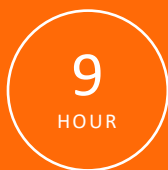


Applied Surfactant Science for Personal Care and Home Care Applications

DIRECTED BY

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ACCREDITED
COURSE

Course Topics Include:

- Surfactant Science Review
- Surfactant Self-Assembly, Advanced Characterization & Rheology
- Surfactant Applications and Formulation Optimization
- For Live attendees ONLY: Workshop

about the course

The primary focus of this course is on developing fundamental principles of surfactant science that are necessary for formulating and optimizing personal care and home care products based on surfactants. Attendees will gain an in-depth understanding of the physico-chemical properties required for optimizing key performance criteria, such as emulsification, cleansing, and foaming. The course will delve into surfactant self-assembly processes, including key microstructures such as wormlike micelles and lamellar gel phases, to build an understanding of the linkages between microstructure, property, and performance.

This 9-hour accredited course will cover the optimization of surfactant-based formulations for various products, including facial cleansers, shampoos, conditioners, and home care products. Practical case studies and simulations will be provided to allow attendees to apply their newfound knowledge. One area of focus will be on biosurfactants.

For Live attendees ONLY: The course will include a workshop where participants can collaborate to brainstorm formulation challenges for sustainable alternatives like biosurfactants. They will develop experimental programs to mitigate risk by utilizing principles learned in the course.

who should attend

This course will be of interest and value to scientists, formulators, supervisors, and managers engaged in development, formulation, production, analytical characterization of personal care and home care products that require a good working knowledge of applied surfactant science.

Job titles include, but are not limited to:

- | | |
|---------------------|------------------------|
| • R&D | • Chemical Engineering |
| • Quality Control | • Process Engineering |
| • Production | • Formulation |
| • Quality Assurance | |

learning objectives

Upon completion of this course, you will be able to:

- Explain the basic principles of fundamental surfactant science and surfactant properties required to optimize key performance criteria-cleansing, foaming, emulsification
- Describe surfactant self-assembly and properties and performance of various surfactant microstructures-wormlike micelles, lamellar gel phases
- List the viscosity and rheology controlling mechanisms in various surfactant microstructures
- Review surfactant interactions with polymers and other formulation materials
- Explain the advanced characterization techniques required to establish structure-property-performance links in surfactant-based products

course outline

Review of Learning Objectives Surfactant Science Review

- Classification of surfactants
- HLB, CMC
- Surface and Interface Properties
- Emulsifiers

Surfactant Self-Assembly, Advanced Characterization & Rheology

- Worm-like Micelles
- Lamellar Gel Phases
- Hexagonal and Cubic Phases
- Surfactant-Polymer Interactions
- Review and Discussion

Surfactant Applications and Formulation Optimization

- Facial Cleansers and Make-Up Removers
- Body Washes and Shower Gels
- Hair Shampoos
- Hair Conditioners
- Home Care Formulations

Some Additional Aspects

- Emulsions
- Nanoemulsions
- Foams

course instructor

Workshop: Sustainability: Biosurfactants and Performance

- Given 1-2 new Biosurfactants
- Split into groups to develop R&D and Formulation Challenges & Experimental Plans to de-risk
- Feedback to plenary session

Review and Discussion

Assessment Opportunity

Samiul Amin is currently a Professor of Practice, Department of Chemical, Environmental and Materials Engineering, University of Miami. 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 personal care, homecare and biopharmaceutical products. Prof. Amin’s research at Manhattan College is focused on formulation design and performance optimization of cosmetic and homecare products based on novel sustainable materials such as biosurfactants and biopolymers. Prof. Amin has significant number of scientific publications/patents/book chapters in the area of complex fluids, rheology and cosmetic and biopharmaceutical formulations. He has served on scientific committees of multiple national and international societies such as the Royal Society of Chemistry (RSC), American Association of Pharmaceutical Scientists (AAPS) and has Chaired and Co-Chaired multiple International Conferences and Workshops.

Accreditations



International Accreditors for Continuing Education and Training (IACET)

Cobblestone has been approved as a CEU Accreditor by IACET and awards CEUs for participation in qualified courses. Cobblestone has demonstrated that it complies with the ANSI/IACET Standards and is authorized to offer IACET CEUs for its programs. CEUs will be awarded for participation in Cobblestone’s courses at the rate of .1 CEU per contact hour upon successful completion of the entire course and 70% accuracy in the required Learners’ Assessment. A minimum score of 80% is required for all courses within a Cobblestone Certification Program. This course offers a total of 9 contact hours, or .9 CEUs. For further information, visit www.iacet.org

The American Institute of Chemists (AIC) -

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