Imperial College London

Centre for Process Systems Engineering

Seminar

UCL

Physical insights into multiphase flows in micro-fluidics

Prof. S. Pushpavanam

(Indian Institute of Technology Madras)

3 May 2018, 3pm
Lecture Theatre 2, ACEX 203

Abstract:

In this talk I will present some recent research work that we have been doing in IIT Madras in multiphase flows in microfluidics. I will talk on five different problems, the effect of soft walls on hydrodynamic instabilities in stratified flows, concentrating solutes using foam fractionation, estimating mass transfer coefficients under controlled conditions, improving mixing using electric fields in micro channels and manipulating inertial focusing of particles using electric fields. The talk will focus on explaining the crucial physics in these problems and the important results. The mathematical techniques used to analyse this will be highlighted. In addition to theoretical results, experimental results will also be discussed.

Bio:

Professor Pushpavanam is Institute Chair Professor at the Indian Institute of Technology Madras. He obtained his undergraduate degree at IIT Madras and his masters and PhD degrees at the University of Florida Gainesville. Following this, he spent the first part of his academic career at IIT Kanpur before moving to IIT Madras. His research focusses on fluid dynamics, reaction and transport processes, microscale phenomena and green engineering. In addition to his work in engineering science he has also worked on technological/industrial projects related to plasma coal gasification and nuclear reactor safety. His work combines mathematical modelling, nonlinear dynamics and experimental studies. He has been awarded an excellence in teaching award at IIT-Madras and a Grand Challenges Exploration India award from the Bill and Melinda Gates foundation. He is also the author of two books, including one on Mathematical Methods of Chemical Engineering.

Lecture Theatre 2, ACEX 203, Department of Chemical Engineering, Imperial College London, SW7 2AZ
This event is free and open to the public. No registration is required.