

**AICTE QIP  
SHORT TERM TRAINING PROGRAMME**

On

**Advances in Multiphase Flow  
January 28 – February 03, 2021**

**Coordinators:**

**Dr. S.Vengadesan  
&  
Dr. Dhiman Chatterjee**

*Sponsored by*

**All India Council for Technical Education**



*Organized by*

**Department of Applied Mechanics  
and  
Department of Mechanical Engineering  
Indian Institute of Technology Madras**

**BACKGROUND**

Multiphase flow is ubiquitous in nature and engineering applications and attracts physicists and engineers alike. Formation of fog or sediment transportation by a river are examples from nature. Gas-solid particle fluidized bed, oil-water-air flows in chemical/petrochemical industries are some such examples of engineering applications. Change of phase, particularly those between liquid and vapour phases, are also having many applications. Boiling and

condensation find use in applications ranging from like microscale electronic cooling to large steam turbines in a thermal power plant. Cavitation is another example of phase change which is advantageous in chemical and biological systems but is harmful in many hydraulic devices.

**COURSE CONTENT**

- Introduction to multiphase flow
- Fluidized bed
- Thermodynamics of phase change and nucleation
- Boiling: Pool, film and Flow
- Condensation
- Cavitation
- Multiphase flow applications in microscale flows
- Atomization and sprays
- Multiphase flows in healthcare system
- Oil-water-Gas flows in the petrochemical industry
- Experimental characterization of multiphase flows
- Numerical Methods for multiphase flow

**FACULTY**

Faculty members of IIT Madras and 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 one week (six days) duration from **January 28 – February 03, 2021**. Lectures will be delivered in online mode only.

**ELIGIBILITY**

The course is open to faculty with background in Mechanical and allied branches from engineering colleges approved by AICTE. *No course fee* is charged for participants sponsored by AICTE approved institutions.

Register through the following google form / QR code

[https://docs.google.com/forms/d/e/1FAIpQLScSTrcnuTcJhd2iAfiKLP\\_nI0N-WaT\\_qXtBFzPTEPhDsNM5Hw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScSTrcnuTcJhd2iAfiKLP_nI0N-WaT_qXtBFzPTEPhDsNM5Hw/viewform?usp=sf_link)



**IMPORTANT DATES**

Last date for registering : **20-12-2020**  
Intimation of selection (by email) : **05-01-2021**  
Confirmation of participation (by email) : **10-01-2021**

**Important Links**

**Center for Continuing Education, IITM:**  
<http://www.cce.iitm.ac.in/>

**Department of Applied Mechanics**  
<https://apm.iitm.ac.in/>

**Department of Mechanical Engineering, IITM:**  
<http://mech.iitm.ac.in>

**CERTIFICATE FROM INSTITUTE**

Prof./Dr./Mr./Ms./Mrs./\_\_\_\_\_ is a regular faculty of our institute and his/her is permitted to attend the short-term course “Advances in Multiphase Flow” in online conducted by IIT Madras during January 28 – February 03, 2021, if selected.

Date: \_\_\_\_\_  
Signature of Sponsoring Authority  
Designation: \_\_\_\_\_  
Official Seal: \_\_\_\_\_

**Dr. S.Vengadesan;**  
<https://sites.google.com/site/vengadesiitmam/>

**Dr. Dhiman Chatterjee**  
<https://mech.iitm.ac.in/meiitm/personnal/dr-dhiman-chatterjee/>