

Microfluidics and Nanofluidics : A window to Condensed Matter Physics

Overview

Microfluidics and nanofluidics have received huge momentum in recent years due to its wide application areas ranging from energy to molecular diagnostics. However, it has a strong foundation in fundamental condensed matter physics and hence it is important to have a physical perspective of this fascinating area in order to accelerate discovery and innovation that could be integral to the fourth industrial revolution.

Internationally acclaimed academics, researchers and practitioners with proven knowledge, experience, and demonstrable ability in teaching, consultancy, research, and training in the field of Microfluidics and Nanofluidics will deliver lectures and discuss cases in the course.

Objectives

- Exposing participants to the fundamentals aspects of fluid transport in micro and nano confinements
- Understanding of interaction of ions and substrate – both rigid and soft materials
- Providing exposure to hands-on experience with micro/nano-scale fluid mechanics through laboratory sessions
- Enhancing the overall appreciation of the convergence of science and engineering for societal impact.

Modules	February 5 to 9, 2018 Lectures: 9:30 hrs to 11:45 hrs Tutorials: 13:00 hrs to 16:00 hrs Module Examination on February 9, 2018
You Should Attend If...	<ul style="list-style-type: none">• Executives, scientists, engineers and researchers from manufacturing service and government organizations including R&D laboratories.• Students at all levels (BTech/MSc/MTech/PhD) or Faculty Members from reputed academic institutions and technical institutions.
Fees	The participation fees for taking the course is as follows: Students from SPPU : Rs. 500/- All Others: Rs. 1000/-

The Faculty



Prof. Sushanta Mitra is the Executive Director of the Waterloo Institute for Nanotechnology and a Professor in Mechanical and Mechatronics Engineering at the University of Waterloo. Before joining UW, he was the Associate Vice-President Research and Kaneff Professor in Micro & Nanotechnology for Social Innovation at the York

University. His research interests are in the fundamental understanding of fluid transport in micro and nano-scale confinements with applications in energy, water, and bio-systems. He has authored and co-authored more than 130 peer-reviewed journal papers, which includes publications in *Nature Publishing Group*, *American Physical Society*, *Royal Society of Chemistry*, *American Chemical Society* and *Elsevier* journals. His research has been featured by number of media outlets including *Maclean's*, *Vancouver Sun*, *Edmonton Journal*, *Times of India*. He has delivered over 100 invited lectures across the world including the 2012 Lester Pearson Lecture

He was the Associate Scientific Director for the Canada-India Research Centre of Excellence, IC-IMPACTS, the first bi-national Network Centres of Excellence created by the federal government of Canada. Among many other responsibilities, he is currently the President of the Canadian Society for Mechanical Engineering and is a member of the Committee on International Scientific Affairs, American Physical Society. For his contributions in engineering and sciences, he is elected as the Fellow of the American Society of Mechanical Engineers (ASME), the Canadian Society for Mechanical Engineering (CSME), the Engineering Institute of Canada (EIC), the Canadian Academy for Engineering (CAE), the Royal Society of Chemistry (RSC, UK), and the American Association for the Advancement of Science (AAAS). He is also a Fellow of the National Institute for Nanotechnology (NINT) and the recipient of 2015 Engineering Excellence Medal from the Ontario Society of Professional Engineers.

Course Co-ordinator

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