REMOTE CDR RESEARCH SEMINAR SERIES

The Center for Dermal Research Welcomes
Dr. Samiul Amin, Manhattan College

"Engineering Complex Fluid Formulations for Enhanced Sustainability in Cosmetic and Personal Care Products"

September 21st; 5:30pm (EST) – REMOTE VIA WEBEX LINK BELOW

Samiul Amin, is currently an Associate Professor of Chemical Engineering at Manhattan College. At Manhattan College Chemical Engineering Department, Prof. Amin currently leads the Cosmetic Engineering focus area.

Prior to joining academia in March 2018, Prof. Amin has worked in industry for the past 20 years working across Engineering, R&D and Innovation Management in global multinationals such as ExxonMobil, Unilever, L'Oreal and Malvern Instruments in Asia, Europe and the US. Prof. Amin's expertise is in colloids & complex fluids, rheology, tribology, advanced characterization and formulation design of consumer, personal care, homecare and biopharmaceutical products. Prof. Amin's research at Manhattan College is focused on formulation design and performance optimization of consumer, cosmetic and homecare products based on novel sustainable materials such as biosurfactants and biopolymers and novel polymer chemistries including stimuli responsive or smart polymers all of which are sourced through collaborations with polymer and materials companies. Prof. Amin's research group additionally works on protein stability and rheology control in high concentration biotherapeutic formulations. Many of the research projects are carried out through collaborations with leading global cosmetic and biopharmaceutical companies.

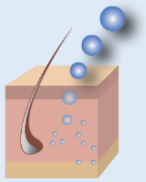
Prof. Amin has served on many committees of national and international societies/organizations such as the Royal Society of Chemistry (RSC)/Society of Chemical Industry (SCI) etc and has Chaired numerous international conferences in the complex fluids/soft matter area in Europe and the US. He is currently the section editor for Current Opinion in Colloid and Interface Science-Formulations and Cosmetics section.

Prof. Amin received his PhD in Chemical Engineering from North Carolina State University, his MS in Chemical Engineering from the Johns Hopkins University and his BS in Chemical Engineering from Rutgers University. Prof. Amin also carried out a postdoctoral fellowship in the Soft Condensed Matter Physics Group at the University of Fribourg in Switzerland.

Abstract: The cosmetic and consumer industrial sector is a high growth industrial sector roughly valued at $532 billion. Due to consumers' increasing awareness on product sustainability, microbially produced biosurfactants are increasingly gaining the interest of the home and personal care industry as potential alternatives for traditional petroleum derived and chemically synthesized surfactants. The future of personal care and detergent products is the elimination of non-biodegradable, environmentally toxic surfactants. Additionally, synthetic polymers utilized extensively in these industries for performance enhancement are being replaced by

RUTGERS

Center for Dermal Research, 145 Bevier Road, Piscataway, NJ 08854
Tel: 848.445.3589 Fax: 732.445.5006 For more information: cdr_frontdesk@dls.rutgers.edu



biodegradable biopolymer alternatives. New sustainable ingredients like chitosan and silk proteins are also showing considerable promise as new high-performance alternatives. However, a move to fully sustainable formulations utilizing novel alternatives will only be successful if the performance criteria such as rheology and surface activity matches or surpasses that obtained from traditional surfactants and polymers. This requires engineering the microstructure and interactions in these formulations and a re-establishment of the microstructure-property-performance linkages in these complex fluid based products. In this talk this approach of engineering the microstructure and interactions for effective product formulation design will be illustrated for a range of sustainable and biodegradable alternatives and their combinations, namely, glycolipids, silk proteins and chitosan. The physico-chemical insights required for establishing the formulation design rules were generated utilizing a range of advanced characterization techniques. These include force tensiometry, interfacial rheology, diffusing wave spectroscopy (DWS), raman spectroscopy, dynamic light scattering etc. As will be highlighted in this talk, the combined utilization of these techniques especially diffusing wave spectroscopy, optical microrheology and Raman spectroscopy offers new insights into the mechanisms and pathways of the self-assembly process and understanding of the driving forces associated with changes in viscosity and viscoelasticity in these complex fluids based products.

WEBEX MEETING LINK:

https://rutgers.webex.com/rutgers/j.php?MTID=me1862e5399909ce977cd39e40986c9ce

Meeting number: 120 914 0144 Password: ZUgDBWQb469

For easier access, request a direct link by sending an email to: cdr_frontdesk@dls.rutgers.edu

Join by video system: Dial 1209140144@rutgers.webex.com
You can also dial 173.243.2.68 and enter your meeting number.
To join by phone: +1-650-429-3300 USA Toll; Access code: 120 914 0144