Indian Institute of Technology Kanpur

INSTITUTE LECTURE SERIES

September 9, 2024 (Monday) | 3 pm | L - 17

Talk Title: Journey of Droplets: Baiju Bawra to Michael Jackson

Speaker: Prof. Saptarshi Basu

Indian Institute of Science, Bengaluru

About the Speaker

Prof. Saptarshi Basu did his Phd from University of Connecticut in 2007 and joined University of Central Florida. In 2010, he joined the Indian Institute of Science, Bengaluru where he is currently the Pratt and Whitney Chair Professor in the Department of Mechanical Engineering.

Prof. Basu primarily works on multiphase systems, especially droplets at multiple length and timescales across multiple application domains ranging from surface patterning to combustion. Recently Prof. Basu have done extensive research on transmission of aerosols during COVID and on the efficacy of facemasks. His research marries fundamental aspects of classical fluid mechanics like vortex dynamics and swirling flows and the more interdisciplinary aspects of interface transport as in droplets to offer unprecedented insights into multiphase systems.

He is a fellow of Indian National Academy of Engineering, ASME, Institute of Physics, Royal Aeronautical Society and Royal Society of Chemistry and recipient of DST Swarnajayanti Fellowship in Engineering. He has received the K. N Seetharamu medal for his contribution to heat and mass transfer, Rajib Goyal prize in applied sciences and Distinguished engineer award from University of Connecticut. Prof. Basu is a co-founder of a Biotech startup specializing in AI based Point of Care Diagnostics and a technical advisor to a deep tech startup involved in micro gas turbines. He serves as an editor/guest editor of several journals like scientific reports, Experiments in Fluids and European Physical Journal Special Topics. Prof. Basu's research is extensively funded by Department of Defence, Indian Space Research Organization, Department of Science and Technology, Indo-German Science and Technology Center, Indo-US Clean Energy Center , NSF and industries like Siemens and Tata Motors.

Abstract of the Talk

Droplets are everywhere from raindrops to sprays in gas turbines to thermal barrier coating to pandemics to hypersonics. In this talk, Dr. Basu is going to elucidate how the physics of transport is almost universal for all these applications. The autobiography of a droplet in all these environments obeys certain physical models in its core even though the outcome looks very different application wise. The speaker will take the audience on a ride across these domains and illustrate the true nature of droplet transport.

All are cordially invited to attend

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