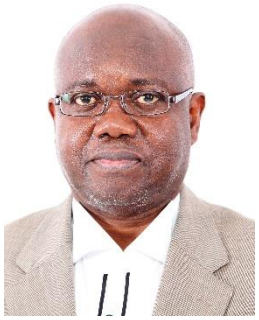
Multiphase Combustion: Theory and Modelling

Overview

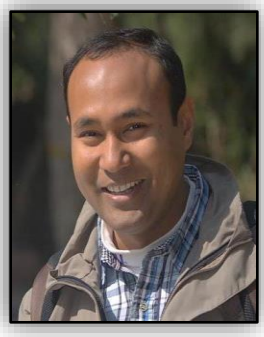
Combustion is still the world's most important and most widely used energy conversion technology. Potential environmental damage and limited resources of fossil fuels require more intensive efforts to better understand the underlying combustion processes, especially those resulting from liquid fuels and subsequent sprays. The fundamental knowledge of sprays and combustion is expected to improve the design of the industrial combustion systems by enhancing the flame stability, improving the combustion efficiency, and reduction in pollutant formation. The short course is intended to provide fundamental understanding of this multi-scale, multi-physics problem, i.e. combustion, sprays and their potential applications and challenges in the development of modern combustor systems for the transportation, power-generation and other industrial applications.

Course Information	**Duration: July 20 – July 24, 2020** (05 days) **Total Contact Hours:** 20 hours in 05 days **Number of participants for the course will be limited to fifty.** Course participants will learn these topics through lectures and interactive sessions.
Modules	**Module 1.** Generality of Multiphase Flows **Module 2.** Liquid Atomization and Spray Structure **Module 3.** Characterization of Sprays and micro-processes **Module 4.** Spray Transport and interphase coupling Dynamics **Module 5.** Phase Change Phenomena and Mixture Formation **Module 6.** Turbulence and turbulent combustion **Module 7.** Turbulent Spray Combustion **Module 8.** Numerical Description Techniques of Turbulent Spray Combustion and Applications
You Should Attend If...	• Executives, engineers and researchers from academia, industry and government organizations including R&D laboratories with a background in aerospace, automotive, mechanical, and chemical engineering. • Postgraduate students (MSc/MTech/PhD) and faculty from reputed academic institutions and technical institutions.
Fees	The participation fees (including taxes) for taking the course is as follows: **Participants from abroad**: US $600 **Govt. Research Organizations**: INR 7,000 **Private Industry**: INR 12,000 **Faculty**: INR 5000 **Students**: INR 2000 The above fee includes all instructional materials, computer use for tutorials, 24 hr free internet facility. The participants will be provided with single-bed accommodation on payment basis.

The Faculty



Prof. Amsini Sadiki is the leader of the modeling and numerical group at the Institute of Energy and Powerplant Technology at the Technical University of Darmstadt (TUDa). His research interests focuses on exergy analysis and on developing new techniques for modelling and simulating complex fluid flows in complicated geometries of energy systems including multiphase reacting flows and interacting processes using CFD.



Prof. Ashoke De is an Associate Professor of Aerospace Engineering at Indian Institute of Technology, Kanpur. His research interests are CFD, turbulent combustion, turbulent flows in gas turbines, hydrogen combustion, stochastic PDF based combustion modelling, high speed aerodynamics, high performance computing.

Course Co-ordinator

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