COBBLESTONE

COURSE ID 2844

REVISED!

Biobased and Green Surfactants and Detergents

Current State-of-the-Art and Future Directions

DIRECTED BY

Douglas G. Hayes — Professor of Biosystems Engineering and Adjunct Professor of Chemical

90 MINUTE

ACCREDITED COURSE

Course Topics Include:

- Principles and Fundamentals
- Bio-based Surfactants Using Green Chemistry
- New and Emerging Bio-based Surfactants

about the course

This 90-minute accredited training will describe bio-based and green surfactants and why they comprise a growing market. The course will explain why the use of enzymes and microorganisms to prepare bio-based surfactants is an emerging research and development area and provide some specific synthesis strategies. New and emerging bio-based surfactants in the marketplace will be presented.

who should attend

This training has been designed to benefit professionals in the environmental, home and personal care industries. It will be especially worthwhile to those working in research and development, vendors and suppliers, laboratory chemists and scientists and formulation personnel.

learning objectives

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

- Define the terms bio-based and green surfactants and explain the underlying principles and fundamentals
- Explain sustainable and green chemistry aspects pertaining to surfactants' lifecycle, from cradle-to-grave, including the use of enzymes and microorganisms for their preparation
- Identify current, new, and emerging bio-based surfactants: their syntheses, properties, and applications

course outline

Review of Learning Objectives

Module 1: What are biobased and green surfactants?

- Overview of key definitions and current and projected market trends
- Overview of sustainability and its relevance to the life cycle of surfactants, from cradle-to- grave, and comparison to fossil fuel-derived surfactants
- Overview of ecolabels used for biobased surfactants, and their relevance
- Feedstocks for biobased surfactants and the relevance of an oleochemical biorefinery concept

Module 2: How to prepare biobased surfactants using green chemistry

- Overview of green chemistry and manufacturing
- Goals for green manufacturing of surfactants
- Examples of green manufacturing of surfactants
- Use of enzymes to prepare biobased surfactants
- Biosurfactants: surfactants prepared from microorganisms

Module 3: Examples of new and emerging biobased surfactants

- Biobased surfactants currently in use, and their applications
- New and emerging biobased surfactants

Question and Answer Session

Assessment Opportunity

course instructor

Douglas G. Hayes is an Institute Professor of Biosystems Engineering and Adjunct Professor of Chemical and Biomolecular Engineering at the University of Tennessee, with over 30 years of experience with surfactants and detergents and their use in soft matter systems. Dr. Hayes also has research interests in value-added products from renewable resources, biopolymers in agricultural systems, and nanotechnology. Dr. Hayes has published over 90 publications in peer-reviewed journals, over 23 book chapters, and three co-edited books. Dr. Hayes has won awards for both his teaching and research programs. Dr. Hayes received his BS and PhD at Iowa State University (1986) and the University of Michigan (1991), respectively. Dr. Hayes serves as Editor-in-Chief of Journal of Surfactants and Detergents.

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 1.5 contact hours, or .2 CEUs. For further information, visit www.iacet.org