

INVITATION

DISTINGUISHED LECTURE

“Innovations in Affordable and Accessible Disease Detection Technologies for the Grassroots”

Speaker

Prof. Suman Chakraborty

Chair Professor, Department of Mechanical Engineering & Sir J. C. Bose National Fellow, Formerly Head, School of Medical Science and Technology Dean, Research & Development, Indian Institute of Technology, Kharagpur



On:

April 29, 2025, 02:00 pm

Venue:

Mini Auditorium
Science City, Kolkata



SIR J C BOSE TRUST

Acharya Bhaban

Science Heritage Gallery & Research Centre
J C Bose Science Heritage Museum
93 APC Road, Kolkata 700009



संस्कृति मंत्रालय
MINISTRY OF
CULTURE

Science City

A unit of
National Council of Science Museums
Ministry of Culture, Govt. of India
J.B.S. Haldane Avenue, Kolkata-700 046

PROGRAMME

- 02.00 pm** **Registration**
- 02.30 pm** **Welcome Address**
Prof. Parul Chakrabarti, Secretary & Trustee
Sir J C Bose Trust & Coordinator
of the Programme & the Museum
- 02.35 pm** **Convenor's address**
Shri Anurag Kumar
Director, Science City, Kolkata
- 02.40 pm** **Introduction of the Speaker**
Prof. Partha Pratim Majumder
National Science Chair
Govt. of India
- 02.45 pm** **Distinguished Lecture**
*“Innovations in Affordable and Accessible
Disease Detection Technologies for the
Grassroots”*
Prof. Suman Chakraborty
Chair Professor, Department of Mechanical
Engineering & Sir J. C. Bose National Fellow
- 03.45 pm** **Interactive session**
- 04.00 pm** **Vote of Thanks**

Speaker Profile:

Suman Chakraborty is Institute Chair Professor in the Mechanical Engineering Department of the Indian Institute of Technology Kharagpur, India and Sir J. C. Bose National Fellow as bestowed by the Department of Science and Technology, Government of India. He has been the Head of the School of Medical Science and Technology and the Dean of Research and Development of the Institute. His current areas of research include microfluidics, nanofluidics, micro-nano scale transport, with particular focus on biomedical applications including novel diagnostic technologies for affordable healthcare. Prof. Chakraborty is a recent winner of the National Award for Teachers presented by the Honourable President of India, and prestigious international accolades including the UNESCO-TWAS Award bestowed by the World Academy of Science in the domain of Engineering & Computer Science, Freeman Scholar Award from the American Society of Mechanical Engineers (ASME) and the coveted Infosys Prize (in category of Engineering & Computer Science). Based on his outstanding research contributions, he has also featured in the list of top 100 Researchers across all disciplines in Asia in 2023 by the Asian Scientist Magazine and the top-ranked researcher in Mechanical & Aerospace Engineering in India as per research.com. He has been the recipient of the Santi Swaroop Bhatnagar Prize in the year 2013, which is among the highest Scientific Awards from the Government of India. He has been elected as a Fellow of the American Physical Society, Fellow of the Royal Society of Chemistry, Fellow of the ASME – 3 of the leading International Academic Bodies. He is also a Fellow of all the Indian National Academies of Science and Engineering. He has been the recipient of the G. D Birla Award for Scientific Research, National Academy of Sciences India – Reliance Industries Platinum Jubilee Award for Application Oriented Research, Rajib Goyal Prize for Young Scientists, Indo-US Research Fellowship, Scopus Young Scientist Award given by Elsevier for high citation of his research in scientific/technical Journals, and Young Scientist/ Young Engineer Awards from various National Academies of Science and Engineering, and recipient of Outstanding Teacher Award from the Indian National Academy of Engineering. He has also been an Alexander von Humboldt Fellow, and a visiting Professor at various leading Universities abroad. He has a large volume of impactful publications in top International Journals (560+) with high citations (17000+) as well as patents/ licensed technologies and a unique expertise in technology development for the under-served population and community health-care.

Innovations in Affordable and Accessible Disease Detection Technologies for the Grassroots:

This talk aims to outline the saga of a journeyman's dream - transforming the speaker from a novice engineer with no formal education in health sciences to a technology enabler in rural healthcare. The motto "Dedicated to the Service of the Nation", embalmed on the Main Building of the parent Institution of the Speaker (IIT Kharagpur), deeply resonated with the speaker's inner perspective, sparking an internal conflict between the ideal and reality. This led to a profound introspection, driven by a passion for deep-tech research that does not merely help advancing fundamental science but also benefits the underserved at large. In this talk, the speaker will share key insights gained from applying fundamental engineering principles to address the compelling challenges in rural healthcare. Case studies on unique diagnostic technologies developed by his group will illustrate how public health policies, socially-sensitive considerations, and interdisciplinary collaboration might shape impactful solutions, in addition to the technology backbone. Leveraging IoT, AI, and telemedicine could further improve accessibility, while partnerships with clinicians, policymakers, and communities could enhance sustainable implementation. Sensitivity to socio-cultural ethos, business models and government initiatives could additionally support scalability as against isolated sensitizing efforts. The learning from this illuminating journey ultimately transformed the engineering self of the speaker into a change-driver, aiming to bridge the paining healthcare gaps with sustainable, inclusive innovations with no differential consideration for the rich and the poor.