

## ***Program***

# **Advances in Cosmetic Formulation Design**

*A new ECI conference*

**July 22-25, 2018**

**Durham, North Carolina, USA**

### **Conference Chairs**

***Samiul Amin***

Manhattan College

***Ponisseril Somasundaran***

Columbia University



**Engineering Conferences International**

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## **Sunday, July 22, 2018**

2:30 pm – 3:30 pm	Conference check-in (Presidents Gallery)
3:45 pm - 4:00 pm	Welcome Remarks-Conference Chairs Samiul Amin Ponisseril Somasundaran
4:00 pm - 6:30 pm	<b><u>Session 1: Novel Nanoemulsions, Gels &amp; Colloids in Cosmetic Formulations</u></b> Session Chair: Ponisseril Somasundaran, Columbia University
4:00 pm - 4:30 pm	Daeyeon Lee, University of Pennsylvania, USA <i>Janus particles as solid surfactants</i>
4:30 pm - 5:00 pm	Sven H. Behrens, Georgia Institute of Technology, USA <i>Formulation opportunities due to gelling and jamming in colloidal multiphase systems.</i>
5:00 pm - 5:30 pm	Matthew Helgeson, University of California Santa Barbara, USA <i>Multi-nanoemulsions: Nanodroplets in nanodroplets for formulation design</i>
5:30 pm - 6:00 pm	Paul Clegg, University of Edinburgh, United Kingdom <i>Bijels formed by mixing: Escaping from phase separating liquids</i>
6:00 pm - 6:30 pm	Srini Raghavan, University of Maryland, USA <i>New modes of solute release from capsules and capsule-loaded gels</i>
6:30 pm - 7:00 pm	Reception (Presidents Terrace)
7:00 pm - 8:30 pm	Dinner (Presidents II)

### **Room locations and notes**

- General Sessions will be in Presidents I and Poster Sessions will be Presidents Gallery.
- Meals will be in Presidents II.
- The ECI office is the Trinity Room.
- Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) is strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.
- Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).
- Speakers – Please leave discussion time as previously directed by your session chair.
- Please do not smoke at any conference functions.
- Turn your mobile telephones to vibrate or off during technical sessions.
- Please write your name on your program so that it can be returned to you if lost or misplaced.
- After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.
- Emergency Contact Information: Because of privacy concerns, ECI does not collect or maintain emergency contact information for conference participants. If you would like to have this information available in case of emergency, please use the reverse side of your name badge.

## **Monday, July 23, 2018**

- 7:30 am - 9:00 am Breakfast buffet
- 9:00 am - 10:30 am **Session 2: Polyelectrolytes, Complex Coacervation, Polymer-Surfactant Interactions**  
Session Chair: Jordan Petkov, Lonza
- 9:00 am - 9:30 am Robert Lochhead, University of Southern Mississippi, USA  
*Elucidating the mechanism of polymer/surfactant coacervate delivery/conditioning systems*
- 9:30 am - 10:00 am Michael Rubinstein, Duke University, USA  
*From complexation of oppositely charged polyelectrolytes to supramolecular bottlebrushes and gels.*
- 10:00 am - 10:30 am Krishnan Chari, Lubrizol Corporation, USA  
*Surfactant-Activated Micro-gels in Micellar Systems*
- 10:30 am – 11:00 am Coffee Break  
(Sponsored by Lonza)
- 11:00 am – 12:30 pm **Session 3: Novel Materials & Microstructures, Smart Materials-I**  
Session Chair: Prabhjyot Singh, Clariant
- 11:00 am – 11:30 am Kathleen Stebe, University of Pennsylvania, USA  
*Materials via interfacial assembly: strips bijels, nice, & awesome structures*
- 11:30 am – 12:00 pm Niels Holten-Andersen, Massachusetts Institute of Technology, USA  
*Bio-inspired metal-coordination: Using more of nature's tricks to assemble hydrogel materials with multi-functional properties*
- 12:00 pm – 12:30 pm Emily English, Gemstone Biotherapeutics, USA  
*Skin regeneration with a synthetic biomaterial that replaces the extracellular matrix*
- 1:00 pm – 2:30 pm Lunch
- 2:30 pm – 4:30 pm Networking / free time / *ad hoc* sessions
- 5:00 pm - 6:30 pm **Session 4: Novel Materials & Microstructures, Smart Materials-II**  
Session Chair: Kathleen Stebe, University of Pennsylvania
- 5:00 pm - 5:30 pm Anne Dussaud, Momentive Performance Materials, USA  
*New core-shell microgel offers creative texture and water-fresh sensory qualities to skin care products.*
- 5:30 pm - 6:00 pm Martin Vethamuthu, Ashland, USA  
*Emulsions, foams and fragrance design in skin cleansing formulations: Review and innovations*
- 6:00 pm - 6:30 pm Leila Deravi, Northeastern University, USA  
*Light scattering and color adaptation that originate from a natural nanomaterial*
- 7:00 pm - 8:30 pm Dinner
- 8:30 pm - 9:30 pm Social hour / Poster Session

## **Tuesday, July 24, 2018**

- 7:30 am - 8:30 am Breakfast buffet
- 8:30 am - 10:30 am **Session 5: Biosurfactants, Biopolymers & Novel Sustainable Materials**  
Session Chairs: Sven Behrens, Georgia Institute of Technology
- 8:30 am - 9:00 am Jordan Petkov, Lonza, United Kingdom  
*Polyglyceryl Ester based surfactants – an attractive green alternative to the current non-ionic surfactants.*
- 9:00 am - 9:30 am Daniel Derr, NatSurFact, USA  
*NatSurFact: Progress in commercializing rhamnolipids*
- 9:30 am - 10:00 am Stefan Ulvenlund, Enza Biotech, AB, Sweden  
*Novel high-performance ingredients based on functionalized polysaccharides – The role of enzymatic catalysis.*
- 10:00 am - 10:30 am Mridul Sarker, Nanyang Technological University, Singapore  
*Protein nanocages as novel biosurfactant in the formulation of Pickering emulsion and gel*
- 10:30 am - 11:00 am Coffee break
- 11:00 am - 1:00 pm **Session 5: Biosurfactants, Biopolymers & Novel Sustainable Materials-II**  
Session Chairs: Daeyeon Lee, University of Pennsylvania
- 11:00 am - 11:30 am Prabhjyot Singh, Clariant, USA  
*Sulfate free solutions for personal care applications*
- 11:30 am - 12:00 pm Krassimir Velikov, Unilever, Netherlands  
*Bio-based nanoparticles for broadband UV protection with photo-stabilized UV-filters*
- 12:00 pm - 12:30 pm Lulu Henson, International Flavors & Fragrances Inc, USA  
*Fragrance solubilizing properties of bio-based alkyl polyglucosides and their impact on the aesthetic and functional characteristics of a model cleansing composition*
- 12:30 pm - 1:00 pm Ponisseril Somasundaran, Columbia University, USA  
*Bio-Based Surfactants for Benign Cosmetic Products: Principles and Applications*
- 1:00 pm - 2:30 pm Lunch
- 2:30 pm - 4:30 pm Networking / free time / *ad hoc* sessions
- 5:00 pm - 7:00 pm **Session 6: Sensory & Advanced Characterization**  
Session Chair: Samiul Amin, Manhattan College
- 5:00 pm - 5:30 pm Bharat Bhushan, Ohio State University, USA  
*Structural, nanomechanical, and nanotribological characterization of human hair and conditioner using atomic force microscopy and nanoindentation*
- 5:30 pm - 6:00 pm Andrei Potanin, Colgate Palmolive, USA  
*Rheological prediction of sensory attributes for lotions – learning from toothpastes.*
- 6:00 pm - 6:30 pm Hy Bui, L'Oreal, USA  
*Physical characterization of long wear foundations*



**Tuesday, July 24, 2018 (continued)**

- 6:30 pm - 7:00 pm      Saad Khan, North Carolina State University, USA  
*Effect of interactions between a hydrophobically modified polymer and phospholipids in the rheological and frictional properties of complex gels*
- 7:00 pm - 8:30 pm      Conference Banquet
- 8:30 pm - 9:30 pm      Social hour / Poster Session

**Wednesday, July 25, 2018**

- 7:00 am - 8:00 am Breakfast buffet
- 8:00 am - 12:30 pm **Session 7: Sensory & Advanced Characterization & General**  
Session Chair: Martin Vethamuthu, Ashland
- 8:00 am - 8:30 am Anna Howe, Evonik, USA  
*Sensory kaleidoscope – Taking skin feel to the next level taking sensory from nature*
- 8:30 am - 9:00 am Joerg Laeuger, Anton Paar, Germany  
*Advanced rheological and tribological methods for cosmetic products*
- 9:00 am - 9:30 am Samiul Amin, Manhattan College, USA  
*Formulation design of complex fluids based products through diffusing wave spectroscopy (DWS)*
- 9:30 am - 10:00 am Prithwiraj Maitra, Johnson and Johnson, USA  
*The Material Science of Cosmetics*
- 10:00 am – 10:30 am Coffee break
- 10:30 am - 11:00 am Adriana Fregonesi, Natura, Brazil  
*Interactions of cationic formulations on human hair: Effects on cuticle texture and cortex porosity*
- 11:00 am - 11:30 am Ernesta Malinauskyte, TRI, Princeton, USA  
*Effect of city pollution and its cleansing treatments on hair*
- 11:30 am - 12:00 pm Gaurav Arya, Duke University, USA  
*Anisotropic assembly of nanoparticles within polymers*
- 12:00 pm - 12:30 pm Sangchul Roh, North Carolina State University, USA  
*A new class of dendrimeric "gecko legs" polymer particles with extraordinary structure-building, gelation and adhesive capabilities*
- 12:30 pm - 1:30 pm Lunch and Departures

***Posters***

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## **Poster Presentations**

1. **Dynamics of double-semidilute liquid coacervates formed by oppositely charged polyelectrolytes**  
Christian Aponte-Rivera, Duke University, USA
2. **Large scale fabrication of environmentally benign nanoparticles from lignin for use as delivery vehicles of active ingredients**  
Cathryn G. Conner, North Carolina State University, USA
3. **Compound design process - to a better start**  
Aurora Costache, ChemAxon, USA
4. **Understanding tribological behavior of complex gel systems for personal care applications using surrogate skin and their bulk rheology**  
Barbara V. Farias, North Carolina State University, USA
5. **Derivatization of the low-priced commercial retinol for the anti-aging cosmetics**  
Bonwook Koo, Korea Institute of Industrial Technology, South Korea
6. **Multi-method in-vitro and in-vivo evaluation of coacervation and deposition behavior in cleansing formulations**  
Matthew A. Lohr, Johnson and Johnson Consumer Inc., USA
7. **Characterization of ozone effect on human hair**  
Ernesta Malinauskyte, TRI Princeton, USA
8. **Quantification and visulization of taurine delivery and penetration into skin**  
Junhong Mao, Colgate-Palmolive, USA
9. **Transparent and soft elastomeric composites and oil/water biphasic systems with stimuli-triggered release of "invisible" liquid**  
Sangchul Roh, North Carolina State University, USA
10. **Effect of rhamnolipids biosurfactant on traditional surfactants: A macro- and microrheological study**  
Liangchen Xu, Manhattan College, USA
11. **Effect of rhamnolipids on surface tension and interfacial behaviors on traditional surfactants**  
Yao Zhou, Manhattan College, USA
12. **Protein nanocages for cutaneous delivery**  
Mridul Sarker, Nanyang Technological University, Singapore
13. **New customized solutions for hair conditioning applications**  
Prabhjyot Singh, Clariant, USA