

ME Seminar



Riding the phonon spectrum

Prof. Prabhu Rajagopal, Department of Mechanical Engineering, IIT Madras

ABSTRACT

This talk will discuss the elastic wave or phonon spectrum and how it offers unmatched possibilities for sensing and computing. Covering Prof. Prabhu's work over the last decade, starting from early work on feature-guided waves, through developments on ultrasonic metamaterials, to his recent foray into the quantum domain, the talk will consider the fascinating prospects for this fledgling field of Phononics in the coming century.

ABOUT THE SPEAKER

A Dual Degree graduate from Indian Institute of Technology, Madras (IITM - 2003, ME), Prabhu Rajagopal obtained his PhD in Ultrasonic Nondestructive Evaluation (NDE) from Imperial College London, UK in 2007, followed by a 3-year stint as a Rolls-Royce funded Postdoc. Joining the Centre for NDE (CNDE) at the Machine Design Section of the Mechanical Engineering Department at IITM in December 2010, Dr. Rajagopal was promoted as full Professor in March 2019. His research interests are in Nondestructive Evaluation focusing on robotics, waveguide sensors and metamaterials, with over 20 industry/agency projects (\sim 30 Cr, half as PI), 170 technical articles in peer reviewed journals and conference proceedings and 19 filings and one granted Indian patent. His research is strongly collaborative and international, with joint projects/publications with groups from universities such across the world. Passionate for tech-translation, Dr. Rajagopal has co-founded Startups including Planys and Solinas which deliver robotic inspections for submerged structural assets and more recently Xyma Analytics delivering Industrial IOT using waveguide sensors. Planys has received the prestigious National Entrepreneurship Award (2019) and National Startup Award (2020) for pioneering work on underwater robotics. Dr. Rajagopal's work on a robotic Septic Tank cleaning solution has been discussed widely. Dr. Rajagopal's interest in Design is part of his personal quest that also underlines his interest in art and literature as an avid poet, Dr Rajagopal has two volumes of poetry exploring the genres of cubism, surrealism and minimalism. Dr. Rajagopal's research is widely recognised through awards including the National Design Award from NDRF- Institution of Engineers (India), Young Scientist Awards from the Indian Society for NDT and the Institute for Smart Structures and Systems, IISc Bangalore, Institute R & D (Early Career) Award from IIT Madras and, more recently, the prestigious National Swarnajayanti Fellowship Award from DST, Govt. India. His work has also received coverage in prestigious national and international print/online media over the last few years.



March 26, 2021, 3:30 pm, Microsoft Teams