum-defect engineered fluorescent nanosensors: Unlocking ratiometric sensing for continuous insulin monitoring.* ***A.A. Alizadehmojarad****, H. Kang, G. Sánchez-Velázquez, X. Gong, M. Strano*

The Westin DC Downtown
Rock Creek Salon A

Atomically Precise Nanomaterials: Connecting Coordination, Cluster, Colloidal, & Crystal Chemistry

From Nanocrystals to Nanocatalysts

S. Ivanov, C. Zeng, S. Zhang, Organizers, Presiding

8:00 . *Colloidal synthesis of multimetallic nanocrystals.* ***M. Cargnello***

8:25 . *Understanding nanocluster catalysis.* ***D. Jiang***

8:50 . *Synthesis and strain analysis of core/shell nanocrystals.* ***H. Zhu***

9:15 . *Computationally guided design of metal oxide nanocrystals for electrocatalytic applications.* ***X. Ye***

9:40 . *Synthesis and characterization of plasmonic Au-Cu nanorods for CO_2 reduction.* ***S. Zhou****, E. Cook, D. Soto, C.J. Murphy*

9:55 *Intermission.*

10:05 . *Role of atomic arrangements in catalysts.* ***Y. Huang***

10:30 . *Tailoring Pt-Cu alloy surfaces to enhance Oh-adsorption for stereoselective directed hydrogenation.* ***C.W. Li***

10:55 . *Dilute alloys for efficient catalysis: Insights at the molecular scale.* ***J. Lee***

11:20 . *Data-driven synthesis of high-Index facet nanoparticles for clean energy applications.* ***B. Shen***

11:45 . *Withdrawn*

The Westin DC Downtown
Rock Creek Salon C

Biomaterials and Biointerfaces

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

8:00 . *Thinking deeply: Foundations of biocement.* ***B. Bradow****, E. Chase, K. Bruce, M. Tuttle, R. Martineau, M.S. Carter, M.K. Gupta*

8:20 . *Engineering hollow plasmonic nanostructures for biosensing applications.* ***S. Shao****, J. Zhou, X. Sun, X. Xia*

8:40 . *Combating c. albicans biofilm infections using plant-based antifungal microcapsules.* ***S. Lee****, D. Lee, H. Koo*

9:00 . *Construction of multicellular-like liposome assembly with specific shapes.* ***S. Okada****, K. Shoji*

9:20 . *Resolving lipid nanoparticle bleb structures from small angle scattering profiles.* ***A. Pathan****, B. Thompson, N.J. Wagner*

9:40 . *Molecular self-assembly and glucose-directed phase separation for Responsive diabetes therapies.* ***M.J. Webber***

10:00 . *Withdrawn*

10:20 . *Engineering biomaterial microstructure via controlled liquid-liquid phase separation.* ***L. Li***

10:40 . *Influence of a surface chemistry on a barnacle settlement and their exploratory behaviors. S. Asano, T. Murosaki, N. Yasuyuki,* ***Y. Hirai***

11:00 . *Biofunctionalization of zwitterionic anti-fouling polymers robustly attached to passivated porous silicon for specific optical detection of biomarkers.* ***S. Smail****, E. Mäkilä, J. Salonen, P.E. Laibinis, S.M. Weiss*

11:20 . *Clusters of compartments mimicking natural organelles and cells communication.* ***C.G. Palivan***

11:40 . *Supramolecular lysosome-targeting chimeras (Supra-LYTAC) for targeted protein degradation.* ***D. Kim****, J. Ryu*

CME-NASA: Elevating Polymer Chemistry to New Heights-Polymers for Future Space Missions

Reimagining Chemistry for the Space Age

Sponsored by Joint Programming, Cosponsored by CELL, COLL, I&EC, PMSE and PRES

TUESDAY AFTERNOON

The Westin DC Downtown
Potomac Salon 2

Innovative Nanotechnology & Single Cell Imaging in Biology and Medicine

Cosponsored by ANYL, BIOL, BIOT‡ and PHYS
X. Xu, Organizer, Presiding

2:00 . *Active targeting hyaluronan and hyaluronan like polysaccharide nanoprobes for multiple modality imaging and drug delivery to breast cancer.* ***X. Huang***

2:30 . *Improving the cytosolic delivery of oligonucleotides through chemical tailoring of enzymatically released multi-tailed DNA surfactant conjugates from Nucleic acid Nanocapsules. J. Gorecki, I. de la Fuente, P. Corrigan, S. Pal, R. Canete, E.R. May,* ***J.L. Rouge***

3:00 . *Unraveling tumor heterogeneity: Translatable In Vivo multiplexed surface-enhanced Raman Spectroscopic (SERS) imaging of live tumor models.* ***J. Yu***

3:30 *Recess.*

3:40 . *Plasmon-enhanced fluorescence imaging and spectroscopy on nanostructures for single cell analysis.* ***Y. Li***

4:10 . *Single-particle light scattering microscopy for multi-parameter characterization of gene delivery nanoparticles.* ***A.M. Goldfain****, P. Bajcsy, J. Budhathoki, G. Cooksey, M. Daugherty, M. DiSalvo, T. Germer, E. Kwee, Y. Li, A. Peterson, B. Stacks*

4:30 . *Colloidal bismuth nanoparticles as diagnostic imaging agents.* ***A. Martino****, F. Mangano, B.C. Fallon, E. Greene, R.C. Willson, N. Mathuria, C.S. Filgueira*

The Westin DC Downtown
River Birch A

Chemistry of MXenes: Synthesis, Structure, Properties, and Applications

Energy Storage

B. Anasori, Organizer, Presiding
X. Wang, Presiding

2:00 . *MXenes for all solid-state batteries.* ***M. Okubo***

2:40 . *Withdrawn*

3:20 . *Towards the preparation of MXene-based electrochemical sensors: Influence of the delamination method on the electrochemical performance of glassy carbon electrodes modified with $Ti_3C_2T_x$ particles.* ***M.E. Ballesteros****, M.M. Ameri, R. Grieseler, M.K. Camargo León*

3:40 *Break.*

4:10 . *2D MXenes and their composites for pseudocapacitive energy storage.* ***X. Wang***

4:50 . *Carbon as proton storage site in $Ti_3C_2T_x$ during electrochemical protonation.* ***R. Wang****, P. Sallés-Perramon, Y. Zhang, P. Michalowski, A.I. Kolesnikov, J. Drnec, Y. Gogotsi*

The Westin DC Downtown
River Birch B

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

Plasmonic Catalysis and Photocatalysis

J. Chen, J. He, M. L. Personick, Y. Yin, Organizers
Y. Sun, Presiding

2:00 . *Plasmonic catalysis: Opportunities, challenges, and unresolved questions.* ***S. Linic***

2:30 . *Al@TiO_2 hybrid metal-semiconductor antenna-reactor complexes for plasmonic photocatalysis.* ***N.J. Halas***

3:00 . *Photocatalytic propane dehydrogenation on CuPt dilute plasmonic alloys.* ***D. Swearer***

3:30 . *Plasmon-enhanced photocatalysis.* ***N. Wu***

4:00 *Break.*

4:10 . *Photocatalytic desulfurization for accessing carbon radicals.* ***Y. Sun***

4:40 . *Role of hole scavengers in photocatalytic reduction of nitrobenzene by CdS quantum dots. C. Wang,* ***J. Zhao***

5:10 . *Modulation of electron and hole transfer processes through bandgap engineering of metal halide nanocrystals.* ***P.V. Kamat****, A. Chemmangat, M. Mukherjee*

The Westin DC Downtown
Potomac Salon 3

Langmuir Lectureship and Colloid and Surface Technology Award Lectures

D. Miller, C. Wirth, Organizers
R. Gupta, Organizer, Presiding
J. Schneider, Presiding

2:00 *Introductory Remarks.*

2:05 . *Soft colloids-stabilized Pickering foams.* ***A. Jayaraman****, J. Vyorykka, D. Winram, M. Einsla, G. Abramo*

2:25 . *Metal-organic frameworks by vapor deposition processes: Innovation in surface science for integrated applications.* ***A. Cruz***

2:45 . *High throughput surfactant characterization for correlation to cleaning efficiency.* ***R. Balaj****, A. Reder, M.P. Tate, C. Nimako-Boateng, D. Miller*

3:05 *Introduction.*

3:10 . *Electron videography of order and heterogeneity in colloidal nanomaterials.* ***Q. Chen***

4:05 *Introduction.*

4:10 . *Colloid Science of breathing.* ***J. Zasadzinski***

The Westin DC Downtown
Rock Creek Salon C

Surface Chemistry

Functional and Polymer Surfaces

H. Cornell, C. Kasprzak, A. V. Teplyakov, L. Tribe, Organizers
A. Samokhvalov, Presiding

2:00 . *Controlled electroless deposition of copper for polymer surface functionalization in core-shell discrete particle synthesis.* ***G. Alvarado Munoz****, R.H. Coridan*

2:20 . *H-bonding strength dictates the polymer structure upon water permeation.* ***A. Aggarwal****, S. Anand, S. K.R.S. Sankaranarayanan*

2:40 . *Mechanically induced polymerization and mechanochromic behavior in L-cysteine–passivated columnar silicon nanoparticles.* ***A.L. Garcia****, C. Sanchez, J. Garcia, V. Padilla,* ***J. Vanegas***

3:00 . *Designing polymer-functionalized silicon surfaces with tunable wettability.* ***H.B. Schmidt****, N. Fisher, K.L. Queeney*

3:20 . *Bridging nanoscale surface chemistry to bulk properties for polymer-inorganic composites.* ***A. Garcia****, M.T. Valentine, M.E. Helgeson, S. Srivastava*

3:40 *Break.*

4:00 . *Surface initiated polymerization of epoxides from nanoparticles using grafted Al-based initiators.* ***A. Ligocki****, M. Whipple, K. Ohno, R.C. Ferrier*

4:20 . *Do water droplets slide down highly hydrophilic surfaces without pinning ans/or tailing?.* ***A. Hozumi***

4:40 . *Withdrawn*

5:00 . *Thermally responsive composites for dynamic fouling control.* ***G. Parisi****, S. McBride*

The Westin DC Downtown
Rock Creek Salon A

Atomically Precise Nanomaterials: Connecting Coordination, Cluster, Colloidal, & Crystal Chemistry

Precision Engineering in Nanomaterials

S. Ivanov, C. Zeng, S. Zhang, Organizers, Presiding

2:00 . *Synthesis of colloidal nanocrystals in molten inorganic salts. R. Lin, Z. Zhou, J.H. Chang, Y. Chen, J. Ondry,* ***D. Talapin***

2:25 . *Precise synthesis of ultra-thin lead halide perovskite nanowires.* ***O. Chen***

2:50 . *Toward quantum dot superlattices with fully delocalized charge transport.* ***M. Law***

3:15 . *Correlation of lead(II) carboxylate binding modes between coordination complexes and PbS quantum dots.* ***J.O. Gibson****, F. Ma, R. Brown, K. Abboud, C. Zeng*

3:30 . *Dimensionally resolved nanostructures of helical III-VI-VII 1D van der Waals solids.* ***K. Dold****, M. Arguilla*

3:45 . *Withdrawn*

4:00 *Intermission.*

4:10 . *Atomically precise nanoclusters: from designed synthesis to advanced catalytic and optoelectronic applications.* ***T. Hyeon***

4:35 . *Optimizing photoexcited properties of quantum dots: Effects of stoichiometry, ligands, and interfaces.* ***S. Kilina***

5:00 . *Synthesis of germanium adamantane.* ***J. Ruidas****, M.A. Cardenas, T.A. Su*

5:15 . *Theoretical insights into the absorption spectrum of the $Au_{13}Cu_5$(5-chloropyridine-2-thiolate)$_9$(BINAP)$_3$ nanocluster.* ***S. Samarasinghe****, M. Eshaghi Kenari, N. Seal, A. Das, C.M. Aikens*

5:30 . *Unravelling kinetic-controlled transformation in III-V nanocrystals.* ***B. Wu****, S. Yang, Y. Zhang, P. Alivisatos*

5:45 . *2D metal-organic frameworks and heterostructures: crystal growth, exfoliation, and embossing for quantum emission.* ***Y. Zhu****, K. Kingsbury, P. Hanrahan, Á. Escobar, T.J. Kempa*

The Westin DC Downtown
Rock Creek Salon B

Nanomaterials

Defense Applications

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

R. Nagarajan, Organizer, Presiding
T. Han, M. R. Knecht, Presiding

2:00 . *Surface-modified MXenes for enhanced gas and electrochemical sensing of a CWA simulant.* ***T. Han***

2:20 . *Development of biomimetic functional materials using sequence-defined peptoids.* ***C. Chen***

2:40 . *Multispectral infrared photodetection using Hg-free quantum dots.* ***A. Sahu***

3:00 . *Designing peptoid assemblies as programmable materials for chemical and biological neutralization.* ***T. Trinh****, B. Phillips, X. Lin, E. Figgins, M. Zhang, G. Diamond, R.N. Zuckermann, C. Chen*

3:20 . *Leveraging plasmon rulers: High-throughput anti-icing screening with gold nanoparticles.* ***P. Pandey****, Y. Kim, P. Johns, K. Susumu, M. Stewart, E. Oh*

3:40 . *Segregated structure engineered sulfur-rich polymer/MXene composites for high performance triboelectric nanogenerator.* ***W. Cho****, S. Kim, H. Lee, N. Han, H. Kim, M. Lee, T. Han, J. Wie*

4:00 . *Development of chemically modified graphene quantum dot–carbon nanotube hybrid materials for high: Throughput electrochemical sensing. J. Sun,* ***A. Liu***

4:20 . *Advances in achieving bio-inspired reconfigurable nanoparticle assemblies.* ***M.R. Knecht***

4:40 . *Electrospun ceramic nanofibers for lighter and stronger polymer nanocomposite materials. L. Zimmerman, A. Mali, S. Obare,* ***L. Zhang***

5:00 . *Design of responsive solid-state peptide materials through non-aqueous Assembly.* ***A. Dey****, R. Ulijn*

5:20 . *Structural diversity from surface-driven shaped colloidal assembly.* ***F. Lu***

5:40 . *AI-guided fluidics for on-the-fly autonomous synthesis of colloidal nanoparticles.* ***Y. Zhang***

Exploring Interfacial Structure and Reactivity in Mineral-Water Systems: From Single-Crystal Surfaces to Porous Media

Sponsored by GEOC, Cosponsored by COLL and ENVR

WEDNESDAY MORNING

The Westin DC Downtown
Rock Creek Salon C

Mentoring Undergraduate Surface Science Research

Molecules at the Edge: Probing Aqueous and Soft Interfaces

G. Avila-Bront, A. Baber, E. V. Iski, Organizers
G. Y. Stokes, Organizer, Presiding

8:00 . *Understanding the physiochemical behavior of perfluorocarboxylic acids at aqueous interfaces. L.D. Jenkins,* ***J.D. Cyran***

8:20 . *It's hairy: Unraveling microplastic interfacial structure and its impact on molecular adsorption.* ***M. Subir***

8:40 . *Phase-resolved second harmonic generation for under $50,000: Toward accessible ultrafast laser spectroscopy.* ***N.M. Gonzalez****, A. Alghamdi, F. Geiger*

9:00 . *Hydrogen bonding and the interfacial affinities of sulfur species in model marine aerosols.* ***J. Patterson***

9:20 . *Characterization of the interaction between ACE 2 and SARS-CoV-2 spike protein over gold colloids surfaces.* ***K. Yokoyama****, M. Tabei, N. Bobowski*

9:40 . *Divalent metal ion mediated DNA adsorption to a carboxylate-terminated monolayer: Insights from undergraduate computational research.* ***M. Long****, A. Dempsey, M. Tran, E. Hegland, N. Santoni, L. LaBee*

10:00 . *Probing sulfonate vibrations and ion pairing.* ***A.K. Sharma***

The Westin DC Downtown
Potomac Salon 2

Chemistry of MXenes: Synthesis, Structure, Properties, and Applications

Optical, Mechanical, and Electromagnetic Properties

D. Talapin, Organizer, Presiding
S. King, Presiding

8:00 . *Origin of optical properties of $Ti_3C_2T_x$ MXenes. H. Fang, Z. Fang, A. Thakur, B. Anasori, A.M. Rappe,* ***Z. Fakhraai***

8:40 . *Surface plasmon polaritons in MXenes: Fundamental physics and emerging applications.* ***S. King***

9:10 . *Conductivity enhancement in nanoinfiltration-induced ordering and orientation of MXene nanosheets.* ***S.B. Ambade****, Z. Rosenzweig, H. Fairbrother*

9:30 *Break.*

10:00 . *Surface modification of MXenes and fabrication of MXene-polymer nanocomposites for electromagnetic shielding and thermal management.* ***C. Koo***

10:40 . *Withdrawn*

11:10 . *Surface functionalization of $Ti_3C_2T_x$ MXenes in epoxy nanocomposites: Enhancing conductivity, EMI shielding, thermal conductivity, and mechanical strength.* ***M. Shabbir Madad****, C. Koo*

The Westin DC Downtown
Rock Creek Salon A

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

Nanoparticles in Electrocatalysis

J. Chen, J. He, M. L. Personick, Y. Yin, Organizers
W. Huang, Presiding

8:00 . *Rational development of advanced catalysts for electrochemical production of hydrogen peroxide.* ***Y. Xia***

8:30 . *Single-atom catalysts and nanocatalysts for photo-& electro-catalytic hydrogen production.* ***T. Hyeon***

9:00 . *Improving nanocatalyst stability for efficient electrocatalytic reduction of CO2.* ***S. Sun***

9:30 *Break.*

9:40 . *Engineered intermetallic nanoparticles for selective catalysis.* ***W. Huang***

10:10 . *Tuning hetero-interface and multi-interface nanocrystals for heterogeneous catalysis.* ***S. Zhang****, G. Johnson*

10:40 . *Operando X-ray spectroscopy and 4D-STEM of electrocatalyst nanoparticles for CO_2 reduction.* ***P. Yang****, J. Feijóo*

The Westin DC Downtown
Rock Creek Salon B

Innovative Nanotechnology & Single Cell Imaging in Biology and Medicine

Cosponsored by ANYL, BIOL, BIOT♯ and PHYS
X. Xu, Organizer, Presiding

8:00 . *New analytical approaches to probe nanoparticle structure and properties.* ***H. Fairbrother***

8:30 . *Electron videography of membrane nanodiscs and cells.* ***Q. Chen***

9:00 . *Innovative nanobiotechnology for probing multidrug membrane transporters in single live cells.* ***X. Xu****, P. Songkiatisak, P. Cherukuri, L. Browning*

9:30 *Recess.*

9:40 . *Uniform gold nanospheres capped by citrate species for quantitative imaging and lateral flow immunoassay.* ***Y. Xia***

10:10 . *Engineering DNA-based tools for chemical and biological sensing.* ***D. Samanta***

10:40 . *Genetically encoded integrator sensors for detecting neuronal activity.* ***W. Wang***

The Westin DC Downtown
River Birch A

Nanomaterials

Synthesis, Properties and Applications

J. A. Hollingsworth, S. Hunyadi Murph, R. Nagarajan, S. Nuguri, C. M. Sims, D. Watkins, Organizers
Z. Li, D. Nguyen, Presiding

8:00 . *Polyethylene-derived quantum dots: Solvent influence on nanoparticle formation resulting in altering quantum yield.* ***B. Naumann****, J. Howell, M. Reza*

8:15 . *Synthesis of classically immiscible gold and rhodium bimetallic nanoparticles.* ***D. Grinnell****, M.E. King*

8:30 . *Shape-controlled growth of kagome colloidal crystals using nanoparticle capping ligands.* ***Z. Li***

8:45 . *Synthesis of silk-based polymer-grafted nanoparticles.* ***C. Soard****, K. Burke*

9:00 . *Directed assembly of gold bipyramids and quantum dots using click chemistry for plasmon-exciton coupling.* ***M. Daniel***

9:15 . *Highly luminescent two-dimensional silicon nanosheets.* ***J.B. Essner****, A. Bera, M. Jabrayilov, A. Chaudhari, A. Tan, B. Diroll, J.V. Zaikina, M. Panthani*

9:30 . *Leveraging galvanic exchange for the formation of shaped metal nanoparticles comprised of non-noble metals.* ***C. Wijethunga***

9:45 . *Nanoparticle coalescence as a strategy for shape controlled synthesis of colloidal nanocrystals in the liquid phase.* ***S.K. Thennakoon****, M. Zamkov*

10:00 . *Fractionation to explore fundamental self assembly properties of peptide-polymer amphiphiles.* ***A. Gringeri***

10:15 . *Microencapsulation of phase change materials by ATRP at the interface of non-aqueous emulsions. N.C. Starvaggi, C. Somodi,* ***E. Cruz****, P. Shamberger, E. Pentzer*

10:30 . *Chiral two-dimensional perovskite with giant chiroptical activity enabled by axially chiral organic cation.* ***M. Zhang****, M. Kim, Z. Lin*

10:45 . *Dielectrophoretic assembly of multifunctional nanoclusters using nanostructured dielectric electrodes.* ***T. Burgess***

11:00 . *Spectroscopic investigation into the design principles for peptide-based polyelectrolyte complex nanoparticles formed via flash nanocomplexation.* ***N. O'Neill****, C. Anderson, T. Samdin, J. Schneider*

11:15 . *MXenoids: Generalization of MXene-inspired covalent surface modifications across two-dimensional materials.* ***Y. Kim****, C. Zhou, B.A. Atterberry, V. khokhar, A.S. Thind, F.J. Lagunas, R. Lin, D. Wang, W. Cho, Z. Zhou, M. Czaikowski, A.S. Filatov, J.S. Anderson, R.F. Klie, R.D. Schaller, D. Jiang, A.J. Rossini, D. Talapin*

11:30 . *Co-crystals combining order and correlated disorder via colloidal crystal engineering with DNA.* ***Y. Li****, W. Zhou, Y. Zhou, H. Cheng, B. Lee, X. Hu, V.P. Dravid, S.C. Glotzer, C.A. Mirkin*

The Westin DC Downtown
Potomac Salon 3

Colloidal Semiconductor Nanocrystals (Including Perovskite Nanocrystals)

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

8:00 . *Withdrawn*

8:20 . *Sustainable dissolution of semiconductor nanocrystals via oleic acid treatment.* ***E. Cambiotti****, E. Fratini, L. Latterini*

8:40 . *Controlled synthesis of branched 2D polytypic CdS quantum nanostructures.* ***Y. Kim****, H. Ma, J. Yang, J. Son*

9:00 . *Compositionally engineered pure blue-emitting perovskites with improved stability for light-emitting diodes.* ***S. Gundam****, J. Hofkens*

9:20 . *Fully type-II "giant" quantum dots with microsecond lifetimes and low lasing thresholds. A. Boria-Denis, B. Diroll,* ***P. Snee***

9:40 . *Binary superlattices of infrared plasmonic and excitonic colloidal nanocrystals.* ***S. Brittman****, P.D. Cunningham, V. Policht, T. Brintlinger, P. Yee, N. Mahadik, F.L. Beyer, C. Ellis, J. Boercker*

10:00 . *Cd_3P_2 QDs emitting in the SWIR through overgrowth of cadmium phosphide clusters.* ***N. Tiwari***

10:20 . *Pseudo-solid-state near-infrared and trans-silicon upconversion sensitized by PbS quantum dots: Liquid-like efficiency in a device-compatible format.* ***E. Ho****, A. Soni, A. Chang, L. Wang*

10:40 . *Colloidal semiconductor quantum shells: optical gain without strain.* ***M. Zamkov***

11:00 . *Deciphering surface ligand density of colloidal semiconductor nanocrystals: Shape matters.* ***G. Jia***

11:20 . *Surface chemistry of Ag_8SnS_6 nanocrystals, Z-type ligand binding mechanism and anti-solvent interactions.* ***F. Yarur Villanueva****, L. Manna, M. Wilson*

11:40 . *Withdrawn*

The Westin DC Downtown
River Birch B

Surface Chemistry

Adsorption and Self-Organization

H. Cornell, C. Kasprzak, A. V. Teplyakov, L. Tribe, Organizers
N. Materer, Presiding

8:00 . *Surface structuring via photodimerization-induced molecular diffusion.* ***T. Li****, L. Sun*

8:20 . *Adsorption and desorption dynamics of self-assembled monolayers via In situ characterization techniques.* ***J. Lu****, E.M. Nichols*

8:40 . *Visualizing metal substrate effects on the adsorbate configurations of a nonplanar tetrabenzoporphyrin molecule by tip-enhanced Raman spectroscopy.* ***S. Rajak****, N. Jiang*

9:00 . *Withdrawn*

9:20 . *Electrical contact resistance: Investigating the role of siloxane precursors and their reaction products with common contaminants.* ***N. Bays****, D. Schafer, R.D. Davis*

9:40 *Break.*

10:00 . *Heterogeneous adsorption of volatile organic compounds to aerosol particle surfaces probed with in-situ surface vibrational sum-frequency scattering.* ***J.B. Brown****, Y. Qian, H. Wang, H. Fisher, Z. Huang-Fu, Y. Rao*

10:20 . *Dynamic molecular capture and release via oxide-modulated liquid metal surfaces.* ***M. Zare****, M. Vong, M. Irfan, S. Lee, C. McKelvy, F. Krisnadi, M. Daniele, Q. Wei, M.D. Dickey*

10:40 . *Allosteric antifreeze protein exhibits superior activity. Y. Shalom, F. Zypman,* ***R. Drori***

11:00 . *In silico optimization of carbonic anhydrase immobilization on the graphene oxide surface.* ***M. Fedai****, A.L. Kwansa, Y. Hwang, J. Shen, S.I. Salmon, Y.G. Yingling*

11:20 . *Mesoporous silica and beads as a sorbent and pre-concentrator for emerging contaminates in water.* ***N.F. Materer****, R. Shrestha, A. Caesar*

11:40 . *Withdrawn*

WEDNESDAY AFTERNOON

The Westin DC Downtown
Rock Creek Salon B

Innovative Nanotechnology & Single Cell Imaging in Biology and Medicine

Cosponsored by ANYL, BIOL, BIOT♯ and PHYS
X. Xu, Organizer, Presiding

2:00 . *Expansion microscopy using tensile force achieves sub- and single-cell fluorescence and mass spectrometry images.* ***L. Kisley***

2:30 . *Determining the nature of interactions and biomolecular condensates in microbes.* ***J.S. Biteen***

3:00 . *Single-molecule spectroscopy and force manipulation studies of protein dynamics and signaling.* ***H. Lu***

3:30 *Recess.*

3:40 . *Controlling single cell migration with nanoparticles.* ***C.J. Murphy***

4:10 . *Magnetic cargo (MagCar) for single-cell proteomics in the vertebrate organizer.* ***M. Islam****, J. Li, P. Nemes*

4:30 . *Photocatalytic crosslinking-activated droplet sorting (PhoCADS): Microfluidics-free sorting of single cells and biomolecules.* ***S. Luo****, W. Zong, X. Zhao, D.A. Weitz*

The Westin DC Downtown
Rock Creek Salon C

Mentoring Undergraduate Surface Science Research

Catalysts, Composites, and Connections: Exploring Surfaces and Mechanisms Across Scales

A. Baber, E. V. Iski, G. Y. Stokes, Organizers
G. Avila-Bront, Organizer, Presiding

2:00 . *Spectroscopic analysis of metal-organic framework composite materials.* ***A. Devlin****, K. Ellis*

2:20 . *Withdrawn*

2:40 . *Withdrawn*

3:00 . *Understanding the bonding at the surface-adsorbate interface: Modulating the N-heterocyclic carbene-single atom alloy interface.* ***S. Simpson***

3:20 . *Establishing mechanistic pathways for photoredox catalyzed reactions using time-resolved spectroscopy.* ***M. Sneha****, M.S. Salinas*

3:40 . *Undergraduate ultrahigh vacuum research: small alcohol selectivity over metal-supported oxides.* ***A. Baber***

4:00 *Concluding Remarks.*

The Westin DC Downtown
Potomac Salon 2

Chemistry of MXenes: Synthesis, Structure, Properties, and Applications

Composites and Applications

B. Anasori, Organizer, Presiding
P. P. Michalowski, Presiding

2:00 . *Applications of two-dimensional metal carbides (MXenes) composites for the removal of emerging contaminants from water.* ***K.A. Mahmoud***

2:40 . *Withdrawn*

3:10 . *Nacre-like MXene/polyacrylic acid layer-by-layer films as hydrogen gas barriers.* ***Y. Auh****, M. Radovic, M. Green, H. Yamaguchi, J.L. Lutkenhaus*

3:30 *Break.*

4:00 . *Advancing bioinspired and composite MXene materials through high-accuracy simulations.* ***H. Heinz****, I. Armstrong, L. Beck, C. Zhu, J. Slocik, D. Nepal, V. Varshney*

4:40 . *Unlocking the next generation cancer nanotherapeutics through omic analysis: Case study with MXenes.* ***A. Yilmazer***

5:10 . *Investigating the impact of algae on the structural and functional properties of MXene nanomaterials.* ***D. Devkota****, Z. Rosenzweig, R. Klaper, E. Ostovich*

The Westin DC Downtown
Rock Creek Salon A

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

Nanoparticle Synthesis and Optical Properties

J. Chen, J. He, M. L. Personick, Y. Yin, Organizers
M. E. King, Presiding

2:00 . *Ligand dynamics and reactivity on gold nanocrystals.* ***C.J. Murphy***

2:30 . *Controlling silver nanocrystals synthesis using alkyl sulfonates.* ***M.P. Hendricks****, N. Myers, C. Hansen, C. Hermanson*

3:00 . *Combining immiscible metals at the nanoscale. D.J. Grinnell,* ***M.E. King***

3:30 . *Hybrid nanostructure design with soft and hard shells.* ***J. Kim***

4:00 *Break.*

4:10 . *Super-resolution imaging of plasmon-mediated DNA melting.* ***K.A. Willets***

4:40 . *Withdrawn*

5:10 . *Chiral nanostructures for polarization optics for extreme conditions.* ***N. Kotov***

The Westin DC Downtown
River Birch A

Nanomaterials

Synthesis, Properties and Applications

J. A. Hollingsworth, S. Hunyadi Murph, R. Nagarajan, S. Nuguri, C. M. Sims, D. Watkins, Organizers
O. Love, C. Zhong, Presiding

2:00 . *Liquid-nanoporous material composites for energy dissipation system.* ***B. Xu***

2:15 . *Magic-size clusters in amorphous cores of ultrasmall core-shell silica nanoparticles.* ***D. Jang****, R.S. Skye, T.C. Gardinier, R. Lee, M.Z. Turker, J. Dshemuchadse, U.B. Wiesner*

2:30 . *Impact of repeated solvent processing on morphology, chemical stability and conductivity of* $Ti_3C_2T_x$ *MXene flakes.* ***K. Usman****, J. Razal*

2:45 . *Synthesis of nanodiamonds encapsulated by zeolitic imidazole framework-8 for quantum sensing applications.* ***S. Crawford****, R. Shugayev, J.P. Baltrus, N. Diemler, J. Ellis, K. Kim, Y. Duan*

3:00 . *Exploring guanine conjugation in DNA-wrapped carbon nanotubes with quantum calculations and enhanced molecular dynamics simulations.* ***S. Chakraborty****, L. Vukovic*

3:15 . *Size-dependent surface chemistry of porous nanocrystals.* ***A. Davenport****, S. Horike, C. Brozek*

3:30 . *Dynamic surface potential induced by competitive ion adsorption switches particle-attaching facets.* ***Y. Bae****, E. Kim, J. Chun, K. Fichthorn, J. De Yoreo, D. Li*

3:45 . *How defects freeze ripples in 2D materials.* ***F. Thiemann****, C. Scalliet, E.A. Müller, A. Michaelides*

4:00 . *Visualizing multiple metastable cholesteric phases in electrospun microfibers.* ***M.D. Thum****, J. Kolacz*

4:15 . *Microphase-separated moldable resins for the development of tunable structural energetics.* ***S.S. Shah****, N. Cho, B. Llumiquinga, I. You, S. Esola, J.P. Singer*

4:30 . *Optimizing lipid composition to enhance mRNA encapsulation in thermostable solid-state mRNA-LNP vaccines.* ***B. Eshaghi****, C. Sloane, Z. Wu, D. Artzi, K. Staykov, J. Tian, T. Forster, R. Langer, A. Jaklenec*

4:45 . *Engineering human carbonic anhydrase II and ultrasmall gold nanoparticles into enzyme-functionalized nanocarriers: For drug delivery applications.* ***M. Sanchez Machado****, M.A. Ilies*

5:00 . *Nanostructured assemblies and thin films: Chemical sensing and biosensing interfaces.* ***C. Zhong***

5:15 . *Vertically boron nitride nanosheets guided by nanocellulose networks for high thermal conductive composites.* ***C. Liu****, O. Laitinen, H. Liimatainen*

5:30 . *Surface-Bulk, surface, and bulk* Ni^{2+} *doping in brookite titanium dioxide nanoparticles.* ***O. Love****, P. Lyu, L. Coward*

The Westin DC Downtown
Potomac Salon 3

Colloidal Semiconductor Nanocrystals (Including Perovskite Nanocrystals)

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

2:00 . *Tailoring high-entropy Cu-Sb-Bi-Ag-Zn-S colloidal nanocrystals via cation exchange for electrochemical applications.* ***A. Bora****, S. Sen, N. Patil, S. Singh, K. Ryan*

2:20 . *Withdrawn*

2:40 . *Crystallization of calcium oxalate in presence of citrate and Ni ions.* ***P.L. Rehak****, P. Kral*

3:00 . *Quantum dots pattern array fluorescent sensors for virus multiplex detection.* ***O. Adegoke***

3:20 . *Withdrawn*

3:40 . *Time-resolved super-resolution localization microscopy to image photoluminescence lifetimes and energy transport in semiconductor quantum dots patterned on DNA origami.* ***A.K. Van Orden****, D.P. Ryan, J. Werner, P. Goodwin, C. Green, S. Diaz, I. Medintz, K. Susumu, M. Stewart, M. Gelfand*

4:00 . *Core/shell perovskite nanocrystals with enhanced environmental stability and optoelectronic properties.* ***W. Zheng***

4:20 . *Overcoming the short-wave infrared barrier in the photoluminescence of amino-As based Indium Arsenide quantum dots.* ***S. Panda****, L. De Trizio, L. Manna*

4:40 . *Perovskite nanocrystal photocatalysts for energy-transfer-induced alkene photocycloaddition.* ***L. Wang***

5:00 . *Towards systematic synthetic control of charge carrier trapping/de-trapping and exciton recombination rates in ternary and quaternary I-(II)-III-VI quantum dots.* ***C.D. Heyes***

5:20 . *Time-resolved fluorescence of $CuInS_2$/ZnSeS core/shells at the ensemble and single-particle level.* ***H. Kaur****, C.D. Heyes*

5:40 . *Enhancing the stability of perovskite quantum dots using metal-organic frameworks.* ***P. Ariyaratne****, M.E. Kordesch, J. Chen*

The Westin DC Downtown
River Birch B

Surface Chemistry

Surface Molecular Chemistry and 2D

H. Cornell, C. Kasprzak, A. V. Teplyakov, Organizers
L. Tribe, Organizer, Presiding

2:00 . *Ni Nanocluster and Intercalation in Graphene/Ir(111).* ***S. Choyal****, M. Trenary, N. Jiang*

2:20 . *Withdrawn*

2:40 . *Probing the multi-step surface reactions for Bodipy polypyridyl complex attachment on Si (100) using SFG spectroscopy.* ***S. Sunday****, K.A. Cimatu, E. Skelton, D. Ingram, M.E. Kordesch*

3:00 . *High vacuum infrared studies of the adsorption and decomposition of sarin with reducible metal oxides.* ***M. Leonard****, E.M. Durke, E. Bruni, M. Hall, T. Li, E.E. Rodriguez, M. Yousuf, J.R. Morris, A.M. Karim, T.P. Pearl, C.J. Karwacki*

3:20 . *Tuning single-molecule conductance using ancillary chemisorbed species.* ***M. Sharma****, J. Prana, L. Kim, Z. Miao, T.M. Czyszczon-Burton, M.S. Inkpen*

3:40 . *Characterizing sigma donation and pi backbonding in molecular 'corks' on copper–palladium single-atom alloy surfaces.* ***D. Mulvey****, S. Simpson*

4:00 *Break.*

4:20 . *Hydride and hydrogen atom transfer reactivity of silicon nanoparticles: Stoichiometry, kinetics, and thermodynamics.* ***A.K. Williams****, A. Berlanga, J.M. Mayer*

4:40 . *Withdrawn*

5:00 . *Chemo-structural evolution of $LiCoO_2$ (001) under varied oxygen chemical potentials.* ***Y. Niu****, K. Gaskell, J.E. Reutt-Robey*

5:20 . *Assessment of composition and structural ordering in ultrathin bismuth selenide films and effects of support: Study by Raman spectroscopy in non-polarized and polarized modes, XRD, and AFM. S. Sharmin, A. Raihan, D. Seifu,* ***A. Samokhvalov***

5:40 . *Nanometer films of bismuth selenide: Deposition, chemical analysis and nano-morphology by complementary instrumental analysis.* ***S. Sharmin****, A. Samokhvalov, A. Raihan, D. Seifu, A. Lisfi*

WEDNESDAY EVENING

Walter E. Washington Convention Center
Hall C

Active & Responsive Matter

A. Liu, D. Tree, Organizers

6:00 375. *Withdrawn*

6:00 376. *Development of four-arm peg-based thermoresponsive prodrugs of dexamethasone.* ***Y. Deng****, J. Rong, D. Wang*

6:00 378. *Electric-field manipulation of MOF and COF nanoparticles for dynamic color control.* ***J. Chin****, T. Zorlu, F. Schoefbeck*

6:00 380. *Active and thermally stable plasmonic nanoparticles for enhanced sensing and anticounterfeiting technologies.* ***A. Aggarwal****, S.E. Skrabalak*

6:00 381. *Surface engineering with dynamic polymers for rapid and adaptive sensing.* ***G. Aktas Eken****, C.K. Ober*

6:00 382. *Color-changing paints enabled by photoresponsive combinations of bio-inspired colorants and titanium dioxide semiconductors.* ***C.L. Martin****, K. Flynn, I. Taylor, L. Shaikh, K. O'Sullivan, D.J. Wilson*

Walter E. Washington Convention Center
Hall C

Atomically Precise Nanomaterials: Connecting Coordination, Cluster, Colloidal, & Crystal Chemistry

S. Ivanov, C. Zeng, S. Zhang, Organizers

6:00 383. *Mechanism for the bottom-up synthesis of polyethylene quantum dots utilizing the solvothermal approach.* ***J. Howell****, B. Naumann, M. Reza*

6:00 384. *Exploring ligated gold and silver nanoparticles using Post-DFT methods.* ***B. Moll****, P. Thomas, A.Z. Clayborne*

6:00 391. *Growth of high optical quality large-area WX_2 (X=S, Se) films through controlled reduction of WO_3.* ***P. Hanrahan****, T. Kempa, R. Dziobek-Garrett*

6:00 392. *Doping modulated surface energy for tunable growth of two-dimensional CdSe nanoplatelets.* ***V. Vanshika***

Walter E. Washington Convention Center
Hall C

Basic Research in Colloids, Surfactants & Interfaces

S. Hunyadi Murph, S. Kamdar, A. Mallia, U. Natarajan, D. Nguyen, Z. Niroobakhsh, Organizers

6:00 393. *Scalable production of double-layer superhydrophobic coating with superior adhesion and high corrosion resistance via screen printing and UV curing. S. Wang, Y. Yu,* ***C. Zhou****, S. Yang*

6:00 . *Withdrawn*

6:00 394. *Plasmonic metal nanostructures for enhancing visible light activity of ZnO.* ***S. Adhinarayanan****, H. Muraleedharan Jalajamony, S. De, M. Watson, R. Adu, G. Ramesh, R. Fernandez*

6:00 395. *Surface modification of carbon fibre for multifunctional and sustainable composites.* ***M.B. Dharmasiri***

6:00 396. *Seeding-induced synthesis of zeolites: Innovative pathways and emerging materials.* ***Z. Xiao****, M. Shao, Z. Liu*

6:00 397. *Perspectives of true binary ferroelectric nanoparticles of ε−WO_3: Challenges and opportunities.* ***M. Rahaman****, F. Jose, M. Noor, M.R. Adnan, A. Blackston, E. Chowdhury, R. Myers, M. Newburger, P. Gouma*

6:00 398. *Carbon-based catalysts structure design for catalytic dehydrogenation of liquid organic hydrogen carriers.* ***G. Cui***

6:00 399. *Photoprotective emulsions utilizing low molecular weight biosurfactants.* ***C. Posner****, A. Xu, F. Adeosun, S. Amin*

6:00 400. *TiO_2 heterostructure nanowire arrays.* ***J. Symuleski****, R. Medhi, B.J. Tormey*

6:00 459. *Dynamic light scattering: A tool for virus diagnosis from particle to biomarkers. D.L. D'amato Leite, I.A. Bessa, M. Carvalho de Oliveira, A.B. Costa Souza, C. Carvalho de Mello, G. Machado, C. Bastos Pereira Ligiero,* ***C. Machado Ronconi***

6:00 . *Withdrawn*

6:00 460. *Mesenchymal stem cell differentiation by gold nanoparticles: Applications in tissue therapy.* ***S. Lassard****, S. Snyder, B. Almeida, M.E. King*

6:00 461. *Withdrawn*

6:00 462. *External electric field-enhanced decomposition of PFAS by upconverted hot electrons from Mn-doped quantum dots.* ***I. Schulze****, C. Orrison, Z. Zhang, C. Hilty, D. Son*

6:00 463. *Hydrogel applications in art conservation.* ***B. Thompson****, G. Brownstein, T. Shannon, M. Lynch, N.J. Wagner*

6:00 464. *Advancing early cancer detection with nanoparticle-based sensors.* ***M. Sadegh***

6:00 465. *MD simulations of dicarboxylate polyelectrolyte poly(itaconic acid) (PIA) in dilute aqueous solution: Chain conformations, hydration and thermodynamics.* ***U. Natarajan****, G. Rai*

6:00 466. *Withdrawn*

Walter E. Washington Convention Center
Hall C

Biomaterials and Biointerfaces

E. S. Andreescu, C. P. Collier, S. Sinha Ray, V. Sundaram, Organizers

6:00 467. *Anti-biofilm properties of ionic liquid mixed acrylic resins produced by VAT polymerization method.* ***H. Kanematsu****, S. Tsutsui, A. Ogawa, T. Kogo, H. Miura, N. Hirai, T. Saiki, A. Otsu, A. Hirayama, K. Tsunashima, R. Kawai, T. Nakano*

6:00 468. *Anti-antibiotic colloidal particles to mitigate resistance emergence.* ***A. Sheikhi***

6:00 475. *X-ray and Magnetic Resonance Study of Silicon Carbide Nanofiller-PDMS Interaction.* ***N. Tomskikh****,* ***A. Algemesh****, S. Rahman, A. Ngono, Z. Vinokur,* ***T. Suzuki****,* ***D. Djuraev****, S. Kissoon,* ***J. Cheung****, K. Thangaraj, S. Sarkar, X. Wu*

6:00 476. *Role of poly-arginine tails in the interactions of antimicrobial peptides with lipid membranes.* ***N. Kaur****, E. Mihailescu*

6:00 477. *Creating conductive polymer nanofibers for biological sensing applications.* ***K. Liu****, R.A. Hunter*

6:00 478. *Synthetic design, optimization, and scale-up of serine-based dimethacrylate cross-linkers for incorporation into polyampholyte hydrogels.* ***R. Hubbard****, S. Oneida, A.E. Shea, M.T. Bernards, K.V. Waynant*

6:00 479. *Developing scalable syntheses to create a library of methacrylamide based zwitterionic crosslinkers for polyampholyte production.* ***M. Witherwax****, C. Malloy, A. Pollard, M.T. Bernards, K.V. Waynant*

6:00 D10. *Laponite nanocarrier for sustained release of chloroquine.* ***J.C. Onojah****, M. Sani, C. Davis, D. Raghavan*

6:00 481. *Thymoquinone-loaded polypropyleneglycol functionalized silver nanoparticles, exploring drug loading efficacy and biomedical applications.* ***A. Bano****, D. Raja, M. Malik, A. Ahmed*

6:00 482. *Directing membrane-lytic peptide folding and anticancer activity within the tumor microenvironment.* ***H. Furukawa****, Y. Xie, J. Schneider*

6:00 483. *Exploring membrane water permeability changes induced by exogenous molecules.* ***G. Mazzo****, S. Lee*

6:00 484. *Membrane responses to drug exposure: A confocal Raman spectroscopic investigation.* ***J. Mitchell****, S. Lee*

6:00 543. *Thermotropic investigation of artificial sweeteners with lipid membranes.* ***J. Caruso****, S. Lee*

6:00 544. *Interfacial dynamics of lipid membrane-small molecule interactions.* ***M. Agosti****, S. Lee*

6:00 545. *Calorimetric insights into API-induced membrane perturbations.* ***J. Ceja****, S. Lee*

6:00 546. *ATR-FTIR study of bioactive molecules-lipid interactions in model membranes.* ***H. Farnan****, S. Lee*

6:00 547. *Biophysical effects of small molecules on lipid membrane permeability.* ***J. Said****, S. Lee*

6:00 548. *Probing drug-membrane interactions via confocal Raman spectroscopic analysis.* ***E. Andersen****, S. Lee*

6:00 549. *Bacterial hydrophobicity and biofilm formation at oil-water interfaces: Implications for food safety.* ***Y. Wang****, Y. Luo*

6:00 D09. *Direct fabrication of carbon-based coatings on nitinol substrate for enhanced vascular stent design.* ***P. Ng****, Y. Zhang, T. Jim, X. Liu, M. Lin, A. Ivanov, V. Sorokin, K. Novoselov, D. Andreeva*

6:00 551. *Electronegative methacrylate copolymers as corneal prostheses.* ***P. Betts****, R.P. Ramasinghe, T. Williams, K.A. Cimatu*

6:00 552. *Surface modified nanoparticles for targeted drug delivery and metastasis inhibition in cancer therapy.* ***P. Chen***

6:00 559. *Quaternary ammonium-functionalized poly(amidoamine) for treating periodontal pathogens.* ***A.L. Lynch****, T.D. Ramrattan, S.M. Wallet, M.H. Schoenfisch*

Walter E. Washington Convention Center
Hall C

Colloidal Semiconductor Nanocrystals (Including Perovskite Nanocrystals)

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

6:00 560. *Exploring tetrazine based organic cations in two dimensional organic-inorganic hybrid perovskites.* ***C.J. Gloor****, Z. Gan, J. Shanahan, S. Bhattacharya, J. Hu, L. Yan, A.M. Moran, W. You*

6:00 561. *Triplet sensitization photon upconversion using near-infrared indirect-bandgap* $AgBiS_2$ *nanocrystals.* ***K. Chang****, W. Liang, S. Gong, P. Yeung, J. FENG, X. Chen, H. Lu*

6:00 562. *Single-source precursor-mediated colloidal Cu-Zn-Sn-Co-Ni-S nanocrystals as efficient electrocatalysts for* CO_2 *reduction reactions.* ***A. Bora****, S. Sen, N. Patil, S. Singh*

6:00 563. *Withdrawn*

6:00 564. *Solid-state synthesis of* $Si_{1-x}Ge_x$ *nanoalloys with size and composition-tunable energy gaps and optical properties.* ***R. Fouzie****, I.U. Arachchige*

6:00 565. *Temperature-dependent energy transfer dynamics in* $InP/Mn_xZn_{1-x}S$ *core/shell quantum dots.* ***K. Liu****, E. Gi, B. Jiang, J.H. Olshansky*

6:00 566. *Size control of copper indium sulfide semiconductor nanocrystals through tuning electronic properties of substituted thioureas.* ***T.H. Edmunds****, W.K. Willard, S. Hughes*

6:00 567. *Effect of Si/Sn on the energy gap dynamics and optical efficiency of solution-processed ternary* $Ge_{1-x-y}Si_ySn_x$ *quantum dots.* ***C.J. Onukwughara****, D. Pate, Ü. Özgür, I.U. Arachchige*

Walter E. Washington Convention Center
Hall C

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

J. Chen, J. He, M. L. Personick, Y. Yin, Organizers

6:00 568. *Ferrocene-functionalized CdSe quantum dots as photocatalysts for hydrogen evolution.* K.E. García-Pedraza, ***N. Reilly***, D. Watson

6:00 627. *Colloidal synthesized $Cs_4Mn_xCu_{1-x}Sb_2Cl_{12}$ ($0 \leq x \leq 1$) layered double Perovskite nanocrystal for spin polarized photocatalytic CO_2 reduction.* ***R. Wu***, T. Cai, X. Chen, O. Chen

6:00 628. *Synthesis of non-equilibrium III-V nanocrystals by kinetic-controlled transformation.* ***B. Wu***, S. Yang, Y. Zhang, P. Alivisatos

Walter E. Washington Convention Center
Hall C

Fundamental Research in Colloids, Surfaces and Nanomaterials

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

6:00 629. *Development of polymeric films for bacterial anti-adhesion: Impact of topographic and physicochemical properties.* ***M.K. Gunawardana***, D. Gurecio, K. Ramcharan, K. Gunarathne, B.S. Hsiao, S.T. Laughlin, E.M. Boon, S.R. Bhatia

6:00 630. *Z-scheme heterojunction g-C_3N_4/Bi_2WO_6 highly efficient degradation of levofloxacin: Performance, mechanism and degradation pathway.* ***M. Wei***

6:00 631. *Plasmonic light emissions from Al/Al_2O_3-AgNP tunneling junctions.* ***R. Islam***, G. Chumanov

6:00 632. *Optimization of synthetic conditions to maximize the fluorescent property of gold nanoclusters with thiolate ligands.* ***G.M. Milligan***, O.B. Okereke, M. Kirchoff, G. Gonzalez, J. Kim

6:00 633. *Computational analysis of germanium(IV) hydroxide and its polymers.* ***R. Inman***, F. Lopez, A. Kayton, J.F. Destino, M. Long

6:00 634. *Fabrication of recycled carbon black for the development of highly reactive supported catalysts.* ***O.B. Okereke***, G.M. Milligan, M. Kirchoff, G. Gonzalez, H. Park, J. Kim

6:00 635. *Emulsions stabilized by nanoclays and polymers: Behavior of Pickering emulsions in the presence of polymers.* ***H.N. Disanayaka****, N. Gunawardhana, S.T. Laughlin, S.R. Bhatia*

6:00 636. *N-heterocyclic carbene monolayers as mass tags for biomolecule analysis using LDI-MS.* ***L.C. Ekowo****, N. Dominique, G. Kaur, D.M. Jenkins, J.P. Camden*

6:00 643. *Morphological comparison of solid nanorod and hollow nanoparticle* $Fe_{1-x}Mn_xP$ *and its influence on the electrocatalytic hydrogen evolution reaction.* ***J. Baker****, D. Wang, K. Lao, I.U. Arachchige*

6:00 644. *Shaped synthesis of magnesium nanoparticles using electrochemistry.* ***M. Clot****, M.E. King*

6:00 645. *Surface functionalization of gold nanospheres in biologically relevant solutions with diversely functionalized peptoids.* ***I. Matusich****, M. Batek, H. Goldberg, N. Raman, J. Hong, A.A. Fuller*

6:00 646. *Withdrawn*

6:00 647. *Unveiling the interaction: Quercetin-loaded nanoemulsions and bovine serum albumin.* ***L.T. Sanchez****, A.A. Arboleda, E.A. Pineda-Gutierrez, S.E. Moya,* ***C.C. Villa***

Walter E. Washington Convention Center
Hall C

Mentoring Undergraduate Surface Science Research

G. Avila-Bront, A. Baber, E. V. Iski, G. Y. Stokes, Organizers

6:00 648. *Functionalization and phase transfer of gold and silver nanoparticles into non-aqueous media.* ***M. Jasienski****,* ***M. Waltz****, R. Medhi*

6:00 649. *Understanding the impact of polyol stereochemistry on chitosan film morphologies using scanning electron microscopy.* ***N.E. Morris****, O.E. Coer, G.M. Peters, B. Boardman*

6:00 650. *Effect of microplastic surface functional group and temperature on molecular adsorption: A mechanistic study.* ***K. Adams****, A. Ojha, I. Kanu, M. Subir*

6:00 651. *Fluorescent microparticle formulation towards use in the quenchiometric detection of heavy metal ions.* ***J.O. Wilson****, K. Liu, A. Mathew, N. Viswaroopan, J.F. Destino*

6:00 652. *Ethylenediamine-functionalized silica nanoparticles for use in metal-binding applications.* ***M.G. Wilson****, M.J. Varguez, A.R. Carr, J.F. Destino*

6:00 711. *Monitoring antipsychotics adsorbed to phospholipid bilayers and monolayers. G.Y. Stokes,* ***H.A. Cowe***

6:00 712. *Biophysical studies of peptoid-lipid and peptide-lipid interactions.* ***L.C. Gebhardt****, H.A. Cowe, K. Temiralieva, E.J. Anderson, A.A. Fuller, G.Y. Stokes*

6:00 713. *Adsorption equilibrium and kinetics at colloidal oil-water interface: Effect of charge and aromatic surfactants.* ***L. Lewison****, D. Coers, M. Subir*

Walter E. Washington Convention Center
Hall C

Nanomaterials

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

6:00 714. *Structure factor and shear induced crystallization of PEGylated nanoparticles.* ***K. Rehmann****, K. Weigandt*

6:00 715. *Development of metal nanoparticles of different shapes using novel reducing agents and shape directing stabilizers.* ***R. Narayanan****, J. Turner*

6:00 716. *Withdrawn*

6:00 717. *Withdrawn*

6:00 718. *Investigating adsorption of mono/oligo-saccharides on carbon nanotubes using molecular simulations.* ***P. Farzeen****, S. Deshmukh*

6:00 719. *Withdrawn*

6:00 720. *Nano-enabled PFAS-free hydrophobic cotton fiber.* ***M. Kashem****, S. Nam, M.B. Hillyer, F. Hassan, D. Fang*

6:00 727. *Combining sedimentation method and DLS for accurate nano- and micro-particle size analysis.* ***Z. Guo****, B. Barnum, K. Park*

6:00 . *Withdrawn*

6:00 728. *Commensurate rates between Ag halide dissolution and autocatalytic Ag^+ reduction are required for nanocube formation in the polyol synthesis.* ***F. Messick****, K. MacIntosh, R.M. Rioux*

6:00 729. *Design and optimization of loading of a lipophilic carbonic anhydrase inhibitor into PLGA nanoparticles and its detection using LC/MS-MS method.* ***S.A. Khan****, M.A. Ilies*

6:00 730. *Hexabenzocoronene-containing flexible ligands for nanocarbon complexation and processing.* ***S.H. Alajmi****, F. Campos, L. Mosca*

6:00 731. *Hierarchical photonic stripes: How nanoscale magnets interact?.* ***A. Sun***

6:00 732. *Control light polarization in reconfigurable photonic moiré superstructures.* ***J. Wilson***

6:00 . *Withdrawn*

6:00 733. *Structural modulation of $BiVO_4$ photoanodes: Unraveling the synergistic effects of molybdenum and graphene for enhanced photoelectrochemical water splitting.* ***M.S. Tamboli****, C. Park*

6:00 734. *Characterization of disulfide-terminated DNA attachment to silver nanoparticles.* ***M. Mega****, A. Schiavone, M. Sargent, B.L. Baldock*

6:00 . *Withdrawn*

6:00 735. *Metal oxide nanoparticles with tuned interfaces as templates for controlled nucleation of glycine polymorphs.* ***R. Yarinia****, A. Nosrati, J.D. Rimer, T. Lee*

6:00 736. *Fluorinated polyimide-derived laser-induced graphene for ultrasensitive and selective thrombin detection via nanoporous architectures.* ***H. Kim****, S. Lee, B.G. Kim, P. Kang*

6:00 785. *High-absorption quantum dots based on ordered vacancy compounds (OVCs).* ***S. Im****, J. Lee, J. Kim, S. Min, D. Jung*

6:00 786. *Z-scheme g-C_3N_4/carbon dots-Ag/AgBr ternary heterojunction with enhanced visible-light photodegradation of Tetracycline.* ***S. Sanni***

6:00 787. *Unexplored catalytic potency of a magnetic $CoFe_2O_4$/Ni-BDC MOF composite for the one-pot sustainable synthesis of 5-substituted 1-H Tetrazoles.* ***P. Priyanka***

Walter E. Washington Convention Center
Hall C

Surface Chemistry

H. Cornell, C. Kasprzak, A. V. Teplyakov, L. Tribe, Organizers

6:00 788. *Suppressing oxides growth on aluminum for enhanced performance of superconducting quantum circuits using self-assembled monolayers.* ***O.a. Saleh***, ***S.G. Rao***, ***K. Alam***

6:00 789. *ACS Petroleum Research Fund (ACS PRF): Impact on the field of surface science. L. Fernandez, S. Nicholson,* ***J. Schlatterer***

6:00 790. *Exploring the epoxidation of isoprene on copper-based catalysts.* ***J. Whitted****, M. Corbett, A. Baber*

6:00 797. *Physical characterization of environmental film maturation and succession in Iowa city, Texas and Hawaii.* ***U.G. Akporere****, M.T. Okunade, E. Bieber, A. Millard, S.K. Shaw*

6:00 798. *Surface and interface studies to develop a highly sensitive chemiresistive pH sensor.* ***M. Darestanifarahani****, P. Kruse*

6:00 799. *Tuning the specific surface area and adsorption energy of graphene oxide for room-temperature hydrogen storage.* ***M. Myekhlai****, H. Oh*

6:00 800. *Impact of molecular structure and co-additives on tribochemical processes.* ***E. De Koker***, ***J. Levering****, M.B. Elinski*

6:00 801. *Modulating the electronic properties of orthorhombic Mo_2C surfaces with strain and defects: Insights from first-principles calculations.* ***S. Kumar****, G. Adabasi, M.Z. Baykara, A. Martini*

THURSDAY MORNING

The Westin DC Downtown
Rock Creek Salon C

Frontiers and Challenges in Nanoparticle-Mediated Chemical Transformations

Porous Materials, Carbides, and Graphene

J. Chen, M. L. Personick, Y. Yin, Organizers
J. He, Organizer, Presiding

8:00 . *Enhanced sorption and kinetics through multi-scale architected nanostructuring of zeolitic and metal oxides.* ***P. Gao***

8:30 . *Fixing metal nanoparticles inside of zeolite crystals for efficient catalysis.* ***F. Xiao***

9:00 . *Transition metal carbide-based nanoparticles for catalytic production of sustainable aviation fuel.* ***H. Yang****, S. Yu, H. He, R. Gao, A. Song*

9:30 . *Nanoporous liquids: A new platform for chemical transformation.* ***S. Dai***

10:00 . *Mechanical properties at materials interface: A surface science study at single molecule level. A. Wijerathna, M. Zirnheld, H. Zhao, P. Wang, Y. Li,* ***Y. Zhang***

The Westin DC Downtown
Rock Creek Salon B

Chemistry of MXenes: Synthesis, Structure, Properties, and Applications

Early Career

A. Thakur, Organizer, Presiding
Y. Kim, Presiding

8:00 . *Order to disorder transition in MAX & MXenes due to entropy.* ***B.C. Wyatt****, Y. Yang, D. Jiang, P.P. Michalowski, B. Anasori*

8:25 . *Decoding order and disorder in high-entropy MAX phases. B.C. Wyatt,* ***Y. Yang****, P. Michalowski, D. Jiang, B. Anasori*

8:50 . *Synthesis of hybrid organic–inorganic MXenes: Mechanistic insights into halide-to-organic transformations.* ***Y. Kim****, M. Czaikowski, V. khokhar, D. Jiang, J.S. Anderson, D. Talapin*

9:15 . *From discovery to the advancement of direct MXene synthesis.* ***D. Wang****, N. Mason, F.J. Lagunas, F. Karimi, Y. Yang, D. Jiang, R.F. Klie, D. Talapin*

9:40 *Break.*

10:10 . *Withdrawn*

10:35 . *Structure, properties, reactivity, and dynamics of organic functional groups on Ti3C2 MXene.* ***V. khokhar***

11:00 . *Effect of inter-Flake trapped water on the thermal, optical, and electronical properties of MXenes.* ***H. Fang****, Z. Fang, A. Thakur, A. Zahmatkeshsaredorahi, V. Rad, P.P. Michalowski, M. Soroush, X. Xu, B. Anasori, A.M. Rappe, Z. Fakhraai*

11:25 . *Tunable ion transportation within MXene nanoconfinement.* ***Y. Zhang****, P. Michalowski, D. Jiang, A. Kornyshev, Y. Gogotsi*