

**CENTRE FOR NANO-MATERIALS AND MEMS***in association with***INSTITUTE OF SMART STRUCTURES AND
SYSTEMS (ISSS)***is organising an*

Online Tech-Talk on

**RECENT TRENDS IN MEMS
TECHNOLOGY**

On 5th and 6th of May 2022

**Sukshmabhilap
Malika 2022****ABOUT THE CENTRE**

Research in Nano materials and MEMS has recently gained momentum with many academicians, researchers and industries taking active part in it. The Centre has been carrying out collaborative work with all National MEMS Design Centres across the country with the help of Professors at CeNSE and ECE Departments of Indian Institute of Science (IISc). The area is a multidisciplinary field hence when students and faculty take active part in this research, they get a complete view of different facets of Science and Technology and its applications. This helps in building a connection between industry and academia. The Centre for Nano materials and MEMS at NMIT has been instituted to nurture the research abilities and innovative thinking capabilities among the students and faculty members. The objective is to give knowledge and create awareness on the important facets of different technologies, highlighting the current trends and future directions in multidisciplinary areas like Electronics, Energy, chemical, Civil, Mechanical, Space, Medicine, Health care etc. In the Centre for Nano materials and MEMS (CNM) at NMIT, we have dynamic multidisciplinary group of researchers oriented and working for the objectives, in the following research areas:

- Design, Simulation and Development of Micro-Electro-Mechanical systems (MEMS)
- Thin Film Materials Science and Engineering
- Nano Materials Synthesis for bio sensing applications

CHIEF PATRON**Dr. N R Shetty**

*Hon'ble Chancellor, Central University of Karnataka, Kalaburagi
Chairman, Karnataka State Universities Review Commission, GOK
Former Vice Chancellor, Bangalore University*

ADVISORY COMMITTEE**Dr. H C Nagaraj**

Principal, NMIT

Dr. Sridhar V

Dean Academics, NMIT

Mr. Rohit Punja

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Head and Professor, ECE Dept.

Dr. Vasudha Hegde

Head and Professor, EEE Dept.

Dr. Tengli PN

Professor, Aero Dept.

Dr. Premila Manohar

Professor, EEE Dept.

Registration details:**Last Date for Registration: 4th May 2022**

Online Registration Link:

<https://forms.gle/yaFYiTWf9ZDwGGca7>**Registration Fee: Rs.250/-**

Certificate Criteria:

Minimum 75% Attendance**ORGANISING COMMITTEE**

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of Technology**Account Number: **094010100165396**Name of the bank: **Axis Bank**Branch: **Yelahanka, Bangalore**IFSC Code: **UTIB0000094**

SCAN QR CODE





RECENT TRENDS IN MEMS TECHNOLOGY

5TH AND 6TH, MAY 2022

PROGRAM SCHEDULE

DAY	TIME	SESSION		
DAY 1 (05.05.2022)	10.15-10.30	Inauguration	Ms. Veena S, In-charge CNM, NMIT, Bangalore	Welcome Address
	10.30-11.30	Session 1 - Talk	Dr. Ashok Kumar Pandey, Professor, IIT Hyderabad	Linear and Non-Linear coupling of MEMS
	11.30-11.45	Break		
	11.45-12.45	Session 2 - Talk	Dr. Sujatha. L Professor and Head CEMM, Rajalakshmi Engineering College, Chennai	Large scale integration of polymer micro valve array for Lab on chip applications
	12.45-13.45	Lunch-Break		
	13.45- 14.45	Session 3 -Talk	Dr. Ganapathi, Professor, IIT-Madras	Nano scale devices for emerging Technology
	14.45-15.00	Break		
DAY 2 (06.05.2022)	15.00-16.00	Session 4 -Talk	Dr. B S Sreeja, Professor, SSN College of Engineering, Chennai	MEMS Based RF switches
	10.00-11.00	Session 5 - Talk	Dr. Prita Nair, Professor, Shiv Nadar University, Chennai	Programmable Photonic devices
	11.00-11.15	Break		
	11.15-12.15	Session 6 - Talk	Dr. Veda Sandeep Nagaraja, Senior Scientist II, Tyndall Ireland	The world of Surface acoustic wave devices
		Valedictory	Ms. Nithya G, Assistant Professor, NMIT, Bangalore	Vote of Thanks



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RESOURCE PERSONS



Dr. Ashok Kumar Pandey

Professor, Mechanical and Aerospace Engineering, IIT Hyderabad

Topic of Discussion:

Linear and Nonlinear Frequency Tuning in MEMS

Prof. Ashok Kumar Pandey is currently the Professor in the Department of Mechanical Engineering at Indian Institute of Technology Hyderabad. Before joining the Institute, he completed his Masters and PhD from Indian Institute of Science, Bangalore, and Postdoctoral Research from Technion, Israel. He has worked in the area of Design and Characterization of MEMS structures based on linear and nonlinear analysis of Multiphysics since the last 16 years. While he continues to work in this interesting area which uncovers interesting physics, he has started working in Vehicle Dynamics to explore the application of MEMS based sensors in controlling the performance and safety of conventional as well as autonomous vehicles. He has published over 60 Journal papers and presented over 100 conferences, workshops, and invited talks in India and abroad. He has been awarded with prestigious Hetenyi Award 2010 by Society of Experimental Mechanics, USA and best teaching award in 2012 by IIT Hyderabad.

Dr. L Sujatha

Professor ECE, Head Centre of Excellence in MEMS & Microfluidics

Topic of Discussion:

Large Scale Integration of Polymer Micro valve Array for Lab-On-Chip Applications

Dr. L Sujatha, Head, Centre of Excellence in MEMS & Microfluidics (CEMM) and Professor in the Department of Electronics & Communication Engineering, Rajalakshmi Engineering College (REC), Chennai has 30 years of experience in teaching and research. She Graduated with an A.M.I.E. in Electronics & Communication Engineering from Institution of Engineers (INDIA) in 1991; she obtained her M.E. (Applied Electronics) from Bharathiar University in 1996. She has done her PhD and Post-Doctoral Research in the field of Micro Electro Mechanical Systems (MEMS) at Indian Institute of Technology Madras. She is a recognized supervisor under Anna University and guided 3 research scholars for their PhD degree. She has published three book chapters, 40 journal papers in refereed international journals, more than 60 International Conferences. She had received a "Best Woman Engineer" award from Pondicherry Engineering College in the year 2007 and received "Dr A.P.J. Abdul Kalam Award for Innovative Research" by Society for Engineering Education Enrichment (SEEE) in the year 2017. She is a Life Member of various technical societies such as IEI, ISSS, ISTE, IETE, IEEE and SEEE.





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RESOURCE PERSONS



Dr. K Lakshmi Ganapathi

INSPIRE Faculty, Department of Physics, Indian Institute of Technology Madras (IIT Madras)

Topic of Discussion:

Nano scale Devices for Emerging Technologies

Dr. K Lakshmi Ganapathi received his Ph.D. degree from Indian Institute of Science (IISc), Bangalore, India, in January 2015. He worked as a Research Associate at centre for nano science and Engineering (CeNSE), IISc Bangalore from August 2014 to May 2017. Currently, he is a DST INSPIRE Faculty at the Department of Physics, Indian Institute of Technology Madras (IIT Madras), Chennai, India. His research interests include Nanoscale devices for emerging technologies including electronic (logic and memory), optoelectronic (UV and Broadband photo detectors, and random lasers), quantum technologies, and physics & applications of functional thin films. He is serving as a guest editorial board member in 'Frontiers in Materials' under Quantum Materials section (Quantum and Advanced materials theme).

Dr. B S Sreeja

Associate Professor, Electronics and Communication Engineering

Topic of Discussion:

Scope of RF MEMS devices for 5g and IOT applications

Dr. B S Sreeja is currently Associate professor in Department of ECE at SSN College of Engineering, Chennai. She obtained her M.E and PhD degrees from Sathyabama University in 2004 and 2012 respectively. She has over 17 years of teaching experience and is also a recipient of DST ITS Travel grant 2017. Dr Sreeja have guided over 21 PG students and 6 PhD scholars while a present 10 more PhD scholars have registered themselves. She has published 92 International and 2 national Journal Publications and has over 63 International and 8 national Conference publications. Dr Sreeja has 1 Indian paten granted while she has already filed 7 other patents too. She is member of IEEE and ELAVENIL and a life member of IETE.





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Dr. Prita Nair

Professor, Department of Physics, Shiv Nadar University Chennai

Topic of Discussion:

Programmable Photonic Devices

Dr. Prita Nair obtained her M. Sc in Physics from Cochin University of Science and Technology and PhD in the area of Fiber optics from Indian Institute of Technology Madras. She is a University Rank holder for her M.Sc degree and a recipient of the Laskar Award for Best Thesis in Physics in 1997 from IIT Madras. Dr. Nair has over 22 years of teaching experience, and 7½ years of R&D prior to that executing Defence and Industry sponsored projects in the area of optical fiber networks. During her academic tenure she has supervised 7 PhD's in the area of Silicon Photonics, Optical Communication, Photonic sensors and Acoustic metamaterials. At present she is also guiding 3 more PhD Students in the area of biosensors, photonic devices and laser micromachined devices.

Dr. Veda Sandeep Nagaraja

Senior Scientist, Piezo MEMS group, MNS, Tyndall National Institute, Ireland

Topic of Discussion:

The World of Surface Acoustic Wave Devices

Dr. Veda is currently the senior scientist at Tyndall National Institute, Ireland. She obtained her PhD from Mysore University in the year 2018 and her M. Tech degree in VLSI Design and Embedded systems from Visveswaraya Technological University in 2009. Her area of interests includes MEMS, Analog VLSI, Device Modelling and Device Fabrication. She has 2 patents, 6 Scopus, 5 web of science, 6 Google scholar publications and 2 best paper awards. She has successfully coordinated three rounds of MEMS community chip activity in India and was secretary at ISSS for two years. She is academic council member at Malnad Engineering College. Dr. Veda is a senior member of IEEE and life member of ISSS.

