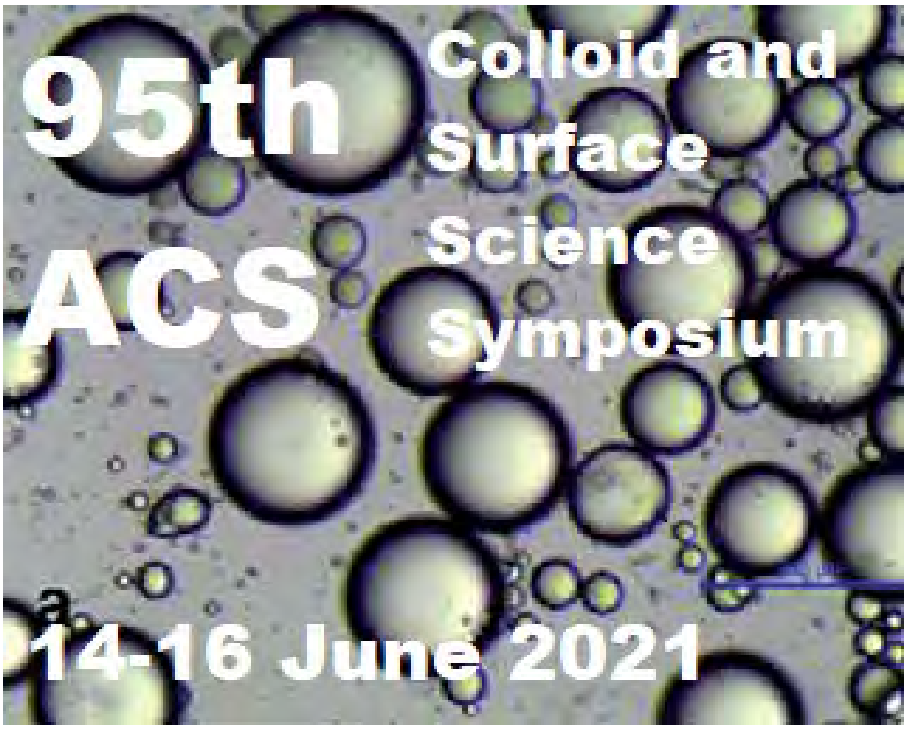

Virtual Meeting

All times correspond to US Eastern Time Zone

95th CSSS Co-Chairs

Matthew Helgeson, University of California, Santa Barbara

Sibani Lisa Biswal, Rice University

Ramanathan Nagarajan, DEVCOM Soldier Center

Welcome Message from 95th CSSS Co-Chairs

Matthew Helgeson
University of California – Santa Barbara

Sibani Lisa Biswal
Rice University

Ramanathan Nagarajan
DEVCOM Soldier Center

Welcome to the 95th Colloid and Surface Science symposium (CSSS) and the experience of a virtual environment for exchange of ideas.

The ACS Colloid and Surface Science Symposium got its start in 1923, with the first symposium built around the work of Theodor Svedberg, Nobel laureate recognized for his research on colloids and proteins using the ultracentrifuge. Since then the summer colloid symposium has continued to be organized every year except in 1933 because of the Great Depression and 1943-45 because of World War II. The availability of virtual meeting platforms, has made possible both the 2020 and the 2021 symposia, in spite of the devastation from COVID-19 pandemic dominating globally.

The 95th CSSS will highlight advances in colloid and surface science and its intersections with diverse scientific and technological domains through 16 thematic technical symposia, a fundamental research/general papers symposium and a poster symposium. The 95th CSSS will feature two plenary lectures, by Maria Santore (U Mass) and Catherine Murphy (Illinois). There will be two Unilever award lectures by Sujit Datta (Princeton) and Lilian Xiao (NC State), the 2020 and 2021 winners recognized for fundamental work in colloid or surfactant science carried out in North America by researchers in the early stages of their careers. There will also be two Victor K. LaMer award lectures given by Xiao Su (Illinois) and Rose Cersonsky (EPFL, Switzerland), the 2020 and 2021 winners, recognized for outstanding Ph.D. thesis accepted by a US or Canadian university during the three-year period prior to the award year. There will be keynote lectures in all of the topical areas and five LaMer Award finalists will also present LaMer Keynote lectures within multiple technical sessions. As in past symposia, there will also be an exhibition highlighting advances in instrumental techniques in colloid and surface science, but will take place virtually with live interactions.

Student focused activities are always a highlight for the summer Colloid and Surface Science Symposia. The 95th CSSS will feature awards for best graduate student oral presentations, sponsored by the ACS journal Langmuir and the ACS Division of Colloid and Surface Chemistry. Student posters will also be judged for best poster awards sponsored by the ACS journals.

We invite you to meet with old friends and make new friends in the virtual environment and enjoy a fruitful conference.

TABLE OF CONTENTS

Technical Symposia and Organizers

Self and Directed Assembly in Colloidal Systems

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Advanced Experimental Methods in Colloid and Interface Science

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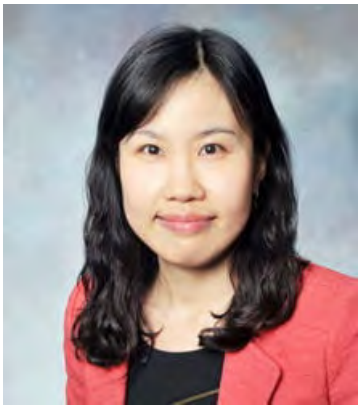
Surface and Interfacial Forces



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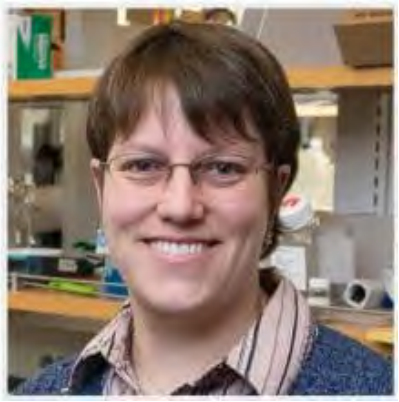

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Davita Watkins, University of Mississippi

SUMMARY PROGRAM VIEW

All Times ET

Time	Monday, June 14	Tuesday, June 15	Wednesday June 16
9:00 -11:00	Technical Sessions M1	Technical Sessions T1	Technical Sessions W1
11:00 – 11:20	*Break*	*Break*	*Break*
11:20 – 12:10	Plenary Lecture 1 **Maria Santore**	2020 Unilever Award Lecture **Sujit Datta**	2020 LaMer Award Lecture **Xiao Su**
12:10 – 12:40	*Break*	*Break*	*Break*
12:40 – 13:30	Plenary Lecture 2 **Catherine Murphy**	2021 Unilever Award Lecture **Lilian Hsiao**	2021 LaMer Award Lecture **Rose Cersonsky**
13:30 – 13:40	*Break*	*Break*	*Break*
13:40 – 15:00	Technical Sessions M2	Technical Sessions T2	Technical Sessions W2
15:00 – 15:20	*Break*	*Break*	*Break*
15:20 – 16:40	Technical Sessions M3	Technical Sessions T3	Technical Sessions W3
16:40 – 17:00	*Break*	*Break*	*Break*
17:00 – 19:00	Exhibits	Posters	Posters

SESSIONS AT A GLANCE

(All Times ET)

Symposium	Monday June 14			Tuesday June 15			Wednesday June 16		
	M1 0900-1100	M2 1340-1500	M3 1520-1640	T1 0900-1100	T2 1340-1500	T3 1520-1640	W1 0900-1100	W2 1340-1500	W3 1520-1640
A. Self and Directed Assembly in Colloidal Systems	AM1	AM2	AM3	AT1	AT2	AT3	AW1	AW2	AW3
B. Emulsions, Bubbles, Foams	BM1	BM2	BM3	BT1	BT2	BT3	BW1	BW2	
C. Active & Responsive Colloidal Matter	CM1	CM2	CM3	CT1	CT2				
D. Rheology & Complex Fluids	DM1	DM2	DM3	DT1			DW1	DW2	
E. Advanced Experimental Methods in Colloid and Interface Science	EM1	EM2	EM3	ET1					
F. Applications of Scanning Probe Methods							FW1	FW2	FW3
G. Wetting and Adhesion	GM1	GM2	GM3	GT1					
H. Surface and Interfacial Forces					HT2	HT3	HW1	HW2	HW3
I. Colloids and Interfaces in Energy Applications	IM1	IM2							
J. Colloids and Interfaces in Environmental Applications					JT2	JT3	JW1	JW2	JW3
K. Colloids and Interfaces in Biology and Medicine	KM1	KM2	KM3		KT2	KT3	KW1	KW2	KW3
L. Surface Science and Catalysis				LT1	LT2		LW1	LW2	LW3
M. Plasmonics	MM1	MM2	MM3	MT1	MT2	MT3			
N. Interfacing Biology with Materials					NT2	NT3	NW1	NW2	NW3

O. Chemical Interactions Between Colloids and at Interfaces				**OT1**	**OT2**	**OT3**	**OW1**	**OW2**	
P. Nanomaterials & Advanced Manufacturing				**PT1**	**PT2**	**PT3**	**PW1**	**PW2**	
Q. Fundamental/ General Aspects of Colloids and Interfaces	**QM1**	**QM2**	**QM3**	**QT1**	**QT2**		**QW1**		
R. Poster Session				**RT 17:00 – 19:00**			**RW 17:00 – 19:00**		
S. Plenary Lectures, LaMer Award Lectures, Unilever Award Lectures	**SM1 11:20 – 12:10** **SM2 12:40 – 13:30**			**ST1 11:20 – 12:10** **ST2 12:40 – 13:30**			**SW1 11:20 – 12:10** **SW2 12:40 – 13:30**		
T. Exhibitor Presentations	**TM 17:00 – 19:00**								
Langmuir Graduate Student Oral Presentation Award Symposium	**LGS1**			**LGS2**					

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PLENARY LECTURERS

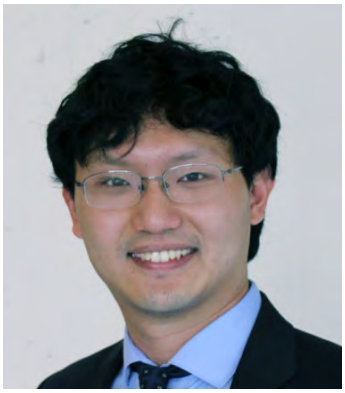
Plenary Lecture 1

Maria Santore
University of Massachusetts – Amherst

2020 Unilever Award Lecture

Sujit Datta
Princeton University

2020 LaMer Award Lecture



Xiao Su
University of Illinois

Plenary Lecture 2

Catherine Murphy
University of Illinois

2021 Unilever Award Lecture

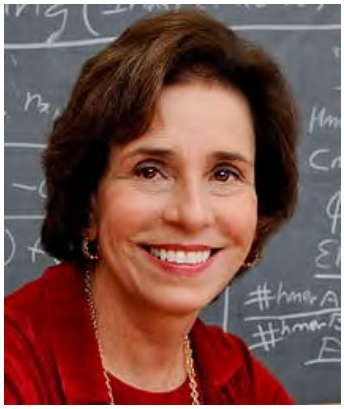
Lilian Xiao
North Carolina State University

2021 LaMer Award Lecture

Rose Cersonsky
University of Michigan/EPLF, Switzerland

Keynote Speakers

Self and Directed Assembly in Colloidal Systems



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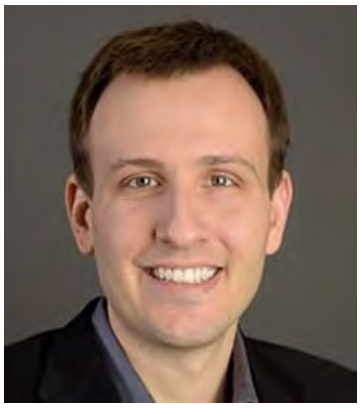

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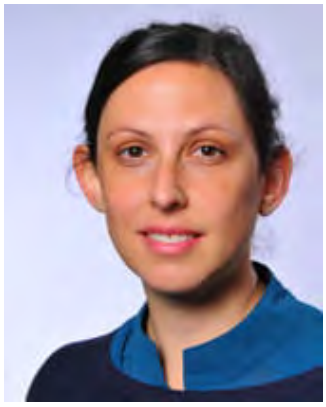

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Memorial Sloan Kettering Cancer Center

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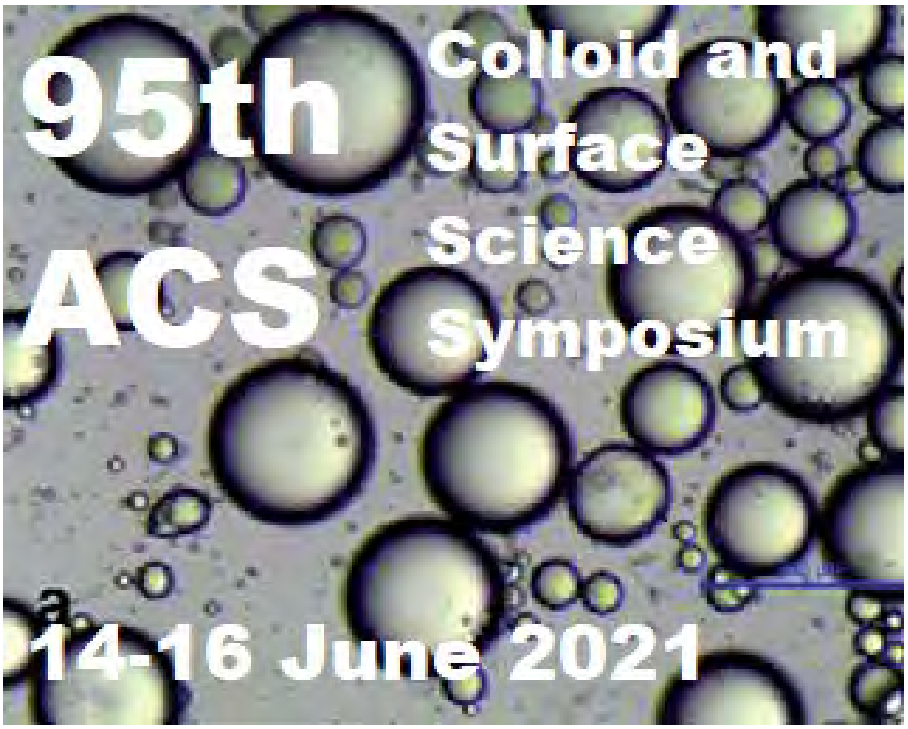

Technical Program

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Matthew Helgeson, University of California, Santa Barbara

Sibani Lisa Biswal, Rice University

Ramanathan Nagarajan, DEVCOM Soldier Center

Mon, 14	
09:00 - 11:00	**Session: Langmuir Graduate Student Oral Presentation Award Symposium** Organizer/s: Ramanathan Nagarajan Chair/s: Lisa Biswal
09:00	Mon-LGS1-01 **Ionomer/Catalyst Particle Interactions in Fuel-Cell Inks** Sarah Berlinger (sarah_berlinger@berkeley.edu), Bryan McCloskey, Adam Weber (Department of Chemical & Biomolecular Engineering, University of California, Berkeley | Energy Technologies Area, Lawrence Berkeley National Laboratory)
09:20	Mon-LGS1-02 **Elastic turbulence generates anomalous flow resistance in porous media** Christopher Browne (cabrowne@princeton.edu), Sujit Datta (Princeton University)
09:40	Mon-LGS1-03 **Synthesis and Assembly of Polymer-Patched Nanoparticles** Ahyoung Kim (ahyoung2@illinois.edu), Thi Vo, Chansong Kim, Lehan Yao, Shan Zhou, Hyosung An, Sharon Glotzer, Qian Chen (University of Illinois, Urbana-Champaign)
10:00	Mon-LGS1-04 **Shear-Induced Grain Boundary Formation in Magnetically Actuated Colloidal Sheets** Dana Lobmeyer (dml7@rice.edu), Sibani Lisa Biswal (Rice University, Chemical and Biomolecular Engineering Department)
10:20	Mon-LGS1-05 **Quantifying In-Solution Biomolecular Exchange Dynamics on Carbon Nanotubes toward Improved Nanosensor Design** Rebecca Pinals (rebecca_pinals@berkeley.edu), Darwin Yang, Alison Lui, Wendy Cao, Markita Landry (Department of Chemical and Biomolecular Engineering, University of California at Berkeley, Berkeley)
10:40	Mon-LGS1-06 **Investigating complex fluid interfaces with decoupled shear and dilational interfacial rheology** Ying-Heng Tein (ystein@udel.edu), Chuck Majkrzak, Brian Maranville, Jan Vermant, Norman Wagner (Department of Chemical and Biomolecular Engineering, University of Delaware)
09:00 - 11:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Jaime Juarez
09:00	Mon-AM1-01 **Computer Simulation of Self-Assembly by Multipolar Colloidal Particles and Their Mixtures (Keynote Lecture)**

	Carol Hall (hall@ncsu.edu) (Department of Chemical and Biomolecular Engineering North Carolina State University)
09:40	Mon-AM1-02 **Self-assembly of Symmetric Polystyrene-block-Poly(methacrylic acid) diblock copolymer in Salt-Free Aqueous Solution by Explicit Atomistic MD Simulations** POOJA SAHU (poojasahunitrkl@gmail.com), Upendra Natarajan (Department of Chemical Engineering, IIT Madras, Chennai)
10:00	Mon-AM1-03 **Self-Assembly of an Amphiphilic Donor-Acceptor Isoindigo-based Fluorophore into Spherical Aggregates for use in NIR Bioimaging Applications** Nicholas Sparks (nsparks1@go.olemiss.edu), Indika Chandrasiri, Austin Dorris, Sajith Vijayan, Farid Zia, Nathan Hammer, Alex Flynt, Davita L. Watkins (Department of Chemistry and Biochemistry, The University of Mississippi)
10:20	Mon-AM1-04 **Charge transport of ionic liquids in self-assembly of triblock copolymer/ionic liquid/monomer mixtures** ALIREZA BANDEGI (alirezab@nmsu.edu), reza foudazi (Chemical and Materials Engineering, New Mexico State University, Las Cruces, NM 88003, USA)
10:40	Mon-AM1-05 **Towards Supramolecular Self Assembly by Programmable Site-Specific Functionalization of DNA Origami with Polynucleotide Brushes** Yunqi Yang, Qinyi Lu, Chao-Min Huang, Gaurav Arya, Yonggang Ke, Stefan Zauscher (zauscher@duke.edu) (1) Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC)
09:00 - 11:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Cari Dutcher, Karthik Nayani, Daniel Miller Chair/s: Cari Dutcher
09:00	Mon-BM1-01 **Continuous Production of Rugged Nanoemulsions/Nanoparticles Generated by the Ouzo Effect** Joseph Rosenfeld (jrose92@seas.upenn.edu), Francois Ganachaud, Daeyeon Lee (Department of Chemical and Biomolecular Engineering, University of Pennsylvania)
09:20	Mon-BM1-02 **Surface tension of micro- and milli-meter size bubbles in surfactant-laden aqueous solutions** Shihao Liu (liu00033@umn.edu), Cari Dutcher (Department of Mechanical Engineering, University of Minnesota - Twin Cities)
09:40	Mon-BM1-03

	Artificial intelligence enhances control parameter space investigation in flow-focusing droplet generation Evyatar Shaulsky (e.shaulsky@northeastern.edu), Alexander E. Siemenn, Matthew J. Beveridge, Tonio Buonassisi, Iddo Drori, Sara M. Hashmi (Northeastern University, Dept of Chemical Engineering)
10:00	Mon-BM1-04 **Bijel derived hydrogel ropes via microfluidic twisting** Shankar Kharal (kharal98@students.rowan.edu), Martin Haase (Rowan University, Henry M. Rowan college of Engineering, New Jersey, USA)
10:20	Mon-BM1-05 **Synthesis and concentration of size-selected acoustically vaporizable nanodrops** Awaneesh Upadhyay (awup6675@colorado.edu), Mark Borden (Mechanical Engineering, University of Colorado Boulder, Boulder, CO)
10:40	Mon-BM1-06 **Shape Memory Poly(β-hydroxythioether) Foams for Oil Remediation in Aquatic Environments or Biomedical Tissue Scaffolding Implants** Andrew Weems (weemsac@ohio.edu), Olivia King, Eric Constant (Ohio University, Athens, OH)
09:00 - 11:00	**Session: Active & Responsive Colloidal Matter** Organizer/s: Bhuvnesh Bharti, Carlos Silvera Batista Chair/s: Bhuvnesh Bharti
09:00	Mon-CM1-01 **Superdiffusive paste from active particles driven by collective phenomena of ionic salt dissolution** Nidhi M. Diwakar (nmdiwaka@ncsu.edu), Orlin D. Velev (North Carolina State University)
09:20	Mon-CM1-02 **Spontaneous helix formation in thermoresponsive colloidal chains** Bipul Biswas (bbiswas@umass.edu), Debarshi Mitra, Fayis KP, Suresh Bhat, Apratim Chatterji, Guruswamy Kumaraswamy (PSE Division, NCL Pune | Department of Physics, UMass Amherst)
09:40	Mon-CM1-03 **NIPA-Shelled Liquid-Core Capsules Exhibiting Reversible Temperature-Induced Pearlescence** Medha Rath (mrath@umd.edu), Taylor Woehl, Srinivasa Raghavan (Department of Chemistry, University of Maryland, College Park)
10:00	Mon-CM1-04 **Multi-stimuli responsive vesicles** Sai Nikhil Subraveti (nikhil15@terpmail.umd.edu), Narottam Lamichhane, Srinivasa Raghavan (University of Maryland - College Park)

10:20	Mon-CM1-05 **Enzyme-powered protocells from double emulsion-templated microcapsules** Jessica O'Callaghan (jaoc@seas.upenn.edu), Daeyeon Lee, Daniel Hammer (Department of Chemical and Biomolecular Engineering, University of Pennsylvania)
10:40	Mon-CM1-06 **Methods for encapsulating mobile microparticles** Samuel Wilson-Whitford (saw319@lehigh.edu), Jinghui Gao, Maria Chiara Roffin, Thitiporn Kaewpetch, James Gilchrist (Department of Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, USA | Center for Polymer Science and Engineering, Lehigh University, Bethlehem, PA, USA)
09:00 - 11:00	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Amanda Marciel
09:00	Mon-DM1-01 **Colloidal vitrification is a spontaneous non-equilibrium transition driven by osmotic pressure (Keynote Lecture)** Roseanna Zia (rzia@stanford.edu), Jialun Wang (Stanford University)
09:40	Mon-DM1-02 **Investigation of the Yielding Transition in Concentrated Colloidal Systems Via Rheo-XPCS** Gavin Donley, Matthew Wade, Suresh Narayanan, Robert Leheny, James Harden, Simon Rogers (sarogers@illinois.edu) (Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign)
10:00	Mon-DM1-03 **Effect of Interdroplet Interactions on the Rheology of High Internal Phase Emulsions (HIPEs)** Muchu Zhou (muchu@nmsu.edu), Reza Foudazi (Department of Chemical and Materials Engineering, New Mexico State University, Las Cruces, NM 88003)
10:20	Mon-DM1-04 **Glass and gel fromations in macro- and nano-emulsions in the presence of micellar depletion attraction** Neda Sanatkaran, Muchu Zhou, Reza Foudazi (rfoudazi@nmsu.edu) (Department of Chemical and Material Engineering, New Mexico State University, Las Cruces, NM)
10:40	Mon-DM1-05 **Shear thickening behavior of silica-based nanofluids** Parvin Alaee (parvin02@mail.ubc.ca), Milad Kamkar, Mohammad Arjmand (University of British Columbia, Kelowna, BC, Canada)

09:00 - 11:00	**Session: Advanced Experimental Methods in Colloid and Interface Science** Organizer/s: Qian Chen, Muzhou Wang Chair/s: Qian Chen
09:00	Mon-EM1-01 **In Situ Methods to Probe Colloidal Assembly and Interactions in Nonclassical Crystallization (Keynote Lecture)** Jeffrey Rimer (jrimer@central.uh.edu) (University of Houston)
09:40	Mon-EM1-02 **Scattering Morphology Resolved Total Internal Reflection Microscopy of Anisotropic Particles** Jiarui Yan, Dmitry Efremenko, Alina Vasilyeva, Adrian Doicu, Thomas Wriedt, Christopher Wirth (wirth@case.edu) (Chemical and Biomolecular Engineering Department, Case Western Reserve University, 2102 Adelbert Road, Cleveland, Ohio USA 44106)
10:00	Mon-EM1-03 **Can microfluidic SANS be used to probe the interfacial coating on a drop?** Emily Jamieson (jamieson.e@unimelb.edu.au), Christopher Bolton, Tanweepriya Das, Tianyi Bai, Andrew Whitten, Rico Tabor, Raymond Dagastine (Department of Chemical Engineering, The University of Melbourne, Parkville 3010, Australia)
10:20	Mon-EM1-04 **Surface Tension of Binary Mixtures of Pentane and 2-Methylpentane for Use in Wickless Heat Pipes** Angelo S. Visco (avisco@kent.edu), Elizabeth K. Mann, J. Adin Mann Jr., Alexander I. Belgovskiy, Anthony E. Smart, William V. Meyer (Kent State University)
10:40	Mon-EM1-05 **Interfacial flows and instabilities of Boger Fluids** Fahed Albreiki (fahedh.albreiki@gmail.com), Alexander Kubinski, Andrew Rasmussen, Jelena Dinic, Vivek Sharma (Department of Chemical Engineering University of Illinois at Chicago)
09:00 - 11:00	**Session: Wetting and Adhesion** Organizer/s: Shu Yang, Dongjin Seo Chair/s: Dongjin Seo
09:00	Mon-GM1-01 **Cell-Material Interactions: Engineering Materials to Manipulate Cellular Processes (Keynote Lecture)** Maryam Daviran, John McGlynn, Kelly Schultz (kes513@lehigh.edu) (Department of Chemical and Biomolecular Engineering Lehigh University)
09:40	Mon-GM1-02 **Drop oscillation dynamics on thin immiscible liquid films**

	Huy Tran (huy_tran1@baylor.edu), Ziwen He, Min Pack (Mechanical Engineering at Baylor University)
10:00	Mon-GM1-03 **Relation between a Microphase-separated Structure and Adhesion Properties of Polyurethane-adhered Single Lap Joints** Kakeru Obayashi, Chien-Wei Chu, Atsushi Takahara, Ken Kojio (kojio@cstf.kyushu-u.ac.jp) (Kyushu University)
10:20	Mon-GM1-04 **How various surfactant transport pathways affect Marangoni spreading** Madeline Sauleda (msauleda@andrew.cmu.edu), Stephen Garoff, Robert Tilton (Carnegie Mellon University, Physics Department | Carnegie Mellon University, Center for Complex Fluids Engineering)
10:40	Mon-GM1-05 **Marangoni Transport Simulation for Two Interacting Surfactant Sources** Steven Iasella (Iasel001@umn.edu), Stephen Garoff, Todd Przbybcien, Robert D. Tilton (University of Minnesota, Department of Chemical Engineering and Materials Science)
09:00 - 11:00	**Session: Colloids and Interfaces in Energy Applications** Organizer/s: Valentina Prigiobbe, Clint Aichele Chair/s: Valentina Prigiobbe
09:00	Mon-IM1-01 **Foam Trapping and Mobility in Porous Media in Surfactant-Alternating-Gas Injection for Enhanced Oil Recovery (Keynote Lecture)** William Rossen (w.r.rossen@tudelft.nl), Jiakun Gong (Dept. of Geoscience and Engineering, Delft University of Technology, The Netherlands)
09:40	Mon-IM1-02 **Effects of interfacial properties on the nucleation of gas hydrates in sediments** Patricia Taboada-Serrano (ptsche@rit.edu), Yali Zhang (Department of Chemical Engineering, Rochester Institute of Technology | Microsystems Engineering, Rochester Institute of Technology)
10:00	Mon-IM1-03 **Electrolyte-dependent structural heterogeneity and its atomic origin within primary cathode nanoparticles** Wenxiang Chen (wxchen@illinois.edu), Xun Zhan, Renliang Yuan, Jian-Min Zuo, Qian Chen (Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States | Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States)
10:20	Mon-IM1-04 **Characterizing solvency effects on asphaltenes in bulk dispersions and their connection to interfacial properties.**

	Olivia Haider (ohaider@andrew.cmu.edu), Junchi Ma, Lynn Walker (Carnegie Mellon University)
09:00 - 11:00	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Lydia Kisley
09:00	Mon-KM1-01 **Modelling of virus survival time in respiratory droplets on surfaces** Nicolò Giuseppe Di Novo (nicolo.dinovo@unitn.it), Angelo Rosario Carotenuto, Giuseppe Mensitieri, Massimiliano Fraldi, Nicola Maria Pugno (Laboratory of Bio-inspired, Bionic, Nano, Meta Materials & Mechanics, Department of Civil, Environmental and Mechanical Engineering, University di Trento, Trento, Italy | Micro Nano Facility, FBK-Sensors and Devices, Trento, Italy)
09:20	Mon-KM1-02 **Reversible capturing of living bacteria on a non-adhesive surfaces via depletion force** Wuqi Niu (wuqiniu@umass.edu), Maria Santore, Sylvia Rivera, Sloan Siegrist (Polymer Science and Engineering Department, University of Massachusetts Amherst)
09:40	Mon-KM1-03 **Continuous, Real-Time Detection of Protein-Protein Interactions at the Solid/Liquid Interface** Christopher Reynolds (cmr397@psu.edu), Paul Cremer (Department of Chemistry, The Pennsylvania State University)
10:00	Mon-KM1-04 **Copper Oxide Coatings that Reduce Infection by SARS-CoV-2** William Ducker (wducker@vt.edu), Saeed Behzadinasab, Mohsen Hosseini, Alex Chin, Leo Poon (Department of Chemical Engineering Virginia Tech)
10:20	Mon-KM1-05 **kT-scale Colloidal Interactions Mediated by Protein Coronas on PEG and Zwitterionic Copolymers** Eugenie Jumai'an (ejumaia1@jhu.edu), Michael A. Bevan (Chemical & Biomolecular Engineering, Johns Hopkins University, Baltimore, MD 21218)
10:40	Mon-KM1-06 **Design rules for tuning protein adsorption on grafted zwitterionic thin films** Syeda Tajin Ahmed (tajinahmed0802@gmail.com), Deborah Leckband (Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign)
09:00 - 11:00	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Stephan Link
09:00	Mon-MM1-01

	Aluminum Nanocrystal Growth Chemistry: Similarities to our Noble Neighbors (Keynote Lecture) Naomi Halas (halas@rice.edu) (Rice University)
09:40	Mon-MM1-02 **Advances in Single-Particle Spectroscopy Using Fast Electrons** David Masiello (masiello@uw.edu) (Department of Chemistry, University of Washington)
10:05	Mon-MM1-03 **Synthetic Size Control over Plasmonic Magnesium Nanoparticles** Elizabeth Hopper (erh64@cam.ac.uk), Thomas Wayman, Jeremie Asselin, Christina Boukouvala, Laura Torrente-Murciano, Emilie Ringe (Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge, United Kingdom, CB3 0FS | Department of Earth Sciences, University of Cambridge, Downing Street, Cambridge, United Kingdom, CB2 3EQ | Department of Chemical Engineering and Biotechnology, University of Cambridge, Philippa Fawcett Drive, Cambridge, United Kingdom, CB3 0AS)
10:20	Mon-MM1-04 **Nano-Plasmonic photo-catalysis - “Hot electrons” or just heating?** Yonatan Dubi (jdubi@bgu.ac.il), Yonatan Sivan (Department of chemistry, Ben Gurion University of the Negev)
10:45	Mon-MM1-05 **Plasmon-Mediated Methyl Rearrangement with Nanoscale Spatial Control** James Brooks, Chris Warkentin* (warke023@umn.edu), Dhabih Chulhai, Jason Goodpaster, Renee Frontiera (University of Minnesota, Department of Chemistry)
09:00 - 11:00	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan Chair/s: Vivek Narsimhan
09:00	Mon-QM1-01 **Rotational and translational diffusion in a 2D colloidal glass-former (Keynote Lecture)** Eric Weeks (erweeks@emory.edu), Skanda Vivek (Physics Dept., Emory University, Atlanta GA, USA)
09:40	Mon-QM1-02 **Simulation of Finite-sized Particle Transport through Porous Media** Deepak Mangal (deepak.mangal.iit@gmail.com), Jacinta Conrad, Jeremy Palmer (Chemical & Biomolecular Engineering, University of Houston, Houston, TX, USA)
10:00	Mon-QM1-03 **Atmospheric Transport of Radioactive Debris**

	Alexander Wiechert (awiechert3@gatech.edu), Austin Ladshaw, Yong-ha Kim, Costas Tsouris, Sotira Yiacoumi (School of Civil and Environmental Engineering, Georgia Institute of Technology)
10:20	Mon-QM1-04 **Temperature dependence of diffusiophoresis using a novel microfluidic approach.** Parth Shah (parthshah@ucsb.edu), Huanshu Tan, Xiaoyu Tang, David Taylor, Nan Shi, Afnan Mashat, Amr Abdel Fatteh, Todd Squires (Department of Chemical Engineering, University of California, Santa Barbara)
10:40	Mon-QM1-05 **Spatial Segregation of Spherical Microparticles by Rubbing-Induced Triboelectrification on Fluorocarbon-Patterned Surfaces** Ignaas Jimidar (i.s.m.jimidar@utwente.nl), Kai Sotthewes, Han Gardeniers, Gert Desmet (Department of Chemical Engineering CHIS Vrije Universiteit Brussel | Mesoscale Chemical Systems (MCS) University of Twente)
11:20 - 12:10	**Session: Plenary Lecture 1** Organizer/s: Ramanathan Nagarajan Chair/s: Kate Stebe
11:20	Introduction of Plenary Speaker by Kathleen Stebe, COLL Past Chair
11:25	Mon-SM1-01 **Colloidal assembly in 2D: From tunable pairwise potentials to elaborate contoured assemblies** Maria Santore (santore@mail.pse.umass.edu) (Department of Polymer Science and Engineering University of Massachusetts Amherst, MA 01003)
12:40 - 13:30	**Session: Plenary Lecture 2** Organizer/s: Ramanathan Nagarajan Chair/s: Lisa Biswal
12:40	Introduction of Plenary Speaker by Sibani Lisa Biswal, 95th CSSS Co-Chair
12:45	Mon-SM2-01 **Surfing the Surface of Colloidal Gold Nanocrystals** Catherine Murphy (murphycj@illinois.edu) (Department of Chemistry, University of Illinois at Urbana-Champaign)
13:40 - 15:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Samanvaya Srivastava
13:40	Mon-AM2-01 **Stable Positively Charged Polydimethylsiloxane Micelles with a Highly Hydrophobic Core** Sandrine Lteif (sl17d@my.fsu.edu), Neda Arabzadeh Nosratabad, Khalil Akkaoui, Samir Abou Shaheen, Maya Chaaban, Sisi Wang, Yan Xin, Steven Weigand, Biwu Ma, Joseph Schlenoff

	(Department of Chemistry and Biochemistry, The Florida State University, Tallahassee, Florida 32306, USA)
14:00	Mon-AM2-02 **The effect of pi-interactions on the self-assembly of patterned polypeptides** Sara Tabandeh (sara.tabandeh@knights.ucf.edu), Lorraine Leon (Department of Materials Science and Engineering, University of Central Florida, Orlando, FL, USA)
14:20	Mon-AM2-03 **Using Smart Hydrogel Interfaces to Lock DNA-Linked Nanoparticle Assemblies** Mathew Maye (mmmaye@syr.edu) (Department of Chemistry, Syracuse University)
14:40	Mon-AM2-04 **Peptoid-directed assembly of CdSe nanoparticles** Madison Monahan (gladdm@uw.edu), Bin Cai, Tengyue Jian, Shuai Zhang, Guomin Zhu, Chun-Long Chen, James De Yoreo, Brandi Cossairt (Department of Chemistry, University of Washington)
13:40 - 15:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Karthik Nayani
13:40	Mon-BM2-01 **Liquid Foams as Template for Macroporous Hydrogels Synthesis** Ryan Zowada (rzowada@nmsu.edu), Reza Foudazi (New Mexico State University)
14:00	Mon-BM2-02 **Immobilizing hexadecane nanoemulsion drops in polyacrylamide hydrogels** Reghan J. Hill (reghan.hill@mcgill.ca) (Department of Chemical Engineering, McGill University)
14:20	Mon-BM2-03 **Colloidal gelation of concentrated nanoemulsion at different depletant concentrations** Zahra Abbasian Chaleshtari (abbasian@nmsu.edu), Hamed Salimi-kenari, Muchu Zhou, Alireza Bandegi, Reza Foudazi (Department of Chemical & Materials Engineering, New Mexico State University, Las Cruces, NM)
14:40	Mon-BM2-04 **Co-surfactant based interfacial strategies for predicting multi-nanoemulsion formation** Tanvi Sheth (tsheth@ucsb.edu), Serena Seshadri, Mengwen Zhang, Matthew Helgeson (University of California, Santa Barbara)
13:40 - 15:00	**Session: Active & Responsive Colloidal Matter** Organizer/s: Bhuvnesh Bharti, Carlos Silvera Batista

	Chair/s: Carlos Silvera Batista
13:40	Mon-CM2-01 **Light-powered motors and thermally reconfigurable low-symmetry fluids in nematic colloidal dispersions of discs (Keynote Lecture)** Ivan Smalyukh (ivan.smalyukh@colorado.edu) (Department of Physics, University of Colorado Boulder, CO 80309, USA)
14:20	Mon-CM2-02 **Self-propelled liquid crystal droplets that trigger local polymerization** Xin Wang (xw543@cornell.edu), Nicholas L. Abbott (Robert Frederick Smith School of Chemical and Biomolecular Engineering, Cornell University)
14:40	Mon-CM2-03 **Self-Locomotive Antimicrobial Microparticles for Enhanced Biofilm Removal** Yu-Heng Deng (yhdeng2@illinois.edu), Tomas Ricciardulli, Jungeun Won, Stephen Boppart, David Flaherty, Hyunjoon Kong (Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA)
13:40 - 15:00	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Amanda Marciel
13:40	Mon-DM2-01 **Three-Dimensional Technique for Measuring Sag in Drying Coatings** Marola Issa (marola.issa@case.edu), Hairou Yu, Maria Roffin, James Gilchrist, Steven Barancyk, Reza Rock, Christopher Wirth (Department of Chemical and Biomolecular Engineering, Case School of Engineering, Case Western Reserve University, Cleveland, Ohio 44106, United States)
14:00	Mon-DM2-02 **In-situ Microrheology of Drying Paint** Maria Chiara Roffin (mar920@lehigh.edu), Christopher Wirth, Steven Barancyk, Reza Rock, Andy Surface, James Gilchirst (Department of Chemical and Biomolecular Engineering, Lehigh University, PA, USA)
14:20	Mon-DM2-03 **Influence of Polymer Diffusivity in Nanoconfinement on the Onset of Viscous Fingering** Thitiporn Kaewpetch (thk215@lehigh.edu), Samuel Wilson-Whitford, Christian Heil, Arthi Jayaraman, James Gilchrist (gilchrist@lehigh.edu) (Polymer Science and Engineering, Lehigh University | Department of Chemical and Biomolecular Engineering, University of Delaware)
13:40 - 15:00	**Session: Advanced Experimental Methods in Colloid and Interface Science** Organizer/s: Qian Chen, Muzhou Wang Chair/s: Muzhou Wang

13:40	Mon-EM2-01 **Nanoparticle Tracking to Probe Transport in Porous Media (Keynote Lecture)** Daniel Schwartz (Daniel.schwartz@colorado.edu) (Department of Chemical and Biological Engineering University of Colorado Boulder)
14:20	Mon-EM2-02 **Using Experimental 'Molecular Videography' to Resolve Nanostructure Dynamics in Soft and Biomolecular Materials** John Smith (jwsmith6@illinois.edu), Qian Chen (Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign)
14:40	Mon-EM2-03 **Deep Learning-Assisted Analysis of Anomalous Nanoparticle Surface Diffusion in Liquid Phase Transmission Electron Microscopy** Vida Jamali (vidaj@berkeley.edu), Cory Hargus, Assaf Ben Moshe, Hyun Dong Ha, Kranthi Mandadapu, A. Paul Alivisatos (University of California Berkeley)
13:40 - 15:00	**Session: Wetting and Adhesion** Organizer/s: Shu Yang, Dongjin Seo Chair/s: Shu Yang
13:40	Mon-GM2-01 **Stimuli Responsive Reversible Adhesion Between Physical and Chemical Networks** Leah Borden (lkborden@umd.edu), Srinivasa Raghavan, Ankit Gargava (University of Maryland College Park, MD)
14:00	Mon-GM2-02 **Selective flow through membrane pores with in situ change of wettability** Dongjin Seo (dongjinseo@byu.edu), Daniel Lippert, Jacob Burnham (Chemical Engineering Department, Brigham Young University, Provo UT 84059)
14:20	Mon-GM2-03 **Contactless, Reversible Droplet Contact Angle Modulation by Dielectric Charge Injection** Paradorn Rummaneethorn (pr9@seas.upenn.edu), Daeyeon Lee (Department of Chemical and Biomolecular Engineering, University of Pennsylvania)
14:40	Mon-GM2-04 **Using colloidal deposition to mobilize immiscible fluids from porous media** Joanna Schneider (js105@princeton.edu), Rodney Priestley, Sujit Datta (Chemical and Biological Engineering, Princeton University)
13:40 - 15:00	**Session: Colloids and Interfaces in Energy Applications** Organizer/s: Clint Aichele, Valentina Prigiobbe Chair/s: Clint Aichele
13:40	Mon-IM2-01 **Colloids & Interfacial Sciences in Energy Applications (Keynote Lecture)**

	Krishnaraj Sambath (ksambath@chevron.com) (Chevron)
14:20	Mon-IM2-02 **Modified Interfacial Energy Stabilizes the Perovskite Phase of $CsPbI_3$ in Colloidally Assembled Oxide Scaffolds** Arkita Chakrabarti (ac3868@drexel.edu), Aaron Fafarman (Department of Chemical and Biological Engineering, Drexel University)
13:40 - 15:00	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Sarah Perry
13:40	Mon-KM2-01 **Cholesterol Induced Morphological Instabilities and Transitions in Phospholipid Monolayers** Cain Valtierrez-Gaytan (valti009@umn.edu), Joseph Barakat, Benjamin Stottrup, Joseph Zasadzinski (Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, 55455, USA)
14:00	Mon-KM2-02 **Visualizing early-stage coacervate formation with a phase field model for mixed polyelectrolyte solutions** Chelsea Edwards (chelsea_edwards@ucsb.edu), Rajarshi Sengupta, Kris Delaney, Matthew Helgeson, Glenn Fredrickson (Materials Research Laboratory and Department of Chemical Engineering, University of California, Santa Barbara, CA 93106, USA)
14:20	Mon-KM2-03 **A functional DNA liquid (Keynote Lecture)** Omar Saleh (saleh@ucsb.edu) (Materials Dept, UC Santa Barbara)
13:40 - 15:00	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Stephan Link
13:40	Mon-MM2-01 **Plasmon-induced hot carrier generation, relaxation, and applications (Keynote Lecture)** Peter Nordlander (nordland@rice.edu) (Rice University)
14:20	Mon-MM2-02 **Particle plasmons as omnipotent probe of surface photochemistry** Terefe Habteyes (habteyes@unm.edu), Hamed Kookhaee, Tefera Tesema (University of New Mexico)
14:45	Mon-MM2-03

	The Connection Between Plasmon-Mediated Hot Carrier Dynamics and the Surface Enhanced Raman Spectroscopy Background Shengxiang (Joey) Wu (sxwu@csrc.ac.cn), Matthew Sheldon (Beijing Computational Science Center)
13:40 - 15:00	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan Chair/s: Ning Wu
13:40	Mon-QM2-01 **Unexpected Chain Collapsing and Phase Separation in Polymer Solutions with Strong Polymer-Solvent Interactions** Yisheng Huang, Shengfeng Cheng (chengsf@vt.edu) (Virginia Tech)
14:00	Mon-QM2-02 **Synthesis of Nanoscale Polymer Particles: Key Roles of Interfacial Agents in Controlling Size, Shape, and In Situ Assemblies** Nikunjkumar Visaveliya (nvisaveliya@ccny.cuny.edu) (The City College of New york)
14:20	Mon-QM2-03 **Effect of Extreme Nanoconfinement on the Thermodynamics of Polymer Blends in Dense Nanoparticle Packings** Anastasia Neuman (annaneu@seas.upenn.edu), Daeyeon Lee, Robert Riggleman (Department of Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA)
14:40	Mon-QM2-04 **Imaging nanoparticles with a trick of the light** Christopher Bolton (boltonc@unimelb.edu.au), Raymond Dagastine (Department of Chemical Engineering, University of Melbourne)
15:20 - 16:40	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Jaime Juarez
15:20	Mon-AM3-01 **Controllable Assemblies of Polymer Nanoparticles: A Hierarchical Approach** Nikunjkumar Visaveliya (nvisaveliya@ccny.cuny.edu) (The City College of New york)
15:40	Mon-AM3-02 **Structure and Phase Behavior of Polyelectrolyte–Nanoparticle Complexes** Advait Holkar (advaitholkar@g.ucla.edu), Samanvaya Srivastava (University of California Los Angeles)
16:00	Mon-AM3-03 **Polymer-Nanoparticle Complex Coacervates** Mingjun Zhou (mingjunzhou@umass.edu), Sarah Perry, Maria Santore

	(Department of Chemical Engineering, UMass Amherst | Department of Polymer Science and Engineering, UMass Amherst)
16:20	Mon-AM3-04 **Designing complex polymer colloids for films with enhanced properties and self-stratification** Piyush K Singh (pksingh2@illinois.edu), Micaheleen L Pacholski, Junsi Gu, Luke Yu, Yookyung Go, Cecilia Leal, Kshitish Patankar, Ray Drumright, Simon A Rogers, Charles M Schroeder (Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL | Beckman Institute for Advanced Science and Technology, Urbana, IL)
15:20 - 16:40	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Daniel Miller
15:20	Mon-BM3-01 **Evaluating the Surfactant Performance in Achieving the Optimal Oil-Water Separation in Emulsion Systems using HLD-NAC model** Hassan Ghasemi (hassan.ghasemi@modares.ac.ir), Fatemeh Eslami (Tarbiat Modares University)
15:40	Mon-BM3-02 **Effect of processing conditions on the stability and texture of cosmetic emulsions** Rebecca Chen (rebecca.chen@rd.loreal.com), Hy Bui (L'Oreal USA)
16:00	Mon-BM3-03 **Getting out of a tight spot: Using complex fluids to remove trapped droplets from porous media (Keynote Lecture)** Sujit Datta (ssdatta@princeton.edu) (Chemical and Biological Engineering, Princeton University)
15:20 - 16:40	**Session: Active & Responsive Colloidal Matter** Organizer/s: Bhuvnesh Bharti, Carlos Silvera Batista Chair/s: Wyatt Shields
15:20	Mon-CM3-01 **Automating Bayesian inference and design for acoustic levitation and propulsion** Kiran Dhatt-Gauthier (kdg2128@columbia.edu), Kyle Bishop, Dimitri Livitz (Department of Chemical Engineering, Columbia University, New York, NY 10027, USA)
15:40	Mon-CM3-02 **Vapor pressure of superparamagnetic colloidal cluster** Kedar Joshi (kedar.joshi@rice.edu), Sibani Lisa Biswal (Department of Chemical and Biomolecular Engineering, Rice University)
16:00	Mon-CM3-03 **Biosensors Based on Complex Liquid Crystal Emulsions**

	Alberto Concellón (aconcell@mit.edu), Timothy M. Swager (Department Chemistry, Massachusetts Institute of Technology, United States)
15:20 - 16:40	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Amanda Marciel
15:20	Mon-DM3-01 **Temperature−structure−rheology response of portlandite suspensions** Sharu Bhagavathi Kandy (sharu.bk@g.ucla.edu), Iman Mehdipour, Narayanan Neithalath, Mathieu Bauchy, Edward Garboczi, Torben Gaedt, Samanvaya Srivastava, Gaurav Sant (Laboratory for the Chemistry of Construction Materials (LC2), Department of Civil and Environmental Engineering, University of California, Los Angeles, CA 90095, USA | Institute for Carbon Management (ICM), University of California, Los Angeles, CA 90095, USA)
15:40	Mon-DM3-02 **Understanding the true nature of Na-montmorillonite aqueous suspensions** Mohmmad Shoaib (mohammad.shoaib@mail.utoronto.ca), Erin Bobicki (Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada)
16:00	Mon-DM3-03 **Microrheological characterization of covalent adaptable hydrogel degradation in response to environmental pH changes that mimics in the gastrointestinal tract** Nan Wu (naw316@lehigh.edu), Kelly Schultz (Lehigh University Chemical and Biomolecular Engineering)
16:20	Mon-DM3-04 **Rheological properties of phase transitions in polydisperse and monodisperse colloidal rod system** Shiqin He (shh317@lehigh.edu), Dominic Pascucci, Marco Caggioni, Seth Lindberg (Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, 18015, United States)
15:20 - 16:40	**Session: Advanced Experimental Methods in Colloid and Interface Science** Organizer/s: Qian Chen, Muzhou Wang Chair/s: Muzhou Wang
15:20	Mon-EM3-01 **Detecting and distinguishing particles in heterogeneous colloidal mixtures by size, refractive index and symmetry with Total Holographic Characterization** Rostislav Boltyanskiy (laphilips@gmail.com), David B. Ruffner, Hillary Gao, Fook Chiong Cheong, Laura A. Philips (Spheryx, Inc.)
15:40	Mon-EM3-02 **Investigating the Distribution of Surface Ligands in Drop-Casted Colloidal Gold Nanoparticles Using Scanning Near-Field Optical Microscopy (s-SNOM)** Hamed Kookhaee (Kookhaee@unm.edu), Terefe Habteyes

	(University of New Mexico | Center for High Technology Materials)
16:00	Mon-EM3-03 **Self-assembly of amphiphilic fluorescent nanoparticles for bioimaging** Tharindu Ranathunge (garanath@go.olemiss.edu), Mahesh loku Yaddehige, Mohammad Farid Zia, Jordan Varma, Alex Flynt, Davita Watkins (Department of Chemistry and Biochemistry, University of Mississippi, University, Mississippi 38677, USA)
16:20	Mon-EM3-04 **Novel methods for investigating the conditions that promote formation of pathogenic biofilms** Abner Bogan, Karen Fong, Aljosa Trmcic, Siyun Wang, John Frostad (john.frostad@ubc.ca) (Chemical Engineering University of British Columbia | Food Science University of British Columbia)
15:20 - 16:40	**Session: Wetting and Adhesion** Organizer/s: Shu Yang, Dongjin Seo Chair/s: Dongjin Seo
15:20	Mon-GM3-01 **Effect of surface wettability on the interfacial adhesion of thermosetting polymer composites** Ye Wang (Ye_Wang1@student.uml.edu), Christopher Hansen, Amy Peterson (Department of Plastics Engineering, University of Massachusetts Lowell, Lowell, MA 01854)
15:40	Mon-GM3-02 **Contact angle hysteresis and contact-line shape of a pendant droplet on a PDMS-coated anisotropically curved surface** Mingzhu Cui (mingzhucui@umass.edu), Rishabh Jain, Anthony Dinsmore (University of Massachusetts Amherst)
16:00	Mon-GM3-03 **Drainage from a Fluid-Handling Component with Multiple Orifices due to Inclination or Rotation** Chuck Extrand (chuck.extrand@gmail.com) (AceMarga LLC)
16:20	Mon-GM3-04 **Evaporative assembly of non-buckling shells on a superhydrophobic substrate** Ahmed Al Harraq (aahme22@lsu.edu), Bhuvnesh Bharti (Cain Department of Chemical Engineering Louisiana State University 3307 Patrick F. Taylor Hall Baton Rouge, LA 70803)
15:20 - 16:40	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Lydia Kisley

15:20	Mon-KM3-01 **Biomechanical measurements of a pressurized blood vessel-on-a-chip** Paul Salipante (paul.salipante@nist.gov), Steven Hudson, Stella Alimperti (Materials Science and Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD 20899)
15:40	Mon-KM3-02 **Dilatational Mechanics Evolution of Lung Surfactant Film throughout Acute Respiratory Distress Syndrome Progression Leads to Lung Collapse** Clara Ciutara (ciuta004@umn.edu), Joseph Zasadzinski (Chemical Engineering and Materials Science, University of Minnesota, Twin Cities)
16:00	Mon-KM3-03 **Vesicle shape dynamics under steady and oscillatory extensional flows – insights from simulations and experiments** Vivek Narsimhan (vnarsim@purdue.edu), Charlie Lin, Dinesh Kumar, Shiyan Wang, Channing Richter, Charles Schroeder (Davidson School of Chemical Engineering Purdue University West Lafayette, IN, 47907)
16:20	Mon-KM3-04 **The Role of Phospholipid Headgroup in the Formation and Interfacial Rheology of Binary Phospholipid-Cholesterol Monolayers** Andrew White (an.ry.white@gmail.com), Pranaya Ghate, Younjin Min (Department of Chemical and Environmental Engineering, University of California, Riverside, CA 92507)
15:20 - 16:40	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Stephan Link
15:20	Mon-MM3-01 **Driving energetically unfavorable dehydrogenation dynamics with plasmonics** Jennifer Dionne (jdionne@stanford.edu), Katherine Sytwu, Fariah Hayee, Briley Bourgeois, Daneil Angell (Stanford University)
15:45	Mon-MM3-02 **Spectroscopic signatures of plasmon-induced charge separation in gold nanorods on metal-oxide semiconductors** Stephen Lee (sl139@rice.edu), Behnaz Ostovar, Stephan Link (Department of Chemistry, Rice University)
16:00	Mon-MM3-03 **Analysis of the optical response of periodic arrays of nanostructures** Alejandro Manjavacas (manjavacas@unm.edu) (Department of Physics and Astronomy, University of New Mexico, US | Instituto de Óptica (IO-CSIC), Consejo Superior de Investigaciones Científicas, Spain)
16:25	Mon-MM3-04

	Plasmonic Coupling in Self-Assembled Nanocrystal Gels and Superlattices Zachary Sherman (zachary.sherman@austin.utexas.edu), Manuel Dominguez, Jiho Kang, Stephen Gibbs, Kihoon Kim, Delia Milliron, Thomas Truskett (McKetta Department of Chemical Engineering, University of Texas at Austin, Austin, TX)
15:20 - 16:40	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan Chair/s: Peter Beltramo
15:20	Mon-QM3-01 **Phase Morphology of Polymer Composites and Blends using Neutron and X-Ray Scattering** Caitlyn Wolf (caitlyn.wolf@nist.gov), Lorenzo Guio, Sage Scheiwiller, Christine Luscombe, Lilo Pozzo, Kathleen Weigandt (National Institute of Standards and Technology, Center for Neutron Research, Gaithersburg, MD | University of Washington, Department of Chemical Engineering, Seattle, WA)
15:40	Mon-QM3-02 **3D Printing and Microbial Degradation of Lignin-Zein Composite** Jin Gyun Lee (jlee229@lsu.edu), Ahmed Al Harraq, Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University)
16:00	Mon-QM3-03 **Microtensiometer Constant Surface Area Surfactant Adsorption** Steven Iasella (iasel001@umn.edu), Joseph Zasadzinski (University of Minnesota, Department of Chemical Engineering and Materials Science)
17:00 - 19:00	**Session: Exhibitor Presentations** Organizer/s: Ramanathan Nagarajan
	Mon-TM-01 **How can we help you to advance your colloid and surface science?** Matthias Stiemer, Dehua Yang (dyang@ebatco.com) (Exponential Business and Technologies Company (EBATCO))
	Mon-TM-02 **Nanoscience Instruments: provider of surface and interfacial analysis equipment** MATTHEW DIXON (mdixon@nanoscience.com) (Nanoscience Instruments)
	Mon-TM-03 **Droplet Lab: Smartphone-based Tensiometry** Abhimanyu Bhandankar (abhandankar@dropletlab.com) (|)
Tue, 15	
09:00 - 11:00	**Session: Langmuir Graduate Student Oral Presentation Award Symposium** Organizer/s: Ramanathan Nagarajan

	Chair/s: Lisa Biswal
09:00	Tue-LGS2-01 **Probing contact microstructure in dense colloidal suspensions** Shravan Pradeep (spradee@ncsu.edu), Lilian Hsiao, Alan Jacob, Safa Jamali, Mohamad Nabizadeh (Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC - 27695)
09:20	Tue-LGS2-02 **Dynamic control of active droplet propulsion in a nematic environment by an electric field.** Mojtaba Rajabi (mrajabi@kent.edu), Hao Wang, Oleg Lavrentovich (Advanced Materials and Liquid Crystal Institute, Kent State University, Kent, OH 44242, USA | Department of Physics, Kent State University, Kent, OH 44242, USA)
09:40	Tue-LGS2-03 **Mechanochemistry of Inorganic Nanostructures** Sarah Rehn (smr14@rice.edu) (Chemistry, Rice University)
10:00	Tue-LGS2-04 **Dynamics of polymers under extreme nanoconfinement of disordered nanoparticle packings** R Bharath Venkatesh (rbharath@seas.upenn.edu), Daeyeon Lee (Chemical and Biomolecular Engineering, The University of Pennsylvania, Philadelphia, Pennsylvania, United States)
10:20	Tue-LGS2-05 **Mechanisms of Transport Enhancement for Self-Propelled Nanoswimmers in a Porous Matrix** Haichao Wu (hcwusdu@gmail.com), Benjamin Greydanus, Daniel Schwartz (University of Colorado Boulder, Department of Chemical and Biological Engineering)
09:00 - 11:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Samanvaya Srivastava
09:00	Tue-AT1-01 **Directed Self-Assembly of Polarizable Nanoparticles (Keynote Lecture)** James Swan (jswan@mit.edu) ( )
09:40	Tue-AT1-02 **Liquid Crystalline Coacervates Composed of Chromonic Mesogens and Polyelectrolytes** Elizabeth Adeogun (knayani@uark.edu), Divya Iyer, Samanvaya Srivastava, Karthik Nayani (Ralph E. Martin Department of Chemical Engineering, University of Arkansas)

10:00	Tue-AT1-03 **Hybrid Hydrogels Comprising Interpenetrating Electrostatic and Covalent Networks** Defu Li (lidefu520@ucla.edu), Tobias Göckler, Samanvaya Srivastava (Department of Chemical and Biomolecular Engineering, University of California, Los Angeles, Los Angeles, CA 90095)
10:20	Tue-AT1-04 **Molecular Encapsulation and Molecular Exchange in Polyelectrolyte Complex Micelles** Sachit Shah (spshah6@knights.ucf.edu), Lorraine Leon (Department of Materials Science and Engineering, University of Central Florida, Orlando, FL 32816, USA)
10:40	Tue-AT1-05 **Field-driven reversible alignment and gelation of magneto-responsive soft anisotropic microbeads** Natasha Castellanos (nimorale@ncsu.edu), Bhuvnesh Bharti, Orlin Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University)
09:00 - 11:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Cari Dutcher
09:00	Tue-BT1-01 **Foams with Enhanced Rheology for Stopping Bleeding** Hema Choudhary (hema994@terpmail.umd.edu), Michael B. Rudy, Matthew B. Dowling, Srinivasa R. Raghavan (Chemical and Biomolecular Engineering, University of Maryland College Park)
09:20	Tue-BT1-02 **Drainage via Stratification in Foam Films Made with Polymer-surfactant Complexes** Chenxian Xu (cxu41@uic.edu), Carina Martinez, Vivek Sharma (Department of Chemical Engineering, UIC)
09:40	Tue-BT1-03 **Particle-coated bubbles driven by ultrasound for high-frequency interfacial rheology** Saikat Saha (s.saha@tudelft.nl), Paul Luckham, Valeria Garbin (Department of Chemical Engineering, Delft University of Technology, 2629 HZ Delft, The Netherlands)
10:00	Tue-BT1-04 **Foaming and De-foaming Phenomena of Bi-phase Makeup Removers** Zhi Li (zhi.li@rd.loreal.com), Hy Bui (L'Oréal Research and Innovation, Clark, NJ 07066)
10:20	Tue-BT1-05 **Foam and emulsion stability and its relation with surface rheology (Keynote Lecture)** Dominique Langevin (dominique.langevin@u-psud.fr) (Laboratoire de Physique des Solides, CNRS, Université Paris Saclay)

09:00 - 11:00	**Session: Active & Responsive Colloidal Matter** Organizer/s: Bhuvnesh Bharti, Carlos Silvera Batista Chair/s: Carlos Silvera Batista
09:00	Tue-CT1-01 **Fabrication and Active Propulsion of Patchy Ellipsoidal Microparticles in Electric Field** Jin Gyun Lee (jlee229@lsu.edu), Ahmed Al Harraq, Kyle Bishop, Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University)
09:20	Tue-CT1-02 **Nonlinear Dynamics of Semiflexible Colloidal Filaments in Eccentric Time-Varying Magnetic Fields** Aldo Stefano Spatafora Salazar (astefanoss@rice.edu), Lucas H. P. Cunha, Sibani Lisa Biswal (Department of Chemical and Biomolecular Engineering Rice University)
09:40	Tue-CT1-03 **Nonequillibrium shape fluctuations and motility of a droplet enclosing active particles** Gasper Kokot, Hammad Faizi, Gerardo Pradillo, Alexey Snezhko, Petia Vlahovska (petia.vlahovska@northwestern.edu) (Northwestern University)
10:00	Tue-CT1-04 **Mesoporous, Moisture-Absorbent, Temperature-Controlled Hydrogels For Atmospheric Water Harvesting** Galen Mandes (gmandes@princeton.edu), Jean-Francois Louf, Xiaohui Xu, Tapomoy Bhattacharjee, Rodney Priestley, Sankaran Sundaresan, Sujit Datta (Department of Chemical and Biological Engineering, Princeton University | Department of Chemistry and Life Science, United States Military Academy)
10:20	Tue-CT1-05 **Synthesis of stimuli-responsive skins around hydrogels to regulate solute release** Sai Nikhil Subraveti (nikhil15@terpmail.umd.edu), Srinivasa Raghavan (University of Maryland - College Park)
10:40	Tue-CT1-06 **Manipulating Surface-Modified Cs:WO_3 Nanocrystals in Liquid Crystals for solar transmission control** Capucine Cleret de Langavant (capucine.cleretdelangavant@saint-gobain.com), Yannis Cheref, Giuseppe Boniello, Louise Daugas, Olivier Mondain-Monval, Virginie Ponsinet, Frédéric Mondiot, Thierry Gacoin, Jongwook Kim (Laboratoire de Physique de la Matière Condensée, UMR 7643, CNRS/ École Polytechnique, Institut Polytechnique de Paris, Palaiseau, France | Surface du Verre et Interface, UMR 125, CNRS/Saint-Gobain, Aubervilliers, France)
09:00 - 11:00	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Jeffrey Richards

09:00	Tue-DT1-01 **Microstructure and rheology of shear-thickening colloidal suspensions with varying interparticle friction: comparison of experiment with theory and simulation models, and applications to human exploration of space (Keynote Lecture)** Norman Wagner (wagnernj@udel.edu), Yu-Fan Lee, Maria Katzarova, Richard Dombrowski (University of Delaware, Dept of Chemical and Biomolecular Engineering)
09:40	Tue-DT1-02 **Tunable yield stresses in suspensions of porous microcapsules *via* internal additives** Ryan Poling-Skutvik (ryanps@uri.edu), Abhishek Dhand, Chinedum Osuji (University of Rhode Island Department of Chemical Engineering)
10:00	Tue-DT1-03 **Droplet-based microfluidic tool to quantify viscosity of concentrating protein solutions** Deyu Yang (deyuy@andrew.cmu.edu) (Carnegie Mellon University)
10:20	Tue-DT1-04 **The hydrodynamic stresslet: representing non-equilibrium motion in a model biological cell.** Emma Gonzalez (emmagg@stanford.edu), Roseanna Zia (Stanford University)
10:40	Tue-DT1-05 **Dilatational rheological behavior of lysolipid (lung surfactant Inhibitor) in an in situ lung alveoli** Sourav Barman (sbarman@umn.edu), Steven Iasella, Joseph Zasadzinski (University of Minnesota-Twin Cities)
09:00 - 11:00	**Session: Advanced Experimental Methods in Colloid and Interface Science** Organizer/s: Qian Chen, Muzhou Wang Chair/s: Qian Chen
09:00	Tue-ET1-01 **Tunable chiral optical properties in semiconductor nanocrystals (Keynote Lecture)** Vivian Ferry (veferry@umn.edu) (Chemical Engineering & Materials Science, University of Minnesota)
09:40	Tue-ET1-02 **Dial-a-material: precise manufacturing technology using early growth for plasmonic materials up to 100 nm** Bruno Pinho (bp421@cam.ac.uk), Laura Torrente-Murciano (Department of Chemical Engineering and Biotechnology, University of Cambridge, Cambridge, UK)
10:00	Tue-ET1-03

	New methods to map the interfacial mobility and distribution of amphiphiles at fluid interfaces based on liquid crystals Sangchul Roh (sr974@cornell.edu), Nicholas Abbott (Smith School of Chemical and Biomolecular Engineering, Cornell University)
10:20	Tue-ET1-04 **Monitoring Halide Exchange and Perovskite Nanocrystals using Diffusion Ordered NMR Spectroscopy** Mathew Maye (mmmaye@syr.edu) (Department of Chemistry, Syracuse University)
10:40	Tue-ET1-05 **Does microstructure and packing of polyanions in polelectrolyte complex coacervates depend on the conformation in the parent solution?** Ulrich Scheler (scheler@ipfdd.de) (Leibniz-Institut für Polymerforschung Dresden e.V.)
09:00 - 11:00	**Session: Wetting and Adhesion** Organizer/s: Shu Yang, Dongjin Seo Chair/s: Shu Yang
09:00	Tue-GT1-01 **Nature-inspired structured and functional surfaces for water-energy nexus (Keynote Lecture)** Zuankai Wang (zuanwang@cityu.edu.hk) ( )
09:40	Tue-GT1-02 **Adhesion Strength and Fatigue Behavior of Single-Lap Joints Bonded with Epoxy Nanocomposite Adhesives** Chien-Wei Chu, Ken Kojio, Atsushi Takahara (takahara@cstf.kyushu-u.ac.jp) (Kyushu University)
10:00	Tue-GT1-03 **Robust oil repellent surfaces by using microscale hyperbolic structures** Hyunsik Yoon (hsyoon@seoultech.ac.kr) (Seoul National University of Science & Technology)
10:20	Tue-GT1-04 **Effect of Polymer Concentration on Air Entrainment Dynamics under Droplet Impact** Ziwen He (ziwen_he1@baylor.edu), Huy Tran, Min Pack (Baylor University)
10:40	Tue-GT1-05 **Condensation on the Old Man Cactus spine: droplets distant coalescence** Nicolò Giuseppe Di Novo (nicolo.dinovo@unitn.it), Lakshminath Kundanati, Gabriele Greco, Stefano Siboni, Claudio Della Volpe, Alvise Bagolini, Nicola Maria Pugno

	(Laboratory of Bio-Inspired, Bionic, Nano, Meta, Materials & Mechanics, Department of Civil, Environmental and Mechanical Engineering, University of Trento, Via Mesiano, 77, 38123 Trento, Italy | Micro Nano Facility, FBK-Sensors and Devices, Trento, Italy)
09:00 - 11:00	**Session: Surface Science and Catalysis** Organizer/s: Danmeng Shuai, Paul DeSario, Chris Karwacki Chair/s: Paul DeSario
09:00	Session starts at 9:20 AM ET
09:20	Tue-LT1-01 **Catalyst design rooted in inorganic materials properties** Zachary Ulissi (zulissi@andrew.cmu.edu) (Department of Chemical Engineering, Carnegie Mellon University)
09:40	Tue-LT1-02 **Single-Atom Catalysis for Oxidizing Contaminants of Emerging Concern via High-Valent Fe Species** Zhe Zhou (zhou0530@gwu.edu), Mengqiao Li, Chunguang Kuai, Yuxin Zhang, Virginia Smith, Feng Lin, Ashlee Aiello, David Durkin, Hanning Chen, Danmeng Shuai (The George Washington University)
10:00	Tue-LT1-03 **Dilemma of activity and stability: Intrinsic photoreactivity promotes 2D nanomaterial decomposition under radical attack** Mengqiao Li (lmq123@gwu.edu), Danmeng Shuai (Department of Civil and Environmental Engineering, The George Washington University)
10:20	Tue-LT1-04 **Toward Single Atom Catalysis for Environmental Application (Keynote Lecture)** Jaehong Kim (jaehong.kim@yale.edu) (Yale University)
09:00 - 11:10	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Matthew Sheldon
09:00	Tue-MT1-01 **From photons to chemical bonds (Keynote Lecture)** Prashant Jain (jain@illinois.edu) (Department of Chemistry, Materials Research Laboratory, Beckman Institute for Advanced Science and Technology, and Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL 61801, USA.)
09:40	Tue-MT1-02 **Shape and Plasmonic Properties of Magnesium Nanoparticles** Jeremie Asselin, Christina Boukouvala, Elizabeth Hopper, Thomas Wayman, Quentin Ramasse, John Biggins, Emilie Ringe (er407@cam.ac.uk)

	(Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge, United Kingdom, CB3 0FS | Department of Earth Sciences, University of Cambridge, Downing Street, Cambridge, United Kingdom, CB2 3EQ)
10:05	Tue-MT1-03 **Manipulating Surface-modified Cs:WO_3 Nanocrystals in Liquid Crystal for Solar Transmission Control** Capucine Cleret de Langavant (capucine.cleretdelangavant@saint-gobain.com), Yannis Cheref, Giuseppe Boniello, Louise Daugas, Olivier Mondain-Monval, Virginie Ponsinet, Frédéric Mondiot, Thierry Gacoin, Jongwook Kim (Laboratoire de Physique de la Matière Condensée, UMR 7643, CNRS/École Polytechnique, Institut Polytechnique de Paris, Palaiseau, France | Surface du Verre et Interface, UMR 125, CNRS/Saint-Gobain, Aubervilliers, France)
10:20	Tue-MT1-04 **``hot'' photo-luminescence from metals - quantitative theory and application to anti-Stokes thermometry** Yonatan Sivan (sivanyon@bgu.ac.il), Yonatan Dubi (School of Electrical and Computer Engineering, Ben-Gurion University)
10:45	Tue-MT1-05 **Plasmonic Mapping for Sensor Design** Amanda Haes (amanda-haes@uiowa.edu) (University of Iowa)
09:00 - 11:00	**Session: Chemical Interactions Between Colloids and at Interfaces** Organizer/s: Robert Macfarlane, Matthew Jones Chair/s: Matthew Jones
09:00	Tue-OT1-01 **Designing Colloidal Quantum Dot-Molecule Interfaces for Photocatalysis (Keynote Lecture)** Francesca Arcudi, Luka Dordevik, Samuel Stupp, Emily Weiss (e-weiss@northwestern.edu) (Department of Chemistry, Northwestern University | Center for Bio-Inspired Energy Science, Simpson-Querrey Institute, Northwestern University)
09:40	Tue-OT1-02 **Optical Processing of DNA-Programmed Nanoparticle Superlattices** Leonardo Zornberg (lzornber@mit.edu), Paul Gabrys, Robert Macfarlane (Department of Materials Science and Engineering, MIT)
10:00	Tue-OT1-03 **Developing colloidal interaction potentials by integrating equilibrium and non-equilibrium measurements** Scott Fenton (scottmfenton@ucsb.edu), Brian Ryu, Tuan Nguyen, Matthew Helgeson, Roseanna Zia (University of California Santa Barbara)

10:20	Tue-OT1-04 **Single-Particle Mapping of an O_h to T_d Symmetry Reduction Growth Mechanism in Metal Nanoparticle Synthesis** Muhua Sun (ms166@rice.edu), Zhihua Cheng, Matthew Jones (Department of Chemistry, Rice University)
09:00 - 11:00	**Session: Nanomaterials & Advanced Manufacturing** Organizer/s: Amy Peterson, Esteban Urena-Benavides Chair/s: Amy Peterson
09:00	Tue-PT1-01 **Combinatorial Synthesis of Polyelemental Nanoparticles (LaMer Keynote Lecture)** Pengcheng Chen (pcchen@berkeley.edu) (Kavli Energy Nanoscience Institute University of California, Berkeley)
09:40	Tue-PT1-02 **Application of machine learning to understand and predict the size of quantum dots in the hot injection syntheses** Fabio Baum (fabiobaum.research@gmail.com), Ariadne Koche, Tatiane Pretto, Lilo Pozzo, Marcos Jose Leite Santos (Department of Chemical Engineering, University of Washington)
10:00	Tue-PT1-03 **Photoreduction and chemical reduction of magnetic bimetallic nanoparticles** Francis Acquaye (fyacquaye@crimson.ua.edu) (The University of Alabama)
10:20	Tue-PT1-04 **Particle motion artifacts in equilibrium magnetization measurements of large iron oxide nanoparticles** Shehaab Savliwala (s.savliwala@ufl.edu), Sitong Liu, Carlos Rinaldi-Ramos (Department of Chemical Engineering, University of Florida)
10:40	Tue-PT1-05 **Optimizing superparamagnetic iron oxide nanoparticle synthesis and PEG coating for magnetic particle imaging performance and long blood circulation half-life** Sitong Liu (liusitong@ufl.edu), Andreina Chiu Lam, Angelie Rivera-Rodriguez, Ryan DeGroff, Shehaab Savliwala, Nicole Sarna, Carlos Rinaldi-Ramos (Department of Chemical Engineering, University of Florida, Gainesville, FL, 32611)
09:00 - 11:00	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan Chair/s: Ning Wu
09:00	Tue-QT1-01 **Factory-on-a-chip: scaling-up droplet microfluidics for large-scale materials synthesis (Keynote Lecture)** Daeyeon Lee (daeyeon@seas.upenn.edu), David Issadore (Department of Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA 19104)

09:40	Tue-QT1-02 **Axisymmetric Drop Shape Analysis of Compound Droplets** Guangle Li (guangle@hawaii.edu), Yi Y. Zuo (Department of Mechanical Engineering, University of Hawaii at Manoa)
10:00	Tue-QT1-03 **Osmosis-induced reversible color switching of pigmented photonic capsules** Zhe Gong (zhegong@seas.upenn.edu), Zhuangsheng Lin, Leila Deravi, Daeyeon Lee (Department of Chemical and Biomolecular Engineering, University of Pennsylvania)
10:20	Tue-QT1-04 **Multicomponent Diffusion of Interacting, Nonionic Micelles with Hydrophobic Solutes** Nathan Alexander (npalexander@ucdavis.edu), Ronald Phillips, Stephanie Dungan (Department of Chemical Engineering, University of California at Davis)
10:40	Tue-QT1-05 **Synergistic Marangoni Spreading Driven by Surface Gradients of Binary Catanionic Surfactant Mixtures** Tsung-Lin Hsieh (tsunglih@andrew.cmu.edu), Stephen Garoff, Robert Tilton (Center for Complex Fluids Engineering, Carnegie Mellon University | Department of Chemical Engineering, Carnegie Mellon University)
11:20 - 12:10	**Session: 2020 Unilever Award Lecture** Organizer/s: Ramanathan Nagarajan Chair/s: Joseph Carnali, Ponisseril Somasundaran
11:20	Introduction of 2020 Unilevar Award Recipient by Ponisseril Somasundaran and Joseh Carnali, Unilever Committee Chairs
11:25	Tue-ST1-01 **Life in a Tight Spot: How Bacteria Swim, Disperse, and Grow in Complex Spaces** Sujit Datta (ssdatta@princeton.edu) (Chemical and Biological Engineering, Princeton University)
12:40 - 13:30	**Session: 2021 Unilever Award Lecture** Organizer/s: Ramanathan Nagarajan Chair/s: Joseph Carnali, Ponisseril Somasundaran
12:40	Introduction of 2021 Unilevar Award Recipient by Ponisseril Somasundaran and Joseh Carnali, Unilever Committee Chairs
12:45	Tue-ST2-01 **Soft friction in colloidal and polymeric materials** Lilian Hsiao (lilian_hsiao@ncsu.edu) (North Carolina State University)
13:40 - 15:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Samanvaya Srivastava
13:40	Tue-AT2-01

	Dynamic Magnetochromatic Response of Concentrated Suspensions of Janus Particles Jinghui Gao (jig318@lehigh.edu), Samuel Wilson-Whitford, James Gilchrist (Department of Chemical and Biomolecular Engineering, Lehigh University)
14:00	Tue-AT2-02 **Assembly of magnetic microspheres under combined electric and magnetic fields** Md Ashraful Haque, Xingrui Zhu (xzhu1@mymail.mines.edu), Benjamin Hanson, Ning Wu (Colorado School of Mines)
14:20	Tue-AT2-03 **Magnetic assembly of micro-satellites on Janus colloids** Ahmed Al Harraq (aahme22@lsu.edu), JinGyun Lee, Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University, Baton Rouge 3307 Patrick F. Taylor Hall Baton Rouge, LA 70803)
14:40	Tue-AT2-04 **Dynamic colloidal clusters in magnetic fields** Ahmed Al Harraq, Bhuvnesh Bharti (bbharti@lsu.edu) (Cain Department of Chemical Engineering, Louisiana State University, Baton Rouge, LA 70803)
13:40 - 15:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Daniel Miller
13:40	Tue-BT2-01 **Impact of interfacial viscosity on the stability of a translating droplet** Natasha Singh (singh567@purdue.edu), Vivek Narsimhan (Purdue University)
14:00	Tue-BT2-02 **Gas transport across nanometer thin films between microbubbles** Yuqi Yang, Matthew Biviano, Jixiang Guo, Joseph Berry, Raymond Dagastine (rrd@unimelb.edu.au) (Department of Chemical Engineering, University of Melbourne, Parkville 3010, Australia)
14:20	Tue-BT2-03 **Influences of Surfactant and Salt on Micellar Assemblies and Foam Film Stability** Shang Gao (gshang@g.ucla.edu), Chrystian Ochoa, Vivek Sharma, Samanvaya Srivastava (Chemical & Biomolecular Engineering Department, University of California, Los Angeles)
14:40	Tue-BT2-04 **Interconnectivity of Polymerized High Internal Phase Emulsions (PolyHIPEs): Effect of Interdroplet Interactions** Muchu Zhou (muchu@nmsu.edu), Alireza Bandegi, Reza Foudazi (Department of Chemical and Materials Engineering, New Mexico State University, Las Cruces, NM 88003)

13:40 - 15:00	**Session: Active & Responsive Colloidal Matter** Organizer/s: Bhuvnesh Bharti, Carlos Silvera Batista Chair/s: Bhuvnesh Bharti
13:40	Tue-CT2-01 **Self-locomotion of active droplets enabled by nematic environment (Keynote Lecture)** Oleg Lavrentovich (olavrent@kent.edu), Mojtaba Rajabi, Hend Baza, Taras Turiv (Advanced Materials and Liquid Crystal Institute, Department of Physics, Kent State University)
14:20	Tue-CT2-02 **Assembly and propulsion of linear colloidal chains under combined electric and magnetic fields** Md Ashraful Haque (mhaque@mines.edu), Nomin Uyanga, Xingrui Zhu, Ning Wu (Colorado School of Mines)
14:40	Tue-CT2-03 **Quincke oscillations of colloids at planar electrodes** Zhengyan Zhang (zz2480@columbia.edu), Hang Yuan, Yong Dou, Monica Olvera de la Cruz, Kyle Bishop (Department of Chemical Engineering, Columbia University, New York, NY 10025, USA)
13:40 - 15:00	**Session: Surface and Interfacial Forces** Organizer/s: Younjin Min, Ray Dagastine, Mustafa Akbulut Chair/s: Mustafa Akbulut, Younjin Min
13:40	Tue-HT2-01 **Impact of processing and multicomponent adsorption on fluid-fluid interfaces and interfacial forces (Keynote Lecture)** Lynn Walker (lwalker@andrew.cmu.edu) (Department of Chemical Engineering, Carnegie Mellon University)
14:20	Tue-HT2-02 **Characterizing the Hydrophobic Interactions of Fusion Peptides of Coronaviruses using Single-Molecule Force Measurements** Cindy Qiu (xq75@cornell.edu), Miya Bidon, Susan Daniel, Nicholas Abbott (Robert Frederick Smith School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY 14853)
14:40	Tue-HT2-03 **Nanomechanical measurements of microcapsules and microparticles** Joseph Berry (berryj@unimelb.edu.au), Matthew Biviano, Ray Dagastine (Department of Chemical Engineering, University of Melbourne, Parkville 3010, Australia)
13:40 - 15:00	**Session: Colloids and Interfaces in Environmental Applications** Organizer/s: Xing Xie, Onur Apul, Chad Vecitis, Navid Saleh Chair/s: Chad Vecitis
13:40	Tue-JT2-01

	Leveraging Colloid Properties for Efficient and Targeted Foliar-applied Agrochemicals (Keynote Lecture) Gregory Lowry (glowry@cmu.edu), Yilin Zhang, Juan Pablo Giraldo, Robert Tilton (| |)
14:20	Tue-JT2-02 **Liquid sheet breakup and droplet evolution in agricultural sprays** Iaroslav Makhnenko (makhn003@umn.edu), Cari Dutcher, Elizabeth Alonzi, Christine Colby, Steven Fredericks (University of Minnesota, Department of Mechanical Engineering)
14:40	Tue-JT2-03 **Under pressure: Hydrogel swelling in a granular medium** Jean-Francois Louf (jeanfrancois.louf@gmail.com), Nancy Lu, Margaret O'Connell, Jeremy Cho, Sujit Datta (Princeton University)
13:40 - 15:00	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Sarah Perry
13:40	Tue-KT2-01 **Bi-disperse multiple particle tracking microrheology measures length scale dependent re-engineering of polymer-peptide hydrogels by human mesenchymal stem cells** John McGlynn (jam217@lehigh.edu), Kilian Druggan, Kiera Croland, Kelly Schultz (Department of Chemical and Biomolecular Engineering, Lehigh University, Iacocca Hall, 111 Research Drive, Bethlehem PA 18015)
14:00	Tue-KT2-02 **Designed Interfaces Between Proteins and Inorganic Crystals for Templated Assembly and Co-Assembly** Sakshi Yadav (sakshi.yadav@pnnl.gov), Shuai Zhang, Harley Pyles, David Baker, James de Yoreo (Pacific Northwest National Lab)
14:20	Tue-KT2-03 **Fluorescent Quantum Defect Based Nanosensors for Biomedical Applications (LaMer Keynote Lecture)** Mijin Kim (kimm7@mskcc.org), Daniel Heller, YuHuang Wang (Molecular Pharmacology Program, Memorial Sloan Kettering Cancer Center, New York, NY 10065, United States | Department of Chemistry & Biochemistry, University of Maryland, College Park, MD 20742, United States)
13:40 - 15:00	**Session: Surface Science and Catalysis** Organizer/s: Danmeng Shuai, Paul DeSario, Chris Karwacki Chair/s: Paul DeSario
13:40	Tue-LT2-01 **What makes for a well-defined or ‘single-site’ oxidation catalyst? (Keynote Lecture)**

	Justin Notestein (j-notestein@northwestern.edu) (Chemical and Biological Engineering Center for Catalysis and Surface Science Northwestern University)
14:20	Tue-LT2-02 **A Functional Model of Single Cobalt Sites on C-doped Carbon Nitride for Solar CO2 Reduction** Gonghu Li (gonghu.li@unh.edu), Peipei Huang (University of New Hampshire)
14:40	Tue-LT2-03 **Single Pt atom catalyst synthesis and its application for selective propane dehydrogenation to propylene** Sufeng Cao (sufeng.cao@aramcoamericas.com), Zhichun Si, E. Charles H. Sykes, Dunwei Wang (Aramco Services Company: Aramco Research Center—Boston, MA 02139, USA. | Department of Chemical and Biological Engineering, Tufts University, Medford, MA 02155, USA. | Department of Chemistry, Merkert Chemistry Center, Boston College, Chestnut Hill, MA 02467, USA.)
13:40 - 15:00	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Matthew Sheldon
13:40	Tue-MT2-01 **Predicting and Controlling Correlated Light-Matter Interactions at the Atomic-Scale** Prineha Narang (prineha@seas.harvard.edu) ( )
14:05	Tue-MT2-02 **Dielectric Resonance-Enhanced Photocatalysis on High Refractive Index Semiconductor Nanostructures** Sundaram Bhardwaj Ramakrishnan (suramak@okstate.edu), Ravi Teja Addanki Tirumala, Farshid Mohammadparast, Marimuthu Andiappan (School of Chemical Engineering, Oklahoma State University)
14:20	Tue-MT2-03 **Plasmonics or Dielectrics? Light with a Phase Transition** Gururaj Naik (guru@rice.edu) (Electrical & Computer Engineering, Rice University)
14:45	Tue-MT2-04 **Near- and Far-Field Response of Thin Metallic Nanodisks** Lauren Zundel (lzundel@unm.edu), Paul Gieri, Stephen Sanders, Alejandro Manjavacas (Department of Physics and Astronomy, University of New Mexico, US)
13:40 - 15:00	**Session: Interfacing Biology with Materials** Organizer/s: Ariel Furst, Yi Zhang Chair/s: Ariel Furst, Yi Zhang

13:40	Keynote Lecture by Anne Andrews
14:20	Tue-NT2-01 **Complex Colloidal Micro-transducers for Bacteria Activity Sensing** Hari Vijayamohanan (vijayh@mit.edu), Hannah Feldstein, Alberto Concellón, Jie Li, Mathias Kolle, Tim Swager (Department of Chemistry, Massachusetts Institute of Technology)
14:40	Tue-NT2-02 **Studies of hierarchical nanoporous gold as a promising nanomaterial for biosensor applications** Palak Sondhi (ps2f7@mail.umsl.edu), Dharmendra Neupane, Alexei V. Demchenko, Keith Stine (Department of Chemistry and Biochemistry, University of Missouri, Saint Louis (UMSL))
13:40 - 15:00	**Session: Chemical Interactions Between Colloids and at Interfaces** Organizer/s: Robert Macfarlane, Matthew Jones Chair/s: Robert Macfarlane
13:40	Tue-OT2-01 **Prediction of Structure in Binary Superlattices with Perovskite Nanocubes (Keynote Lecture)** Alex Travesset (trvsst@ameslab.gov) (Department of Physics and Astronomy, Iowa State University | Ames Lab)
14:20	Tue-OT2-02 **Nanoparticle Assembly in High Polymer Concentration Solutions Increases Superlattice Stability** Margaret Lee (mlee22@mit.edu), Alfredo Alexander-Katz, Robert Macfarlane (Massachusetts Institute of Technology)
14:40	Tue-OT2-03 **On the Thermodynamic Stability of Binary Superlattices of Polystyrene Functionalized Nanocrystals** Jianshe Xia (xiajs6075@iccas.ac.cn), Hongxia Guo, Alex Travesset (Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences | University of Chinese Academy of Sciences)
13:40 - 15:00	**Session: Nanomaterials & Advanced Manufacturing** Organizer/s: Amy Peterson, Esteban Urena-Benavides Chair/s: Esteban Urena-Benavides
13:40	Tue-PT2-01 **An Easy-to-use Method for Quantitatively Determining the Hydrophobicity of Nanoparticles** Guangle Li (guangle@hawaii.edu), Yi Y. Zuo (Department of Mechanical Engineering, University of Hawaii at Manoa)
14:00	Tue-PT2-02

	Neutrally Charged Nanosilver Antimicrobial Effects: A Surface Thermodynamic Perspective Yudi Wu (yudi1.wu@famu.edu), Gang Chen (Department of Civil and Environmental Engineering, FAMU-FSU College of Engineering, 2525 Pottsdamer Street, Tallahassee, Florida, 32310, USA.)
14:20	Tue-PT2-03 **A new class of biodegradable, tough, and clear polysaccharide films reinforced with chitosan dendricolloids** Yosra Kotb (ymkotb@ncsu.edu), Orlin D. Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC, USA)
14:40	Tue-PT2-04 **Multidimensional free energy landscapes for the binding of functionalized nanoparticles to lipid bilayers** Jonathan Sheavly (sheavly@wisc.edu), Alex Chew, Reid Van Lehn (University of Wisconsin-Madison)
13:40 - 15:00	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan
13:40	Tue-QT2-01 **Analysis of sodium dodecyl sulfate contamination via dilational rheology measurements** Elton L. Correia (correiaelton@ou.edu), Dimitrios V. Papavassiliou, Sepideh Razavi (Chemical, Biological and Materials Engineering, The University of Oklahoma)
14:00	Tue-QT2-02 **Thermoreversible gels composed of hollow adhesive silica nanorods with short-range attractions** Haesoo Lee (leeh@udel.edu), Khushboo Suman, Ryan Murphy, Norman Wagner (Center for Neutron Science, Department of Chemical and Biomolecular Engineering, University of Delaware, Newark, Delaware 19716, United States)
14:20	Tue-QT2-03 **Exploring Nonadditive Ion Effects on Protein Stability in Aqueous Solutions** Pho Bui (ptb2@psu.edu), Paul Cremer (Department of Chemistry, The Pennsylvania State University, University Park, PA 16802.)
14:40	Tue-QT2-04 **Specific effects of ionic liquid constituents on the stability of particle dispersions** Dora Takacs, Bojana Katana, Istvan Szilagyi (szistvan@chem.u-szeged.hu) (MTA-SZTE Lendület Biocolloids Research Group, Department of Physical Chemistry and Materials Science, University of Szeged, Hungary)
15:20 - 16:40	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Jaime Juarez

15:20	Tue-AT3-01 **Networks of Anisotropic, Magnetically-Polarized Colloidal Particles Reversibly Reconfigure under the Influence of an External Magnetic Field** Matthew Dorsey (madorse2@ncsu.edu), Carol Hall, Orlin Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University)
15:40	Tue-AT3-02 **Anisotropic Colloidal Assembly in AC Electric Fields** Rachel S. Hendley (rachel.stein.1@gmail.com), Michael A. Bevan (Chemical & Biomolecular Engineering, Johns Hopkins University)
16:00	Tue-AT3-03 **pH mediated colloidal aggregation to separation transitions in low frequency oscillatory electric fields** Medha Rath, Jacqueline Weaver, Taylor Woehl (tjwoehl@umd.edu) (Department of Chemical and Biomolecular Engineering, University of Maryland, College Park)
16:20	Tue-AT3-04 **Endoskeletal Droplets under Standing Surface Acoustic Waves: Effects of Acoustic Radiation Forces** Gazendra Shakya (gazendra.shakya@colorado.edu), Tao Yang, Yu Gao, Kefin Fajrial, Mark Borden, Xiaoyun Ding (Department of Mechanical Engineering, University of Colorado at Boulder, CO, USA)
15:20 - 16:40	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Daniel Miller
15:20	Tue-BT3-01 **Fluid-like interfacial dynamics of sodium dodecyl sulphate stabilized hexadecane nanodrops** Reghan J. Hill (reghan.hill@mcgill.ca) (Department of Chemical Engineering, McGill University)
15:40	Tue-BT3-02 **The impact of viscous stress and surfactant concentration on the micro-scale droplet coalescence** Yun Chen (chen5751@umn.edu), Cari Dutcher (University of Minnesota)
16:00	Tue-BT3-03 **Peeling back the layers: Understanding how the surface structure and stability of oil-in-water nanoemulsions are impacted by interfacial polymer layering** Emma Tran (ntran@uoregon.edu), Ashley Mapile, Geraldine Richmond (University of Oregon)
16:20	Tue-BT3-04 **Comb-polyelectrolyte Stabilized Polyelectrolyte Complex Coacervate Emulsions**

	Shang Gao (gshang@g.ucla.edu), Samanvaya Srivastava (Department of Chemical and Biomolecular Engineering, University of California, Los Angeles, Los Angeles, CA 90095)
15:20 - 16:40	**Session: Surface and Interfacial Forces** Organizer/s: Mustafa Akbulut, Younjin Min, Ray Dagastine Chair/s: Mustafa Akbulut, Younjin Min
15:20	Tue-HT3-01 **Growth and Coalescence of Nanoscopic Mesas in Stratifying Micellar Foam Films** Chenxian Xu (cxu41@uic.edu), Subinuer Yilixiati, Yiran Zhang, Vivek Sharma (Department of Chemical Engineering, UIC)
15:40	Tue-HT3-02 **Multiscale dynamics of colloidal deposition and erosion in porous media** Navid Bizmark (nbizmark@princeton.edu), Joanna Schneider, Rodney Priestley, Sujit Datta (1Princeton Institute for the Science and Technology of Materials, Princeton University, Princeton, New Jersey 08540, United States of America | 2Department of Chemical and Biological Engineering, Princeton University, Princeton, New Jersey 08540, United States of America)
16:00	Tue-HT3-03 **DLVO energy landscape of a Janus particle with a nonuniform cap** Siddharth Rajupet (siddharth.rajupet@case.edu), Aidin Rashidi, Christopher Wirth (Case Western Reserve University)
15:20 - 16:40	**Session: Colloids and Interfaces in Environmental Applications** Organizer/s: Xing Xie, Onur Apul, Chad Vecitis, Navid Saleh Chair/s: Onur Apul
15:20	Tue-JT3-01 **Dispersing Crude Oils of Varying Viscosities Using a Food-Grade Dispersant** Futoon Aljirafi (faljiraf@umd.edu), Jay Fernandes, Niti Agrawal, Vijay John, Srinivasa Raghavan (Department of Chemical & Biomolecular Engineering, University of Maryland, College Park, Maryland 20742, United States)
15:40	Tue-JT3-02 **Effect of nanoparticle addition on oil spill bioremediation by hydrocarbonoclastic bacterium *A. borkumensis*** Amber Pete (apete4@lsu.edu), JinGyun Lee, Michael Benton, Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University, Baton Rouge, LA 70803)
16:00	Tue-JT3-03 **Colloidal Interactions of Microplastics at Interfaces of Liquid Crystals: A Soft Matter Platform for Rapid Characterization of Microplastics** Fiona Mukherjee (fm448@cornell.edu), Xin Wang, Nicholas L. Abbott (Smith School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY)

16:20	Tue-JT3-04 **Soft dendritic colloidal particles as novel environmentally-friendly microcleaners for microplastic remediation** Lucille Verster (lverste@ncsu.edu), Rachel Bang, Haeleen Hong, Orlin Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University)
15:20 - 16:40	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Lydia Kisley
15:20	Tue-KT3-01 **Foliar applied reactive oxygen species (ROS)-responsive star polymers protect plant photosynthesis under abiotic stress** Yilin Zhang (yilinz1@andrew.cmu.edu), Gregory Lowry, Juan Pablo Giraldo, Robert Tilton (Carnegie Mellon University)
15:40	Tue-KT3-02 **Chemotactic smoothing of bacterial populations** Tapomoy Bhattacharjee (tapomoyb@princeton.edu), Daniel Amchin, Ricard Alert, Jenna Ott, Sujit Datta (Princeton University)
16:00	Tue-KT3-03 **Thermodynamic and Rheological Consequences of Healthy versus Diseased Model Myelin Monolayers and Implications for Demyelination** Andrew White (an.ry.white@gmail.com), Pranaya Ghate, Chidubem Onyeagoro, Younjin Min (Department of Chemical and Environmental Engineering, University of California, Riverside, CA 92521)
16:20	Tue-KT3-04 **Biophysical properties of the model tear film lipid layer** Xiaojie Xu (xiaojie@hawaii.edu), Yi Zuo (Department of Mechanical Engineering, University of Hawaii at Manoa)
15:20 - 16:40	**Session: Plasmonics** Organizer/s: Matthew Sheldon, Stephan Link Chair/s: Matthew Sheldon
15:20	Tue-MT3-01 **Plasmonic Metal Oxide Nanocrystals** Delia Milliron (milliron@che.utexas.edu) (McKetta Department of Chemical Engineering, The University of Texas at Austin)
15:45	Tue-MT3-02 **Plasmonic Substrates for Modified Reaction Chemistry via Vibrational Strong Coupling** Zachary Brawley (ztbrawle@tamu.edu), Matthew Sheldon (Department of Materials Science and Engineering, Texas A&M University)

16:00	Tue-MT3-03 **Acousto-Plasmonic Coupling: The Raman Energy Density (RED)** Nicolas Large (Nicolas.Large@utsa.edu) (Department of Physics and Astronomy, The University of Texas at San Antonio)
16:25	Tue-MT3-04 **Plasmon-Coupled Gold Nanoparticles in Stretched Shape-Memory Polymers for Mechanical/Thermal Sensing** Prachi R. Yadav, Mehedi H. Rizvi (mrizvi@ncsu.edu), Björn Kuttich, Sumeet R. Mishra, Brian S. Chapman, Brian B. Lynch, Tobias Kraus, Amy L. Oldenburg, Joseph B. Tracy (Department of Materials Science and Engineering, North Carolina State University, Raleigh, North Carolina 27695, United States)
15:20 - 16:40	**Session: Interfacing Biology with Materials** Organizer/s: Ariel Furst, Yi Zhang Chair/s: Ariel Furst, Yi Zhang
15:20	Tue-NT3-01 **Oil-infused Rough Elastomers as Water and Ion Barriers for Implantable Flexible Bioelectronics** Yi Zhang (yi.5.zhang@uconn.edu), He Sun, Huijie Li, Zhengyan Weng (Department of Biomedical Engineering, Institute of Materials Science, University of Connecticut, Storrs, CT 06269, USA)
15:40	Tue-NT3-02 **Biocompatible cellular coatings to improve the oxygen tolerance of anaerobes** Gang Fan (danielgangfan@gmail.com), Ariel Furst (Massachusetts Institute of Technology)
16:00	Tue-NT3-03 **Flexible and Robust Polymer Gel-Sheet with Ideal Properties for Hemostasis** Hema Choudhary (hema994@terpmail.umd.edu), Matthew B. Dowling, Srinivasa R. Raghavan (Chemical and Biomolecular Engineering, University of Maryland College Park)
16:20	Tue-NT3-04 **Cuprous oxide/polyurethane surface coating that inactivates the SARS-CoV-2 virus** Saeed Behzadinasab (SaeedB@vt.edu), Alex Chin, Mohsen Hosseini, Leo Poon, William Ducker (Chemical Engineering, Virginia Tech)
15:20 - 16:40	**Session: Chemical Interactions Between Colloids and at Interfaces** Organizer/s: Robert Macfarlane, Matthew Jones Chair/s: Matthew Jones
15:20	Tue-OT3-01 **The Nanoscale Caterpillar : or how to achieve precise motion and assembly with random sticky feet** Sophie Marbach (sophie@marbach.fr), Fan Cui, Jeana Zheng, David Pine, Miranda Holmes-Cerfon

	(Courant Institute for mathematical sciences, New York University)
15:40	Tue-OT3-02 **Construction of diamond lattice and chiral assembly using gold tetrahedral nanoparticles** SHAN ZHOU (SHANZHOU@ILLINOIS.EDU), JIAHUI LI, AHYOUNG KIM, LEHAN YAO, QIAN CHEN (Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States | Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States)
16:00	Tue-OT3-03 **Separation of gold single-crystalline and penta-twinned seeds through difference exaggeration overgrowth and purification** Zhihua Cheng (zc35@rice.edu), Matthew Jones (Department of Chemistry, Rice University, MS 6000, Main Street, Houston, TX, 77005, USA)
16:20	Tue-OT3-04 **Assembly of Nanoparticle-Polyelectrolyte Membranes at Water-water interfaces** Wilfredo Mendez (wmendez@seas.upenn.edu), Daeyeon Lee, Kathleen Stebe (University of Pennsylvania)
15:20 - 16:40	**Session: Nanomaterials & Advanced Manufacturing** Organizer/s: Amy Peterson, Esteban Urena-Benavides Chair/s: Esteban Urena-Benavides
15:20	Tue-PT3-01 **Fabrication of microstructured electrodes via electroless metal deposition onto polydopamine-coated polystyrene substrates and thermal shrinking** Eduardo González-Martínez (gonzae3@mcmaster.ca), Sokunthearath Saem, Nadine Beganovic, Jose Moran-Mirabal (Department of Chemistry and Chemical Biology, McMaster University, Hamilton, Canada)
15:40	Tue-PT3-02 **Ultra-high throughput on-chip synthesis of microgels with tunable mechanical properties** Jingyu Wu (jingyuwu@seas.upenn.edu), David Issadore, Daeyeon Lee (University of Pennsylvania, Department of Chemical and Biomolecular Engineering, Philadelphia, PA 19104)
16:00	Tue-PT3-03 **Complexity and Dynamics in Nanoporous Materials: How to Cut, Insert, Edit, and Animate Their Modules (LaMer Keynote Lecture)** Liang Feng (liang.feng@northwestern.edu), Hong-Cai Zhou, Fraser Stoddart (Department of Chemistry Northwestern University | Department of Chemistry Texas A&M University)
17:00 - 19:00	**Session: Poster Session 1**

	Organizer/s: Davita Watkins, Lorena Tribe Chair/s: Davita Watkins, Lorena Tribe The session is intended for Q&A of poster presenters. The session is divided into 40 minute blocks. Within each time block, poster presenters from Posters RT-1 to RT-10; RT-11 to RT-20; and RT-21 to RT-30, respectively will participate in a Q & A session.
	Tue-RT-01 **Data Analysis for Process Control of Highly Monodispersed sub-10 nm ZrO2 Nanocrystals** Amy Stabell, Sheri Johnson, Ulf Nobbmann, Ana Morfesis (ana.morfesis@malvern.com) (Malvern Panalytical 117 Flanders Rd Westborough, MA 01581)
	Tue-RT-02 **Improvement of montmorillonite surface properties for pollutants adsorption** Facundo Barraqué (facundobarraque@cetmic.unlp.edu.ar), Mariela Fernández, Rosa Torres Sánchez, Roberto Mercader, Luciana Montes (CETMIC, CICPBA, UNLP, CONICET CCT-La Plata, Camino Centenario y 506, B1897ZCA, M. B. Gonnet, Argentina)
	Tue-RT-03 **BiO/CNT heterostructure with enhanced performance towards electrocatalytic nitrogen reduction reaction** Chaeeun Lim (chaeeunlim@postech.ac.kr), Kijung Yong, Yongjae Jeung (POSTECH(Pohang University of Science and Technology))
	Tue-RT-04 **Phosphorus Removal from Recirculating Aquaculture System Water** Eliza Costigan (eliza.costigan@maine.edu), Jean MacRae (Department of Civil & Environmental Engineering, University of Maine, Orono, ME 04473)
	Tue-RT-05 **Exploring the relationship between temperature activated hydrogen-deuterium exchange and protein stability with SANS** Roisin Donnelly (roisind@udel.edu), Yun Liu, Norman Wagner (Department of Biomedical Engineering University of Delaware | Department of Chemical and Biomolecular Engineering University of Delaware | NIST Center for Neutron Research)
	Tue-RT-06 **Ultra-thin phthalocyanine layer deposition on TiO_2 nanoparticles to simultaneously enhance charge separation and light absorption in photocatalysts** Hyun Sik Moon (hs2moon@postech.ac.kr), Kijung Yong (Surface Chemistry Laboratory of Electronic Materials, Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Pohang, 790-784, Republic of Korea)
	Tue-RT-07 **Biomimetic Electrocatalysts of metal-doped NiP for Efficient Water Splitting** DOKYOUNG KIM (kdk94@postech.ac.kr), KIJUNG YONG

(Department of Chemical Engineering, Pohang University of Science and Technology, cheongam-ro 77, Nam-gu, Pohang, Kyungbuk, Korea)

Tue-RT-08

Enhanced Visible Light Photocatalytic Activity of g-C_3N_4 by Using Heterojunction and Electron Mediator

Selda Odabasi Lee (selda@postech.ac.kr), Kijung Yong

(Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, 790-784, Korea)

Tue-RT-09

Topological Defect Dynamics in Curved Colloidal Crystals

Alexander Yeh (ayeh5@jh.edu), Michael A. Bevan

(Department of Chemical and Biomolecular Engineering Johns Hopkins University)

Tue-RT-10

Thermochromic Fibers Via Electrospinning and In Situ Phase Separation

James Wimberly (wimberlyja@mymail.vcu.edu), Paola D'Angelo, Christina Tang

(Chemical and Life Science Engineering, Virginia Commonwealth University, Richmond, VA 23284 USA)

Tue-RT-11

Solution-based electroless deposition of gold electrodes on cotton fabrics for wearable heaters and supercapacitors

Sung Min Lee (vision_2080@naver.com), In Hyeok Oh, Hong-Sik Eom, Suk Tai Chang

(Chung-Ang university)

Tue-RT-12

Mo doping on Ni2P nanowire promote hydrogen evolution reaction in alkaline condition.

Hyogyun Roh (rohhg007@postech.ac.kr), Kijung Yong

(POSTECH)

Tue-RT-13

Highly transparent electrodes based on the web-like networked AgNW film by controlling dewetting phenomena

Jin Kim, In Hyeok Oh (ink409@naver.com), Sung Min Lee, Yeon Woo Kim, Suk Tai Chang

(Chung-Ang University)

Tue-RT-14

Water droplet-based triboelectric nanogenerator with controllable nanowire structure

soyeon yun (syyun98@postech.ac.kr)

(POSTECH)

Tue-RT-15

pH-stimuli viscoelastic gel based on betaine-based complexes as viscosifier for hydraulic fracturing fluid

Shuhao Liu (liushuhao1993@tamu.edu), Yu Ting Lin, Bhargavi Bhat, Mustafa Akbulut

(Chemical Engineering, Texas A&M University)

Tue-RT-16
Adsorption of Phenols on Surfactant-Modified Ion Exchange Resins
Nathanael Hovda, Mark Anklam (manklam@calbaptist.edu)
(California Baptist University, Department of Chemical Engineering & Bioengineering)

Tue-RT-17
Emulsion systems for encapsulation of iron for food fortification
Shima Saffarionpour (s.saffarionpour@utoronto.ca), Levente L. Diosady
(Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, Ontario, Canada)

Tue-RT-18
Extensional Rheology of Colloid-Polymer Mixtures with Depletion Attractions
Diego D. Soetrisno (ddsoetrisno@uh.edu), Mariah J. Gallegos, Nayoung Park, Jacinta C. Conrad
(William A. Brookshire Department of Chemical and Biomolecular Engineering, University of Houston, Houston, TX)

Tue-RT-19
The interesting phenomena of the "Coffee Stain Effect"
Prerona Gogoi (preronagogoi@iitg.ac.in)
(Department of Chemical Engineering, Indian Institute of Technology Guwahati, Guwahati-781039, India.)

Tue-RT-20
Nanoparticle dynamics in semidilute polymer solutions: rings versus linear chains
Shivraj Bhagwatrao Kotkar (skotkar@uh.edu), Renjie Chen, Ryan Poling-Skutvik, Michael Howard, Arash Nikoubashman, Jacinta Conrad, Jeremy Palmer
(William A. Brookshire Department of Chemical and Biomolecular Engineering, University of Houston, Houston, TX 77204)

Tue-RT-21
***In vivo* pharmacokinetics of microbubbles: A direct blood characterization study**
Jose Navarro (Jose.navarro@colorado.edu), Kang-Ho Song, Mark Borden
(Mechanical Engineering Department, University of Colorado, Boulder, CO 80309, USA)

Tue-RT-22
Surface characterization of outer membrane vesicles, naturally-produced colloids, from bacterial biofilms
Matthew Potter (m.k.p@aggiemail.usu.edu), Anne Anderson, David Britt
(Utah State University, Department of Biological Engineering)

Tue-RT-23
The Kitchen Pot Thickens, Drop by Drop
Karthika Suresh (ksuresh@uic.edu), Lena Hassan, Carina Martinez, Michael Boehm, Stefan Baier, Vivek Sharma
(University of Illinois, Chicago)

	Tue-RT-24 **Structure and Phase Behavior of Polyelectrolyte–Nanoparticle Complexes** Advait Holkar (advaitholkar@g.ucla.edu), Samanvaya Srivastava (University of California Los Angeles)
	Tue-RT-25 **Exploring The Nanoarchitecture and Rheological Properties of Zwitterionic Surfactant Based pH-tunable Dynamic Binary Complex** Bhargavi Bhat (bbhat2@tamu.edu), Shuhao Liu, Yu Ting Lin, Mustafa Akbulut (Department of Chemical Engineering, Texas A&M University)
	Tue-RT-26 **Platonic Micelles: Exploration of Micelle Stability at Different Discrete Aggregation Numbers** Yenny Cardona Quintero, Ramanathan Nagarajan (ramanathan.nagarajan.civ@mail.mil) (DEVCOM Soldier Center, Natick, MA)
	Tue-RT-27 **Phase Morphology of Conjugated Polymer Blends with an Elastomeric Tri-block Matrix.** Sage Scheiwiller (sschei@uw.edu), Lilo Pozzo (University of Washington)
	Tue-RT-28 **Phase Behavior of Colloids with Polymer-Mediated Attractions** Mariah Gallegos (mgalle1094@gmail.com), Diego Soetrisno, Nayoung Park, Jacinta Conrad (University of Houston, Department of Chemical and Biomolecular Engineering)
	Tue-RT-29 **Sodium Alginate Alters Protein Folding Stability and Structure** Roger Chang (rogerc2@illinois.edu) (Department of Chemical Engineering at University of Illinois at Urbana-Champaign)
	Tue-RT-30 **Molecular Simulation of Poy(methacrylic acid) and Poly(acrylic acid) Adsorbed at Oil-Water Interface : Effect of Tacticity and Interface Concentration of Polymer** Raviteja Kurapati (rtkiitm@gmail.com), Upendra Natarajan (Dept. Chemical Engineering, Indian Institute of Technology Madras, Chennai, India - 600036)
Wed, 16	
09:00 - 11:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Samanvaya Srivastava
09:00	Wed-AW1-01 **Acoustophoretic assembly of millimeter-scale Janus fibers** Meghana Akella, Soheila Shabaniverki, Jaime Juarez (jjuarez@iastate.edu)

	(Department of Mechanical Engineering, Iowa State University)
09:20	Wed-AW1-02 **Self-limiting Assembly of Curved Colloidal Particles** Nabila Tanjeem (nabila.tanjeem@colorado.edu), Doug Hall, Greg Grason, Ryan Hayward (University of Colorado Boulder)
09:40	Wed-AW1-03 **Controlling self-assembly in droplet laden colloidal systems using vapor mediation** Omkar Hegde (omkarhegde@iisc.ac.in), Saptarshi Basu (Department of Mechanical Engineering, Indian Institute of Science, Bangalore)
10:00	Wed-AW1-04 **Thermo-reversible solvent segregation driven gel (SeedGel) with well-controlled structures** Yuyin Xi (xiyuyin@uw.edu), Juscelino Leão, Qiang Ye, Ronald Lankone, Li-Piin Sung, Yun Liu (Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD, 20899, USA | Department of Chemical & Biomolecular Engineering, University of Delaware, Newark, DE, 19716, USA)
10:20	Wed-AW1-05 **Self-assembled nanoparticle superlattices with size-dependent reconfiguration** Chang Qian (changq2@illinois.edu), Binbin Luo, Ethan Stanifer, Xiaoming Mao, Qian Chen (University of Illinois at Urbana-Champaign)
10:40	Wed-AW1-06 **Phase separation of colloidal gels can promote and hinder liquid phase separation** Mickaela Samuel, Poornima Padmanabhan (poornima.padmanabhan@rit.edu) (Department of Chemical Engineering, Rochester Institute of Technology)
09:00 - 11:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Karthik Nayani
09:00	Wed-BW1-01 **In sheared highly polydisperse granular systems, large droplets affect smaller droplets significantly** Yonglun Jiang (yonglun.jiang@emory.edu), Eric Weeks (Emory University)
09:20	Wed-BW1-02 **Mixing dynamics of bilgewater emulsions in Taylor Couette flows** Vishal Panwar (panwa015@umn.edu), Cari Dutcher (Department of Mechanical Engineering, University of Minnesota – Twin Cities)
09:40	Wed-BW1-03 **Remote Control of Aqueous Interfaces and Foam Stability with Photo-Switchable Polyelectrolyte-Surfactant Mixtures**

	Bjoern Braunschweig (braunschweig@uni-muenster.de), Marco Schnurbus (University Muenster Institute of Physical Chemistry)
10:00	Wed-BW1-04 **Prediction and measurement of leaky dielectric drop interactions** Jeremy Kach (jkach@andrew.cmu.edu), Lynn Walker, Aditya Khair (Department of Chemical Engineering, Carnegie Mellon University)
10:20	Wed-BW1-05 **Influence of polarity change and photophysical effects on photosurfactant-driven wetting** Serena Seshadri (serenaseshadri@ucsb.edu), Sophia Bailey, Lei Zhao, Julia Fisher, Miranda Sroda, Michelle Chiu, Friedrich Stricker, Megan Valentine, Javier Read de Alaniz, Matthew Helgeson (Department of Chemistry, University of California Santa Barbara, Santa Barbara, CA 93106)
10:40	Wed-BW1-06 **Endoskeletal Drops for Photoacoustic Imaging** Anish Silwal (anish.silwal@colorado.edu), Marco Inzunza-Ibarra, Gazendra Shakya, Mark Borden (Department of Mechanical Engineering, University of Colorado, Boulder, CO 80309, USA)
09:00 - 11:00	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Jeffrey Richards
09:00	Wed-DW1-01 **Polyelectrolytes Dynamics and Rheology, in a Pinch** Leidy Jimenez, Jelena Dinic, Carina Martinez, Vivek Sharma (viveks@uic.edu) (Chemical Engineering, University of Illinois at Chicago, Chicago, IL 60608, United States)
09:20	Wed-DW1-02 **Differential dynamic microscopy enables high-throughput phase diagram mapping of polyelectrolyte complex coacervates** Yimin Luo (yiminluo@ucsb.edu), Chelsea Edwards, Mengyang Gu, Yue He, Megan Valentine, Matthew Helgeson (Department of Chemical Engineering, University of California, Santa Barbara | Department of Mechanical Engineering, University of California, Santa Barbara)
09:40	Wed-DW1-03 **Nanoparticle Dynamics in Unentangled Polyelectrolyte Solutions** Ali H. Slim (ahslim@uh.edu), Ryan Poling-Skutvik, Jacinta C. Conrad (University of Houston)
10:00	Wed-DW1-04 **Spinnability and Centrifugal Force Spinning of Fibers of Poly(ethylene Oxide) Solutions**

	Jorgo Merchiers (cmart56@uic.edu), Carina Martinez, Cheryl Slykas, Vivek Sharma, Naveen Reddy (Hasselt University, Institute for Materials Research (IMO-IMOMEC), B-3590 Diepenbeek, Belgium)
10:20	Wed-DW1-05 **Designing elastoplastic 3D printable edible materials using jammed emulsions stabilized with pea proteins** Lakshminarasimhan Sridharan (lakshminarasimh.sridharan@wur.nl), Marcel BJ Meinders, Johannes H Bitter, Leonard MC Sagis, Constantinos V Nikiforidis (Bio-based Chemistry and Technology, Wageningen University, Wageningen, The Netherlands | TiFN, Wageningen, The Netherlands)
10:40	Wed-DW1-06 **Polysaccharides As Food Thickeners** Karthika Suresh (ksuresh@uic.edu), Leidy N. Jimenez, Carina Martinez, Lena Hassan, Stefan Baier, Vivek Sharma (University of Illinois, Chicago)
09:00 - 11:00	**Session: Applications of Scanning Probe Methods** Organizer/s: Dalia Yablon, James Batteas Chair/s: Dalia Yablon
09:00	Wed-FW1-01 **Using Atomic Force Microscopy to Quantitatively Study Tribochemical Reactions on 2D Materials (Keynote Lecture)** Jonathan Felts (jonathan.felts@tamu.edu) (Texas A&M Department of Mechanical Engineering)
09:40	Wed-FW1-02 **Dynamic measurement of ice growth by atomic force microscopy in aqueous solutions in the presence of ice-binding proteins** Sidney Cohen (sidney.cohen@weizmann.ac.il), Michael Chasnitsky, Yinon Rudich, Ido Brasklavsky (Weizmann Institute of Science)
10:00	Wed-FW1-03 **Probing the mechanical and structural properties of inverse bicontinuous cubic phase membranes by Atomic Force Microscopy based Force Spectroscopy** Andrea Ridolfi (andrea.ridolfi@ismn.cnr.it), Ben Humphreys, Lucrezia Caselli, Costanza Montis, Debora Berti, Tommy Nylander, Marco Brucale, Francesco Valle (Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase, Firenze, Italy | Consiglio Nazionale delle Ricerche, Istituto per lo Studio dei Materiali Nanostrutturati, Bologna, Italy | Dipartimento di Chimica “Ugo Schiff”, Universita? degli Studi di Firenze, Firenze, Italy)
10:20	Wed-FW1-04 **Visualizing bimodal rotational dynamics of protein nanorods at solid-liquid interfaces by high-speed AFM**

	Shuai Zhang (zhangs71@uw.edu), Robbie Sadre, Ben Legg, Harley Pyles, David Baker, Oliver Ruebel, Jim De Yoreo (Materials Science and Engineering, University of Washington, Seattle, WA, USA | Physical Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA)
10:40	Wed-FW1-05 **Using Deep Learning for Classification and Correlation of Impact Copolymer AFM Images** Ishita Chakraborty (i.chak1983@gmail.com) (Stress Engineering Services)
09:00 - 11:00	**Session: Surface and Interfacial Forces** Organizer/s: Mustafa Akbulut, Younjin Min, Ray Dagastine Chair/s: Mustafa Akbulut, Younjin Min
09:00	Wed-HW1-01 **Force measurements of the interfacial properties of grafted zwitterionic polymer** Syeda Tajin Ahmed (tajinahmed0802@gmail.com), Deborah Leckband (Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign)
09:20	Wed-HW1-02 **Solvent Selection and Dilution Process to Distinguish Particle Size and Surface Treatment** Jyo Lyn Hor (jhor@dow.com), Margaret Hwang, David Adrian (Process R&D, Dow Performance Silicones)
09:40	Wed-HW1-03 **Investigation of capillary interactions between 2D particles at fluid-fluid interfaces** David Goggin, Amy Chacon, Joseph Samaniuk (samaniuk@mines.edu) (Colorado School of Mines, Chemical and Biological Engineering)
10:00	Wed-HW1-04 **A colourful way to track the hindered diffusion of anisotropic nanoparticles** Christopher Bolton (boltonc@unimelb.edu.au), Raymond Dagastine (Department of Chemical Engineering, University of Melbourne)
09:00 - 11:00	**Session: Colloids and Interfaces in Environmental Applications** Organizer/s: Xing Xie, Onur Apul, Chad Vecitis, Navid Saleh Chair/s: Chad Vecitis
09:00	Wed-JW1-01 **Characterizing and engineering nanoscale flows in membranes (Keynote Lecture)** Manish Kumar (manish.kumar@utexas.edu) (Department of Civil, Architectural and Environmental Engineering, University of Texas at Austin)
09:40	Wed-JW1-02 **Nanoscale shape-morphing in polyamide membranes enabled by 3D nanoscale imaging-analysis platform**

	Hyosung An (hyosung@illinois.edu), John Smith, Bingqiang Ji, Shan Zhou, Stephen Cotty, Lehan Yao, Falon Kalutantirige, Wenxiang Chen, Xiao Su, Jie Feng, Qian Chen (Department of Materials Science & Engineering, University of Illinois, Urbana, Illinois, USA | Materials Research Laboratory, University of Illinois, Urbana, Illinois, USA)
10:00	Wed-JW1-03 **Electrochemically-active carbon nanotube coatings for biofouling mitigation: cleaning kinetics and energy consumption for cathodic and anodic regimes** Douglas Rice, Kimya Rajwade (krajwade@asu.edu), Kuichang Zuo, Rishabh Bansal, Qilin Li, Sergi Garcia-Segura, Francois Perreault (School of Sustainable Engineering and Built Environment, Arizona State University | Nanosystems Engineering Research Center for Nanotechnology-Enabled Water Treatment, United States)
10:20	Wed-JW1-04 **Mechanisms of silica scaling on organic foulant-coated surfaces** Yarong Qi (qiyarong@gwmail.gwu.edu), Xitong Liu (The George Washington University)
09:00 - 11:00	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Sarah Perry
09:00	Wed-KW1-01 **Establishing the Potential role of Benzyl Isothiocyanate as an anticancer through novel green nanoformulations** Khushwinder Kaur (khushimakkar0306@gmail.com) (Assistant Prof. Department of Chemistry Panj University Chandigarh India)
09:20	Wed-KW1-02 **Morphogenesis of silica microstructures in diatoms** Maria Feofilova (maria.feofilova@mat.ethz.ch), Eric Dufresne (Department of Materials, ETH Zürich)
09:40	Wed-KW1-03 **New Generation of Drug Delivery System based on Stimuli-Responsive Capsules** Julie Oniszczuk, Malak Alaa Eddine, Ones Mansour, Laurent Michely, Sabrina Belbekhouche (sabrina.belbekhouche@u-pec.fr) (Université Paris Est Creteil, CNRS, Institut Chimie et Matériaux Paris Est, UMR 7182, 2 Rue Henri Dunant, 94320 Thiais, France)
10:00	Wed-KW1-04 **Lubrication performance of sustainable microgel particles for fat replacement applications** Ben Kew (ll14bk@leeds.ac.uk), Melvin Holmes, Evan Liamas, Anwesha Sarkar (Food Colloids Group, School of Food Science and Nutrition, University of Leeds)
10:20	Wed-KW1-05 **Drainage of protein foams and foam films**

	Lena Hassan (lena.hassan79@gmail.com), Chenxian Xu, Vivek Sharma (Department of Chemical Engineering, University of Illinois at Chicago, Chicago, IL. 60608.)
10:40	Wed-KW1-06 **Phase Instability in Pharmaceutical Surfactant/Preservative Formulations** Peter H. Gilbert (peter.gilbert@queensu.ca), Ken K. Qian, Rachel Ford, Norman J. Wagner, Yun Liu (NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD 20899 | Department of Chemical and Biomolecular Engineering Department, Center for Neutron Science, University of Delaware, Newark, DE 19716)
09:00 - 11:00	**Session: Surface Science and Catalysis** Organizer/s: Danmeng Shuai, Paul DeSario, Chris Karwacki Chair/s: Danmeng Shuai
09:00	Wed-LW1-01 **Enhanced colloidal stability and catalytic activity of gold nanoparticles in porous materials** Yingzhen Ma (yma16@lsu.edu), Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University, Baton Rouge, Louisiana 70803, USA)
09:20	Wed-LW1-02 **The Effect of CeO_2 Aerogel Supports on Activity, Speciation, and Stability of Nickel for CO Oxidation** Travis Novak (travis.novak.ctr@nrl.navy.mil), Paul DeSario, Christopher Chervin, Debra Rolison (US Naval Research Laboratory, National Research Council Postdoctoral Associate, Washington DC, USA)
09:40	Wed-LW1-03 **Uncovering Mechanisms of Tunable Alcohol Oxidation over Cu/TiO_2 Aerogel Materials at the Gas-Surface Interface** Andrew Maynes (amaynes@vt.edu), Mikaela Boyanich, John Morris (Virginia Tech Department of Chemistry)
10:00	Wed-LW1-04 **Understanding the Role of SnO_2 Surface Structure on Alcohol Oxidations using Ambient-Pressure X-ray Photoelectron Spectroscopy** Gregory Herman (greg.herman@oregonstate.edu), Radwan Elzein, Jessica Jenkins, Trey Diulus, Rafik Addou (School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR, 97331)
10:20	Wed-LW1-05 **Selective Deposition of Nanoarchitectures using Surface Functionalization for Designing Next-Generation Catalyst Materials** Kathryn Perrine (kaperrin@mtu.edu)

	(Michigan Technological University)
10:40	Wed-LW1-06 **Controlling Metal Deposition on Bimetallic Plasmonic-Catalytic Nanostructures Using Visible Light** Michelle Personick (mpersonick@wesleyan.edu) (Wesleyan University, Department of Chemistry)
09:00 - 11:00	**Session: Interfacing Biology with Materials** Organizer/s: Ariel Furst, Yi Zhang Chair/s: Ariel Furst, Yi Zhang
09:00	Wed-NW1-01 **DNA-programmed Assembly of Nanoparticle Superlattices at Interfaces (Keynote Lecture)** Robert Macfarlane (rmacfarl@mit.edu) (Department of Materials Science, Massachusetts Institute of Technology)
09:40	Wed-NW1-02 **Information storage via immobilization of encoded DNA on ultra-high surface-area magnetic soft dendritic colloids** Cyrus Cao (ycao27@ncsu.edu), Kevin Lin, Austin Williams, Albert Keung, Orlin Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh)
10:00	Wed-NW1-03 **Sum frequency generation (SFG) microscopy analysis of cellulose microfibrils in Physcomitrium patens and the effect of Cellulose Synthase (CESA) mutation** Jongcheol Lee (jul1371@psu.edu), Alison Roberts, Arielle Chave (Department of Chemical Engineering, and Material Research Institute, Pennsylvania State University, University Park, Pennsylvania 16802, United States)
10:20	Wed-NW1-04 **Sum frequency generation (SFG) microscopy analysis of cellulose microfibrils in Physcomitrium patens and the effect of Cellulose Synthase (CESA) mutation** Jongcheol Lee (jul1371@psu.edu), Arielle Chave, Alison Roberts, Seong Kim (Department of Chemical Engineering, and Material Research Institute, Pennsylvania State University, University Park, Pennsylvania 16802, United States)
10:40	Wed-NW1-05 **Straining Membrane Vesicles and Cells in Aqueous Nematic Liquid Crystals** Purvil Jani (prj26@cornell.edu), Karthik Nayani, Marshall Colville, Matthew Paszek, Nicholas Abbott (Robert Frederick Smith School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, USA 14853)
09:00 - 11:00	**Session: Chemical Interactions Between Colloids and at Interfaces** Organizer/s: Robert Macfarlane, Matthew Jones Chair/s: Robert Macfarlane

09:00	Wed-OW1-01 **Atomically Precise Chemical, Physical, Electronic, and Spin Contacts (Keynote Lecture)** Paul S. Weiss (psw@cnsi.ucla.edu) (Departments of Chemistry & Biochemistry, Bioengineering, and Materials Science & Engineering and California NanoSystems Institute, UCLA, Los Angeles, CA 90095, USA)
09:40	Wed-OW1-02 **Investigation of Ion Pairing Between Alkali Metal Cations and Anionic Surfactant Monolayers** Kenneth Judd (kdj6@psu.edu), Paul Cremer (Department of Chemistry, The Pennsylvania State University, University Park, PA 16802)
10:00	Wed-OW1-03 **Quantification of the Spatial Binding Preferences for Nanoparticle Surface Ligands through a Molecule Labeling Strategy** Zhi Yang (zy28@rice.edu), Spoorthi Kamepalli, Sarah Rehn, Muhua Sun, Matthew Jones (Department of Chemistry, Rice University)
10:20	Wed-OW1-04 **Microgels at the air-water interface: compression and shear response probed by a novel quadrotrough** Benjamin Thompson (bthompsn@udel.edu), Norman Wagner (Department of Chemical and Biomolecular Engineering, University of Delaware)
10:40	Wed-OW1-05 **Unraveling switch roles of lead ions in scheelite and fluorite flotation with AFM force mapping and flrst-principles calculations** Jianyong He (hjy2016@csu.edu.cn), Wei Sun, Wenjihao Hu, Zhiyong Gao, Ruihua Fan, Hongbo Zeng, Zhiyong Gao (School of Minerals Processing and Bioengineering and Key Laboratory of Hunan Province for Clean and Efficient Utilization of Strategic Calcium-containing Mineral Resources, Central South University, Changsha, Hunan 410083, China)
09:00 - 11:00	**Session: Nanomaterials & Advanced Manufacturing** Organizer/s: Amy Peterson, Esteban Urena-Benavides Chair/s: Amy Peterson
09:00	Wed-PW1-01 **Manufacturing Functional Materials from Polydisperse Anisotropic Nanomaterial Dispersions (Keynote Lecture)** Virginia Davis (davisva@auburn.edu) (Department of Chemical Engineering Auburn University)
09:40	Wed-PW1-02 **Scalable synthesis of soft nanofiber forests using liquid crystals and emergent electro-optical properties** Sangchul Roh (sr974@cornell.edu), John Kim, Joerg Lahann, Nicholas Abbott (Smith School of Chemical and Biomolecular Engineering, Cornell University)

10:00	Wed-PW1-03 **Highly Conductive Silicone Elastomers via Water-Induced Swelling and In Situ Synthesis of Silver Nanoparticles** Hong Zhao (hzhao2@vcu.edu), Yuanhang Yang, Shun Duan (Virginia Commonwealth University, USA)
10:20	Wed-PW1-04 **Chemical and Engineering Approaches for Soft Material Additive Manufacturing (Keynote Lecture)** AJ Boydston (aboydston@wisc.edu) (Department of Chemistry University of Wisconsin Madison, WI 53706)
09:00 - 11:00	**Session: Fundamental/General Aspects of Colloids and Interfaces** Organizer/s: Ning Wu, Vivek Narsimhan Chair/s: Ning Wu
09:00	Wed-QW1-01 **Structural Investigations of $LiCoO_2$ (001) by UHV- Scanning Tunneling Microscopy and Low Energy Electron Diffraction** Yuchen Niu (niu@umd.edu), Janice Reutt-Robey (Dept. of Chemistry & Biochemistry University of Maryland, College Park)
09:20	Wed-QW1-02 **Polarizability of Metallodielectric Janus Particles in Electrolyte Solutions.** Behrouz Behdani, Kun Wang, Carlos Silvera Batista (silvera.batista@vanderbilt.edu) (Chemical and Biomolecular Engineering, Vanderbilt University)
09:40	Wed-QW1-03 **Capillary force on an 'inert' colloid: a physical analogy to dielectrophoresis** Joseph Barakat (josephbarakat@ucsb.edu), Todd Squires (University of California, Santa Barbara)
10:00	Wed-QW1-04 **Liquid-Phase TEM Imaging of Oriented Attachment in Nanoparticle Superlattices Assisted by Machine Learning** Chang Liu (changl5@illinois.edu), Lehan Yao, Qian Chen (University of Illinois at Urbana-Champaign)
10:20	Wed-QW1-05 **Synthesis of hybrid inorganic-organic microparticles with controlled composition** Shreyas Joshi (ssjoshi@umass.edu), John Klier, Peter Beltramo (University of Massachusetts Amherst)
10:40	Wed-QW1-06 **A smectic liquid crystal Langmuir film at the air/water interface: boundaries, thermodynamics and dynamics** Huda Alwusaydi (halwusa1@kent.edu), Elizabeth Mann, Jay Mann (Kent State University, Department of Physics, Kent, OH, USA)
11:20 - 12:10	**Session: 2020 LaMer Award Lecture**

	Organizer/s: Ramanathan Nagarajan Chair/s: Matthew Helgeson
11:20	Introduction of 2020 LaMer Award Recipient by Matthew Helgeson, LaMer Committee Chair and 95th CSSS Co-Chair
11:25	Wed-SW1-01 **Redox-Active Electrochemical Interfaces for Molecularly-Selective Separations** Xiao Su (x2su@illinois.edu) (Chemical and Biomolecular Engineering, University of Illinois Urbana-Champaign)
12:40 - 13:30	**Session: 2021 LaMer Award Lecture** Organizer/s: Ramanathan Nagarajan Chair/s: Matthew Helgeson
12:40	Introduction of 2021 LaMer Award Recipient by Matthew Helgeson, LaMer Committee Chair and 95th CSSS Co-Chair
12:45	Wed-SW2-01 **Designing Nanoparticles for Self-Assembly of Novel Materials** Rose K. Cersonsky (rose.cersonsky@epfl.ch) (Macromolecular Science and Engineering, University of Michigan, Ann Arbor, Michigan | Laboratory of Computational Science and Modeling, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland.)
13:40 - 15:00	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Jaime Juarez
13:40	Wed-AW2-01 **Surface charge heterogeneity directed particle migration and assembly** Xiaoyu Tang (x.tang@northeastern.edu), Parth Shah, Todd Squires (Chemical Engineering, University of California, Santa Barbara)
14:00	Wed-AW2-02 **Probing interparticle interactions during formation of transient aggregates by chemical fuels** Thilini U. Dissanayake (tumesha@terpmail.umd.edu), Justin Hughes, Taylor Woehl (Department of Chemical and Biomolecular Engineering, University of Maryland, College Park)
14:20	Wed-AW2-03 **Inducing and Controlling Colloidal Stratification with a Binary Solvent Mixture** Binghan Liu, Gary Grest, Shengfeng Cheng (chengsf@vt.edu) (Virginia Tech)
14:40	Wed-AW2-04 **Tunable assemblies of gold nanoparticles in smectic liquid crystals confined at curved interfaces** Mackenzie O'Keefe, Jane Bernadette Denise M. Garcia, Daniel A. Beller, Mohamed Amine Gharbi (mohamed.gharbi@umb.edu)

	(Department of Physics, University of Massachusetts Boston)
13:40 - 15:00	**Session: Emulsions, Bubbles, Foams** Organizer/s: Daniel Miller, Karthik Nayani, Cari Dutcher Chair/s: Karthik Nayani
13:40	Wed-BW2-01 **Preparation of carbon dioxide emulsions and foams using cellulose nanocrystals at high temperature and pressure** Sanjiv Parajuli (sanjiv.parajuli@utsa.edu), Esteban Benavides (University of Texas at San Antonio)
14:00	Wed-BW2-02 **Production and stabilization of foams by fatty acid crystals in high alcohol content solvents** Yingzhen Ma (yma16@lsu.edu), Anne-Laure Fameau, Bhuvnesh Bharti (Cain Department of Chemical Engineering, Louisiana State University, Baton Rouge, Louisiana 70803, USA)
14:20	Wed-BW2-03 **Liquid crystal emulsions stabilized by nanoparticles** Oscar Piñeres-Quiñones, Kevin Zabala-Rodríguez, David Lynn, Claribel Acevedo-Vélez (claribel.acevedo@upr.edu) (Department of Chemical Engineering University of Puerto Rico-Mayaguez)
14:40	Wed-BW2-04 **Superparamagnetic iron oxide (Fe_3O_4) coated cellulose nanocrystals as a recyclable additive for the emulsification and demulsification of magnetically controlled castor oil/water emulsions** Mohammad Jahid Hasan (mj.hasan1991@gmail.com), Frankie Petrie, Ashley Johnson, Joshua Peltan, Meredith Gannon, Robert Busch, Serhiy Leontsev, Erick Vasquez, Esteban Urena-Benavides (Department of Biomedical Engineering and Chemical Engineering, The University of Texas at San Antonio, San Antonio, TX, 78249, USA)
13:40 - 15:00	**Session: Rheology & Complex Fluids** Organizer/s: Jeffrey Richards, Amanda Marciel Chair/s: Jeffrey Richards
13:40	Wed-DW2-01 **Spherically confined Brownian suspensions: influence of locally heterogenous structure on diffusion and rheology** Alp Sunol (asunol@stanford.edu), Roseanna Zia (Chemical Engineering, Stanford University)
14:00	Wed-DW2-02 **Diffusion of proteins throughout aqueous block polymer liquid crystals – the effect of polymer architecture, temperature, and concentration.** Connor Valentine (connorv@andrew.cmu.edu), Lynn Walker (Carnegie Mellon University)

14:20	Wed-DW2-03 **Structural Investigation of Salt-Induced Local Ordering in Amorphous Protein Dense Phases** Brian Paul (bpaul@udel.edu), Norman Wagner, Eric Furst, Abraham Lenhoff, Susana Teixeira (Department of Chemical & Biomolecular Engineering, University of Delaware)
14:40	Wed-DW2-04 **Rheology and Pinching Dynamics of Associative Polysaccharide Solutions** Carina Martinez (cmart56@uic.edu), Jelena Dinic, Xinyu Lu, Chao Wang, Reza Rock, Hao Sun, Vivek Sharma (University of Illinois at Chicago)
13:40 - 15:00	**Session: Applications of Scanning Probe Methods** Organizer/s: Dalia Yablon, James Batteas Chair/s: James Batteas
13:40	Wed-FW2-01 **Using high-speed, molecularly-resolved AFM and fast force mapping to investigate nucleation and solution structure at surfaces (Keynote Lecture)** James J. De Yoreo (james.deyoreo@pnnl.gov), Benjamin A. Legg, Elias Nakouzi, Andrew G. Stack, Sebastien Kerisit, Christopher J. Mundy, Gregory K. Schenter, Jaehun Chun, Kislon Voictchovsky (Physical Sciences Division, Pacific Northwest National Laboratory, Richland, WA | Materials Science and Engineering, University of Washington, Seattle, WA)
14:20	Wed-FW2-02 ***In Situ* Study of the Lubrication Mechanism of Phosphonium Phosphate Ionic Liquid in Nanoscale Single-Asperity Sliding Contacts** Filippo Mangolini (filippo.mangolini@austin.utexas.edu), Zixuan Li, Oscar Morales-Collazo, Jerzy T. Sadowski, Hugo Celio, Andrei Dolocan, Joan F. Brennecke (Texas Materials Institute, The University of Texas at Austin, Austin, Texas 78712, USA | Walker Department of Mechanical Engineering, The University of Texas at Austin, Austin, Texas 78712, USA)
14:40	Wed-FW2-03 **Manipulating colloids, measuring masses, and probing forces at the solid-liquid interface using atomic force microscopy** Hans Gunstheimer, Laura Gonzalez, Dominik Ziegler, Christina Newcomb (newcomb@nanosurf.com), Gabriel König, Patrick Frederix (Nanosurf)
13:40 - 15:00	**Session: Surface and Interfacial Forces** Organizer/s: Mustafa Akbulut, Younjin Min, Ray Dagastine Chair/s: Mustafa Akbulut, Younjin Min
13:40	Wed-HW2-01 **Surface Forces and Stratification in Micellar Foam Films & Soap Bubbles (Keynote Lecture)**

	Vivek Sharma (viveks@uic.edu) (Chemical Engineering, University of Illinois at Chicago)
14:20	Wed-HW2-02 **Drainage via Stratification in Micellar Foam Films of Aqueous Sodium Naphthenate Solutions** Chrystian Ochoa (cochoa6@uic.edu), Shang Gao, Samanvaya Srivastava, Vivek Sharma (Department of Chemical Engineering, University of Illinois at Chicago)
14:40	Wed-HW2-03 **The effect of headgroup charge on the stiffness of symmetric and asymmetric phospholipid bilayers** Paige Liu, Oscar Zabala-Ferrera, Peter Beltramo (pbeltramo@umass.edu) (University of Massachusetts Amherst)
13:40 - 15:00	**Session: Colloids and Interfaces in Environmental Applications** Organizer/s: Xing Xie, Onur Apul, Chad Vecitis, Navid Saleh Chair/s: Xing Xie
13:40	Wed-JW2-01 **Photoreactive Electrospun Filters for Controlling Airborne Transmission of SARS-CoV-2** Hongchen Shen (hongchenshen@gwmail.gwu.edu), Haihuan Wang, Zhe Zhou, Mengyang Zhang, Danmeng Shuai, Yun Shen (The George Washington University)
14:00	Wed-JW2-02 **Impact of NO/NO_2 Aging on the Capacity of Silver Mordenite for Iodine Adsorption** Alexander Wiechert (awiechert3@gatech.edu), Austin Ladshaw, Jisue Moon, Carter Abney, Yue Nan, Seungrag Choi, Jiuxu Liu, Lawrence Tavlarides, Costas Tsouris, Sotira Yiacoumi (School of Civil and Environmental Engineering, Georgia Institute of Technology)
14:20	Wed-JW2-03 **Aging mechanisms of silver-functionalized silica aerogel in NO_2-containing gas streams** Ziheng Shen (zshen83@gatech.edu), Alexander Wiechert, Seungrag Choi, Austin Ladshaw, Lawrence Tavlarides, Costas Tsouris, Sotira Yiacoumi (School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States)
14:40	Wed-JW2-04 **Pt catalyst on novel ceria-based support with fine CeO2 particles for efficient emission control** Wei Tan, Shaohua Xie, Fudong Liu (fudong.liu@ucf.edu), Fei Gao, Lin Dong, Ming Yang (Department of Civil, Environmental, and Construction Engineering, Catalysis Cluster for Renewable Energy and Chemical Transformations (REACT), NanoScience Technology Center (NSTC), University of Central Florida, Orlando, FL 32816, United States)

13:40 - 15:00	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Lydia Kisley
13:40	Wed-KW2-01 **From pointy fangs to polymer fibers: interfacial materials processing using a bloodworm multi-tasking polypeptide** William Wonderly, Tuan Nguyen, Daniel DeMartini, Eric Valois, Matthew Helgeson (helgeson@ucsb.edu), Herbert Waite (University of California, Santa Barbara)
14:00	Wed-KW2-02 **Design and Use of a Thermogelling Methylcellulose Nanoemulsion to Formulate Nanocrystalline Oral Dosage Forms** Liang-Hsun Chen (lhchen@mit.edu), Patrick Doyle (Department of Chemical Engineering, Massachusetts Institute of Technology)
14:20	Wed-KW2-03 **In Vivo Quantitative Imaging of Nanoparticles and Cells Using Magnetic Particle Imaging (Keynote Lecture)** Carlos M. Rinaldi-Ramos (carlos.rinaldi@ufl.edu) (Department of Chemical Engineering, University of Florida, Gainesville, FL | J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL 32611)
13:40 - 15:00	**Session: Surface Science and Catalysis** Organizer/s: Danmeng Shuai, Paul DeSario, Chris Karwacki Chair/s: Danmeng Shuai
13:40	Wed-LW2-01 **Design and Characterization of a Bioinspired Molybdenum Catalyst for Aqueous Perchlorate Reduction** Changxu Ren, Peng Yang, Eric Bi, Jinyu Gao, Mengqiang Zhu, Jinyong Liu (jinyongl@ucr.edu) (1Department of Chemical and Environmental Engineering, University of California, Riverside, CA 92521, United States)
14:00	Wed-LW2-02 **Bioinspired Catalytic Reduction of Aqueous Perchlorate by One Single-Metal Site with High Stability against Oxidative Deactivation** Changxu Ren (cren005@ucr.edu), Jinyong Liu (Department of Chemical and Environmental Engineering, University of California, Riverside, CA 92521, United States.)
14:20	Wed-LW2-03 **Evaluation of a Molybdenum Catalyst for Perchlorate Reduction for Engineering Application** Eric Bi (jinyongl@ucr.edu), Changxu Ren, Jinyong Liu

	(Department of Chemical and Environmental Engineering, University of California, Riverside, CA 92521, United States | Martin Luther King High School, Riverside, CA 92508, United States)
14:40	Wed-LW2-04 **Mapping cooperative ligand adsorption at the sub-particle level** Rong (Rocky) Ye (ry279@cornell.edu), Ming Zhao, Xianwen Mao, Zhaohong Wang, Diego Alejandro Garzon, Heting Pu, Peng Chen (Department of Chemistry and Chemical Biology, Cornell University)
13:40 - 15:00	**Session: Interfacing Biology with Materials** Organizer/s: Ariel Furst, Yi Zhang Chair/s: Ariel Furst, Yi Zhang
13:40	Wed-NW2-01 **Understanding the Transition from Non-living to Living: Characterization of Protocell Systems Based on Aqueous Phase Coexistence (LaMer Keynote Lecture)** Fatma Pir Cakmak (fatmapir@mit.edu) (MIT, Physics)
14:20	Wed-NW2-02 **Manipulating Lipid Membrane Rigidity at the Nanoscale: Lessons for Drug Delivery** Judith De Mel (ldemel@olemiss.edu), Sudipta Gupta, Gerald Schneider (Department of Biomedical Engineering, The University of Mississippi, Oxford, MS, USA)
13:40 - 15:00	**Session: Chemical Interactions Between Colloids and at Interfaces** Organizer/s: Robert Macfarlane, Matthew Jones Chair/s: Matthew Jones
13:40	Wed-OW2-01 **The Role of Voids and Porosity On The Transport of Macromolecules through 3-D Printed Polymeric Materials** Angela Zeigler (angela.m.zeigler3.civ@mail.mil), Mark Varady, Melissa Hulet, Brian Ryu, Roseanna Zia (U. S. Army Combat Capabilities Development Command Chemical Biological Center, Research & Technology Directorate, 8198 Blackhawk Rd, Aberdeen Proving Ground, MD 21010)
14:00	Wed-OW2-02 **Conformation Studies of Model Monodisperse Polystyrene Blends in Solution with Chain-End Interactions** Avanish Bharati (bharatia@udel.edu), Tyler B. Martin, Steven D. Hudson, Katie M. Weigandt (Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD 20899 | Chemical and Biomolecular Engineering, University of Delaware, Newark, DE 19716)
14:20	Wed-OW2-03 **Deposit control in the engine: experiments and multi-scale molecular modeling** Anil Agiral (anil.agiral@lubrizol.com), Anthony Gilbert, Esra Kan, Erol Yildirim, Binbin Guo

	(The Lubrizol Corporation)
13:40 - 15:00	**Session: Nanomaterials & Advanced Manufacturing** Organizer/s: Amy Peterson, Esteban Urena-Benavides Chair/s: Esteban Urena-Benavides
13:40	Wed-PW2-01 **Controlled scalable nanofabrication of new classes of colloidal polymer morphologies in sheared liquids** Rachel Bang (rsbang@ncsu.edu), Austin Williams, Orlin Velev (North Carolina State University, Chemical and Biomolecular Engineering)
14:00	Wed-PW2-02 **Fabricating Robust Nanostructured Constructs Using *In Situ* Self-assembly of Surfactants in *Liquid-in-Liquid* 3D printing** Houman Honaryar (hh7bg@mail.umkc.edu), Jacob LaNasa, Elisabeth Lloyd, Robert J Hickey, Zahra Niroobakhsh (Department of Civil & Mechanical Engineering, University of Missouri-Kansas City, Kansas City, Missouri 64110, USA)
14:20	Wed-PW2-03 **PDMS/PMMA Interpenetrating Networks: Synthesis, Characterization, and Mechanical Properties** Tyler Heyl (trh67@u.northwestern.edu), Anthony Silvaroli, Jeremy Beebe, Dongchan Ahn, Shane Mangold, Kenneth Shull, Muzhou Wang (Department of Chemical and Biological Engineering, Northwestern University, Evanston, Illinois 60208)
14:40	Wed-PW2-04 **Au_{32} Nanoclusters are a Seed for Gold Nanorod Synthesis** Liang Qiao (lq8@rice.edu), Yimo Han, Matthew Jones (Department of Chemistry, Department of Materials Science & Nanoengineering, Rice University, Houston, Texas 77005, United States)
15:20 - 16:40	**Session: Self and Directed Assembly in Colloidal Systems** Organizer/s: Jaime Juarez, Samanvaya Srivastava Chair/s: Jaime Juarez
15:20	Wed-AW3-01 **Self assembled colloids and their aggregation in an anisotropic solvent.** Devika Gireesan Sudha (dgireesansudha@ucmerced.edu), Jocelyn Ochoa, Linda S Hirst (University of California Merced)
15:40	Wed-AW3-02 **Visualizing rapid assembly of platinum supraparticles during nanoparticle synthesis with liquid phase transmission electron microscopy** Mei Wang, Chiwoo Park, Taylor Woehl (tjwoehl@umd.edu) (Department of Chemical and Biomolecular Engineering, University of Maryland, College Park)

16:00	Wed-AW3-03 **Orientational Control and Assembly of Shaped Nanoparticles at Interfaces** Yilong Zhou (yz393@duke.edu), Tsung-Yeh Tang, Brian Lee, Gaurav Arya (Department of Mechanical Engineering and Materials Science, Duke University, Durham, North Carolina 27708, United States)
16:20	Wed-AW3-04 **Structure and anisotropic dynamics of stimuli responsive colloidal ellipsoids at the nearest neighbour length scale** Antara Pal (antara.pal@fkem1.lu.se), Mohammad Arif Kamal, Peter Schurtenberger (Division of Physical Chemistry, Lund University, Lund, Sweden)
15:20 - 16:40	**Session: Applications of Scanning Probe Methods** Organizer/s: Dalia Yablon, James Batteas Chair/s: Filippo Mangolini
15:20	Wed-FW3-01 **Advanced Applications of Scanning Probe Nanolithography (Keynote Lecture)** Gang-yu Liu (gyliu@ucdavis.edu) (Department of Chemistry University of California Davis, CA 95616)
16:00	Wed-FW3-02 **Closed-Loop Nanopatterning of Liquids with Dip-Pen Nanolithography** Verda Saygin (saygin@bu.edu), Bowen Xu, Sean Andersson, Keith A. Brown (Department of Mechanical Engineering, Boston University, 110 Cummington Mall, Boston, Massachusetts 02215, United States)
15:20 - 16:40	**Session: Surface and Interfacial Forces** Organizer/s: Mustafa Akbulut, Younjin Min, Ray Dagastine Chair/s: Mustafa Akbulut, Younjin Min
15:20	Wed-HW3-01 **Interaction forces and nanotribology of surfaces modified with bioinspired polyelectrolyte coatings** Marina Ruths (marina_ruths@uml.edu) (Department of Chemistry, University of Massachusetts Lowell, Lowell, MA, USA)
15:40	Wed-HW3-02 **Investigation of Nanorehelogical Properties of Confined Geocolloids** Thiranjeewa Lansakara (thiranjl@ucr.edu), Younjin Min (Department of Chemical and Environmental Engineering, University of California Riverside)
16:00	Wed-HW3-03 **Polymer-surfactant complex and shear mediated non-equilibrium colloidal deposition trajectories** Lechuan Zhang (lzhan145@jhu.edu), Huda A. Jerri, Michael A. Bevan (Chemical & Biomolecular Engr., Johns Hopkins Univ., Baltimore, MD 21218)
16:20	Wed-HW3-04

	Electrostatic Wetting Transition: Charge inversion and Like Charge attraction Nikhil Agrawal (nikhil.agrawal@berkeley.edu), Rui Wang (Department of Chemical and Biomolecular Engineering, University of California, Berkeley, California 94720, USA)
15:20 - 16:40	**Session: Colloids and Interfaces in Environmental Applications** Organizer/s: Xing Xie, Onur Apul, Chad Vecitis, Navid Saleh Chair/s: Xing Xie
15:20	Wed-JW3-01 **Interfacial tensions and film drainage times with surfactant stabilized emulsions: Towards improved liquid-liquid separation** Rana Bachnak (bachn003@umn.edu), Davis Moravec, Brad Hauser, Andrew Dallas, Cari Dutcher (Department of Mechanical Engineering, University of Minnesota – Twin Cities, 111 Church Street SE, Minneapolis, MN 55455)
15:40	Wed-JW3-02 **Heteroaggregation of Neutral and Charged Nanoparticles: Making Core-Shell Nanohybrids Through Self-Assembly** Kazi Albab Hussain, Peng Yi (pyi@fau.edu) (Department of Civil, Environmental and Geomatics Engineering, Florida Atlantic University)
16:00	Wed-JW3-03 **All-Nanoparticle Surface Functionalization for Mid-Infrared On-Chip Sensing** Diana Al Husseini (dianaalhusseini1@tamu.edu), Junchao Zhou, Ricardo Gutierrez-Osuna, Gerard Coté, Pao Tai Lin, Svetlana Sukhishvili (Department of Materials Science & Engineering, Texas A&M University, College Station, Texas 77843, USA)
16:20	Wed-JW3-04 **Fluorinated surfactant self-assembly in aqueous solution for sequestration applications** Samhitha Kancharla (skanchar@buffalo.edu), Dengpan Dong, Dmitry Bedrov, Marina Tsianou, Paschalis Alexandridis (Chemical and Biological Engineering, SUNY Buffalo, Buffalo, NY, United States)
15:20 - 16:40	**Session: Colloids and Interfaces in Biology and Medicine** Organizer/s: Sarah Perry, Lydia Kisley Chair/s: Sarah Perry
15:20	Wed-KW3-01 **Osmotic-Capillary Principles for Microfluidic Pumping and Fluid Management for Sweat Sensing Devices** Tamoghna Saha (tsaha@ncsu.edu), Jennifer Fang, Sneha Mukherjee, Michael D. Dickey, Orlin D. Velev (Department of Chemical and Biomolecular Engineering, North Carolina State University)
15:40	Wed-KW3-02

	Quantiitative, Label-Free Yeast Cell Viability Determination Using Total Holographic Characterization Laura Philips (laphilips@gmail.com), Mary Ann Odete, Rostislav Boltyanskiy, Fook Chiong Cheong (Spheryx, Inc.)
16:00	Wed-KW3-03 **Microfluidics for high throughput sorting and preservation of pancreatic islets** Nikhil Sethia (sethi045@umn.edu), Li Zhan, Joseph S. Rao, Erik B. Finger, John C. Bischof, Cari S. Dutcher (Department of Chemical Engineering and Material Science, University of Minnesota Twin Cities, Minneapolis, MN 55455, USA)
16:20	Wed-KW3-04 **Engineering the nano-bio interface in paper immunoassays for infectious diseases** Kimberly Hamad-Schifferli (kim.hamad@umb.edu) (Department of Engineering, School for the Environment, University of Massachusetts Boston)
15:20 - 16:40	**Session: Surface Science and Catalysis** Organizer/s: Danmeng Shuai, Paul DeSario, Chris Karwacki Chair/s: Chris Karwacki
15:20	Wed-LW3-01 **Towards New Tools for Heterogeneous Catalysis using Soft Materials: Hydrogenation of Nitrile-Containing Liquid Crystals on Palladium Surfaces** Nanqi Bao (nb543@cornell.edu), Jake Gold, Huaizhe Yu, Mohammad Rahman, Trenton Wolter, Robert Twieg, Manos Mavrikakis, Nicholas Abbott (Cornell University)
15:40	Wed-LW3-02 **Changing the Shape of Water in Micropores and the Impact of Non-Covalent Interactions on Catalysis** Daniel Bregante, Matthew Chan, Diwakar Shukla, David Flaherty (dwflhrty@illinois.edu) (University of Illinois at Urbana-Champaign)
16:00	Wed-LW3-03 **Surface chemistry control of the properties of aluminum nanocrystals for sustainable photocatalysis (LaMer Keynote Lecture)** Hossein Robatjazi (hr10@rice.edu) (Syzygy Plasmonics, Inc. Houston, Texas | Department of Chemistry, Rice University, Houston, Texas)
15:20 - 16:40	**Session: Interfacing Biology with Materials** Organizer/s: Ariel Furst, Yi Zhang Chair/s: Ariel Furst, Yi Zhang
15:20	Wed-NW3-01 **Electroadhesion of Polyelectrolyte Hydrogels to Animal Tissues: A Simple Way to Reseal Cut or Damaged Tissues Without Sutures**

	Leah Borden (lkborden@umd.edu), Srinivasa Raghavan (University of Maryland College Park, MD)
15:40	Wed-NW3-02 **Chemically fueled assembly of protein hydrogels driven by a redox cycle** Shakiba Nikfarjam (shnikfar@umd.edu), Taylor Woehl, Mikhail Anisimov (Department of Chemical and Biomolecular Engineering, University of Maryland, College Park)
16:00	Wed-NW3-03 **Multi-Compartment Capsules (MCCs) with Bacteria and Fungi in Distinct Compartments: A Platform for Studying Cross-Kingdom Signaling** So Hyun Ahn (sohyun1@umd.edu), Srinivasa Raghavan, William Bentley, Amy Karlsson (Chemical and Biomolecular Engineering, University of Maryland)
17:00 - 19:00	**Session: Poster Session 2** Organizer/s: Davita Watkins, Lorena Tribe Chair/s: Davita Watkins, Lorena Tribe The session is intended for Q&A of poster presenters. The session is divided into 40 minute blocks. In the first two time blocks, poster presenters from Posters RW-1 to RW-11; and RW-12 to RW-22, respectively will participate in a Q & A session. In the last time block, the judges will deliberate and announce the Langmuir Poster Award winners
	Wed-RW-01 **Organic matter is leaching from microplastics: Can they be removed from water by carbon adsorption?** Ashton Collins (ashton.collins@maine.edu), Mohamed Ibrahim, Francois Perreault, Onur Apul (Department of Civil and Environmental Engineering, University of Maine, Orono, ME 04473)
	Wed-RW-02 **Single-Particle Hyperspectral Imaging Reveals Kinetics of Silver Ion Leaching from Alloy Nanoparticles** Alexander Al-Zubeidi (aa106@rice.edu), Frederic Stein, Charlotte Flatebo, Christoph Rehbock, Seyyed Ali Hosseini Jebeli, Christy Landes, Stephan Barcikowski, Stephan Link (Department of Chemistry, Rice University, 6100 Main Street, Houston, Texas 77005, United States | Smalley-Curl Institute, Rice University, 6100 Main Street, Houston, Texas 77005, United States)
	Wed-RW-03 **Patterning of thin polymer film from dynamics of contact line; guided by chemically patterned surface** KANISKA MURMU (kaniska.m@iitg.ac.in), Partho SG Pattader (Department of Chemical Engineering, IIT Guwahati, Assam, 781039.)
	Wed-RW-04 **A microneedle-based potentiometric sensing system for continuous monitoring of multiple electrolytes in skin ISF** Huijie Li (huijie.li@uconn.edu), Yi Zhang

(Department of Biomedical Engineering, Institute of Materials Science, University of Connecticut, Storrs, Connecticut 06269, United States)

Wed-RW-05
Nanoemulsion-Loaded Capsules for Controlled Delivery of Lipophilic Active Ingredients
Liang-Hsun Chen (lhchen@mit.edu), Li-Chiun Cheng, Patrick Doyle
(Department of Chemical Engineering, Massachusetts Institute of Technology)

Wed-RW-06
Preparation of Cu-based Metal-Organic Structures Doped with Ag ion and Their Hydrogen Adsorption Behavior at Low temperature and Ambient Pressure
Shinichi Hata (hata@rs.socu.ac.jp), Kosuke Miyaji, Izumi Takenaga, Yukihide Shiraishi, Naoki Toshima
(Sanyo-Onoda City University)

Wed-RW-07
Preparation of Pd-Rh Alloy Nanocatalyst Loading Porous Polymer and Decomposition Characteristics for Organic Dye Molecules
Shinichi Hata (hata@rs.socu.ac.jp), Yuki Sakai, Nanami Tani, Sho Kitano, Hiroki Habazaki, Yukihide Shiraishi, Naoki Toshima
(Sanyo-Onoda City University)

Wed-RW-08
Use of an NIR-light-responsive $W_{18}O_{49}$ to improve photocatalytic hydrogen evolution
Inju Hong (inju0515@postech.ac.kr)
(POSTECH(Pohang university of Science and Technology))

Wed-RW-09
Removal of Copper corrosion products from bronze artworks using PVA-based peelable systems
Andrea Casini (andrea.casini@unifi.it), Teresa Guaragnone, David Chelazzi, Rodorico Giorgi
(Department of Chemistry “Ugo Schiff” and CSGI, via della Lastruccia 3, 50019, Sesto Fiorentino (FI), Italy)

Wed-RW-10
Novel microcleaners for microplastic remediation using biodegradable dendricolloids
Rachel Bang (rsbang@ncsu.edu), Lucille Verster, Haeleen Hong, Orlin Velev
(North Carolina State University, Chemical and Biomolecular Engineering)

Wed-RW-11
Template-assisted assembly of electrospun fibers: effect on collection efficiency
Mahmoud Moustafa (mahmoudme@vcu.edu), Ioana Caloian, Ratib Stwodah, Ryan Kim, Christina Tang
(Virginia Commonwealth University, Department of Chemical and Life Science Engineering)

Wed-RW-12
Magnetically aligned PDMS beads for 3D printed architectures
Natasha Castellanos (nimorale@ncsu.edu), Sangchul Roh, Bhuvnesh Bharti, Orlin Velev
(Department of Chemical and Biomolecular Engineering, North Carolina State University)

Wed-RW-13
Measuring the Effect of Cations on Iron Surface Corrosion and Mineral Formation using Atomic Force Microscopy
Kayleigh Wahr (knwahr@mtu.edu), Chathura de Alwis, Kathryn Perrine
(Department of Chemistry, Michigan Technological University, Houghton, MI 49931)

Wed-RW-14
Inactivation of lung surfactant by phospholipase-catalyzed degradation
Julia M. Fisher (juliafisher@ucsb.edu), Todd M. Squires
(Department of Chemical Engineering, University of California, Santa Barbara)

Wed-RW-15
Light Emission from Plasmonic Nanostructures
Behnaz Ostovar (bo6@rice.edu), Yi-Yu Cai, Lawrence J. Tauzin, Stephen A. Lee, Stephan Link
(Department of Electrical and Computer Engineering, Rice University)

Wed-RW-16
Evanescent Wave Trochoidal Polarization Sensitivity is Modulated by Nanoparticle Symmetry
Lauren McCarthy (lam14@rice.edu), Seyyed Ali Hosseini Jebeli, Ojasvi Verma, Ali Rafiei-Miandashti, Stephan Link
(Department of Chemistry, Rice University, 6100 Main Street, MS 60, Houston, Texas 77005, United States.)

Wed-RW-17
Plasmon Energy Transfer in AuNR-Polymeric Hybrid Nanoantennas
Emily K. Searles (es54@rice.edu), Sean S. E. Collins, Stephan Link, Christy F. Landes
(Department of Chemistry, Rice University, 6100 Main Street, Houston, Texas 77005, United States)

Wed-RW-18
Machine-Learned Decision Trees for Predicting Gold Nanorod Dimensions from Spectra Alone
Katsuya Shiratori (ks77@rice.edu), Logan Bishop, Behnaz Ostovar, Rashad Baiyasi, Yi-Yu Cai, Christy Landes, Stephan Link
(Applied Physics Graduate Program, Rice University | Department of Chemistry, Rice University)

Wed-RW-19
Enhanced optical asymmetry in supramolecular chiroplasmonicassemblies with long-range order
Jun Lu (luju@umich.edu)
(Univeristy of Michigan, Department of Chemical Engineering)

	Wed-RW-20 **Functional High Order Localized Surface Plasmon Modes in Au-Si-Au Nanodisk Stacking** Vida Nooshnab (gck811@my.utsa.edu) (The University of Texas at San Antonio)
	Wed-RW-21 **Probing incident light polarization dependent photothermal heating in plasmonic nanostructures via electronic Raman thermometry** Hsu-Cheng Cheng, Boqin Zhao (zhaoboqin58@tamu.edu), Zachary Brawley, Dong Hee Son, Matthew Sheldon (Department of Chemistry, Texas A&M University)
	Wed-RW-22 **Analyzing Plasmon Mediated Reactions through Raman Thermometry** Annika Lee (aslee855@gmail.com), Matthew Sheldon (Texas A&M chemistry)

Author Index

Join us for the 96th ACS Colloid and Surface Science Symposium

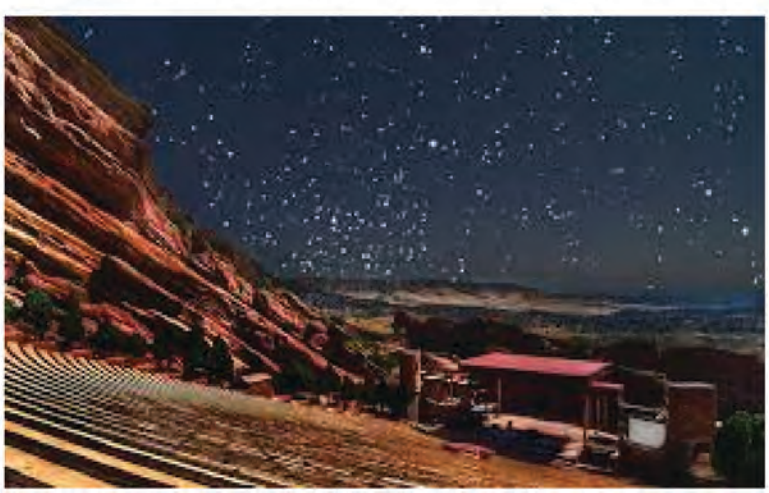
In addition to technical sessions typically held in this symposium, this conference will feature three areas that tie strongly with Colorado: “Surface Science in Catalysis and Energy Research”, “Colloids in Environmental Science”, and “Biomedical Applications of Colloids”. CSM’s partnership with the National Renewable Energy Laboratory (NREL), the University of Colorado Denver and Anschutz Medical Campus, and various industrial consortia will foster networking of researchers from academia, national laboratories, and industry.

Plenary speakers

Naomi J. Halas
Rice University

Bradley Nelson
ETH Zürich

Golden, Colorado, located at the foot of the Rocky Mountains, is the home of the Colorado School of Mines, the National Renewable Engineering Laboratory, and the Coors Brewery, one of the largest brewing facilities in the world. A 20-minute drive from downtown Denver and a short 15-minute drive from the famed Red Rocks Park & Amphitheatre, Golden is the closest point in the Denver/Boulder metro area to mountain destinations with miles of hiking trails for all levels. It is serviced by Denver International airport, the 5th-busiest in the United States.



Organizers

Ning Wu, David Marr
David Wu, Carolyn Koh

Department of Chemical and Biological Engineering
Colorado School of Mines

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