AICTE QIP
SHORT TERM TRAINING PROGRAMME

On
Applications of emulsions, foams and colloidal dispersions

January 23 - 28, 2017

Coordinators:
Dr. Sumesh P Thampi
Dr. Ethayaraja Mani

Sponsored by
All India Council for Technical Education

Organized by
Department of Chemical Engineering
Indian Institute of Technology Madras
Chennai - 600 036

BACKGROUND
Suspensions, emulsions and foams are integral materials in our everyday life as well as in several industries. Advances in nanotechnology, however, have not only widened the scope of these complex materials (also known as soft matter) but it has also brought in novel applications. This course is designed to introduce the participants to the fundamental principles that govern the preparation, stability and dynamics of complex materials such as emulsions, foams and colloidal dispersions. Adequate theoretical background, experimental demonstrations and lectures with specific applications will be offered to promote this learning process. Due to the interdisciplinary nature of the topic, it is of interest to a wider audience both from engineering and science background. Therefore the course will be beneficial to a larger audience from both industry and academia.

COURSE CONTENTS

FUNDAMENTALS
- Introduction to Colloids and Interface Sciences
- Intermolecular forces and theory of self-assembly
- Thermodynamics of interfaces
- Charges in colloidal systems and stability
- Interfacial processes, aggregation and adsorption
- Capillarity, wetting and hydrodynamics of interfaces

EXPERIMENTAL DEMONSTRATIONS
- Contact angle (Goniometer)
- Dynamic surface tension (Pendent drop method)
- Particle size and zeta potential (Dynamic Light Scattering)
- Brownian motion (Light microscopy)
- Adsorption isotherms
- Preparation of emulsions and foams
- Rheology of suspensions (Rheometer)

APPLICATIONS
- Enhanced oil recovery
- Protein encapsulation and separation
- Detergency
- Food colloids (coacervation, edible emulsions, jelly)
- Cosmetics (foams, skin care products)
- Hydrophobic surfaces
- Artificial living particles
- Drug delivery

FACULTY
Faculty members of IIT Madras and guest faculty members from other premier Institutions/ Organizations will deliver lectures.

COURSE MATERIAL
Each registered participant will be provided with a set of comprehensive lecture notes.

COURSE DURATION & VENUE
The course is of six days duration from January 23 - 28, 2017. Classes will be held in the room MSB 241, Chemical Engineering Seminar Hall, IIT Madras, Chennai.
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SPONSORSHIP
Prof./Dr./Mr./Ms./Mrs./__________________________
is an employee of our institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course “Applications of emulsions, foams and colloidal dispersions” at IIT Madras during January 23 - 28, 2017, if selected.

Date: Signature of Sponsoring Authority
Designation: Official Seal:

Provisionally selected candidates have to send a Demand Draft (DD) for Rs. 500/- as caution-money:

DD No. Date:

Bank: Signature of the Applicant

The duly sponsored application form should be posted to:
Dr. Sumesh P Thampi / Dr. Ethayaraja Mani
Assistant Professor(s)
Dept. of Chemical Engineering
IIT Madras, CHENNAI – 600 036
E-mail: colloids2017@gmail.com

Note: Please email us a soft copy of your duly filled application followed by hard copy of the same to the address mentioned above.

ELIGIBILITY & REGISTRATION FEE
The course is open to faculty with background in Biotechnology, Chemical Engineering, Civil Engineering, Chemistry, Physics, Metallurgy & Materials Science and Mechanical Engineering from AICTE approved engineering colleges. No course fee is charged for participants sponsored by AICTE approved institutions. However, Rs 500/- has to be sent by the provisionally selected participants as caution deposit. Delegates from other institutes/industries have to pay Rs. 10000/- as registration fee, which includes course material & lunch, only. They are expected to arrange their accommodation themselves.

All payment is to be made by demand draft drawn on any nationalized bank in favor of Registrar, IIT Madras payable at Chennai. Limited number of participants from AICTE recognized engineering institutions will be eligible for to and fro railway fare via shortest route in 3-Tier AC class. Candidates attending the course till its completion will only be eligible for travelling allowance.

BOARDING AND LODGING
Boarding and lodging facilities will be provided for the selected candidates from AICTE approved institutions in the Taramani guest house at IIT Madras. Accommodation will be on twin sharing basis.

IMPORTANT DATES
Last date for applications: 15-11-2016
Intimation of selection (through email): 25-11-2016
Confirmation of participation: 30-11-2016

Center for Continuing Education, IITM:
http://www.cce.iitm.ac.in/
Department of Chemical Engineering, IITM:
http://www.che.iitm.ac.in/

Course coordinators Profile:
Dr. Sumesh P. Thampi
http://www.che.iitm.ac.in/~sumesh
Dr. Ethayaraja Mani
http://www.che.iitm.ac.in/~ethaya

Accommodation will not be provided to local participants.

Place: Date: Signature of the Applicant

Proforma of Application Form

- Name (in block letters): ____________________________
- Designation: ________________________________
- Department: ________________________________
- Organization: ___________________________________
- Address for communication: __________________________

Pin code: Ph. No.: Fax No.: Mobile No.: E-mail:

- Highest Academic Qualification: ________________
- Specialization: ________________________________
- Explain a) your research area & b) purpose of attending this workshop.
- Experience (in years):
  (a) Teaching: ________________________________
  (b) Industrial: ________________________________
- Accommodation: Required / Not Required
  (Accommodation will not be provided to local participants)

All data provided are true to the best of my knowledge and belief. Kindly register me for the short term course on “Applications of emulsions, foams and colloidal dispersions” to be held at IIT Madras.