EMERGING TRENDS IN SOFT AND FUNCTIONAL MATERIALS (ETSFM-2023) 11 Dec. -15 Dec. 2023 DEPARTMENT OF PHYSICS & MATERIAL SCIENCE Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh

India-273010

1. ABOUT FACULTY DEVELOPMENT PROGRAMME

The objective of the programme is to up-grade the knowledge and to enhance the skills of teachers employed in various disciplines of science with a special focus on soft and functional materials, as it is the core of all science and engineering subjects. The FDP will cover common areas of interest to cater the need of faculty members across various disciplines. The academia, researchers and experts from industries will deliver talks to cover various aspects of soft and functional materials and explore their findings on novel functional properties of materials. Deliberations on computational methods such as molecular simulations, density functional theory and other emerging techniques will help faculty members to solve real problems in their respective fields. The FDP will focus on experimental, theoretical and simulation methods currently being widely used by leading scientists of the world. Many fold advancement in new experimental tools and techniques is leading to the exponential growth of science. Computational techniques help us to find new pathways. These methods and techniques give molecular scale insights into the problems, and help scientists to unravel new microscopic phenomena. The amalgam of academia, scientists and researchers from central universities, NIITs & IITs and other research organizations/ industries will offer participants an opportunity to interact with them.

- 2. Topics Covered: Soft Materials: Synthesis Methods and Characterization, Applications, Functional Materials: Synthesis and Characterization, Applications, Bottom-up and Top-down Approaches, Novel Characterization Tools & Techniques, Transformation of ideas in making devices, Challenges due to the scalability, Current and future needs for Soft and Functional materials, Technology for mankind: Biomedical Applications (Imaging and drug delivery), Computational Methods and Techniques: Molecular Dynamic Simulation and Density Function Theory, Nanoscale Phenomena
- 3. Target Audience: Regular and guest faculty members, Research Scholars in AICTE/UGC recognized institutions
- 4. Pre-requisites: NONE
- 5. Time Frame: Five days, Twelve Hours Lectures, Five Hours Interactive Sessions
- **6. No. of Participants:** Regular/Guest Faculty Members: **30** Research Scholars: **30**
- 7. Selection Criteria: First come first serve basis
- **8. Registration Fees:** Regular Faculty Members: **1200 Rs.** Guest faculty/Research Scholars: **500 Rs.**The payment for the registration fees can be made in the form of demand draft drawn in favour of "MMM University of Technology" payable at Gorakhpur or via Net Banking through detail given below A/C No.: **33542824744** Bank Name: **SBI** Branch Name: MMMEC Gorakhpur IFSC code: SBIN0002578 Branch Code: 2578
- **9. Accommodation:** Limited, Can be provided on payment basis

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LECT	ECTURE SCHEDULE DAY-1 to DAY-5 (ETSFM-2023, 11 Dec 15 Dec. 2023) PMSD, MMMUT, GKP				
S No	Date/Day	Lecture No.	Time	Resource Persons/Guests	
1.	11 Dec.	Registration	9.00 am-09.30 am	ITRC, Madan Mohan Malaviya University of Technology, Gorakhpur	
	Day-1	Inauguration Ceremony	09.30 am- 10.30 am	Prof J P Saini, Hon'ble Vice Chancellor Madan Mohan Malaviya University of Technology,	
	Monday	Ceremony		Gorakhpur Chief Guest & Patron	
		High Tea	10.30 am- 11.00 am	Chief Guest & Lation	
		Keynote Address	11.00 am- 12.30 pm	Expert-1	
		Lecture-1		<i>"Crystals and Symmetry"</i> Prof. Rajesh Prasad	
				Head, Department of Material Science and Engineering, IIT Delhi, New Delhi, India	
		Lunch Break	12.30 pm- 2.00 pm		
		Lecture-2	02.00 pm- 3.00 pm	Expert-1 "Anisotropic Elasticity: History, Mystery and a Caution"	
				Prof. Rajesh Prasad Head, Department of Material Science and Engineering, IIT Delhi, New Delhi, India	
		Tea Break	03.0 pm- 03.30 pm	<i>G G</i>)	
		Interactive	03.30 pm- 04.30 pm	Prof. Rajesh Prasad IITD	
		Session-1			
2.	12 Dec.	Lecture-3	10.00 am- 11.00 am	Expert-2	
	Day-2			"Conventional and Unconventional Micro- nanofabrication Approaches for Sustainable Future" Dr. Prabhat K Dwivedi	
	Tuesday			Senior Scientific Officer	
		Tea Break	11.00 am- 11.30 am	Nanoscience Centre, IIT Kanpur	
		Lecture-4	11.30 pm - 12.30 pm	Expert-2	
				"Surface –Enhanced Raman Spectroscopy (SERS) Based Biosensors: An Emerging Tool in Healthcare Dr. Prabhat K Dwivedi	
				Senior Scientific Officer	
				Nanoscience Centre, IIT Kanpur	

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		Lunch Break	12.30 pm- 02.00 pm	
		Lecture-5	02.00 pm- 03.00 pm	Expert-3 "Molecular Modeling Tools in Design and Development of Materials: Applications to Polymers Membranes and Peptides" Dr. Anurag Prakash Sunda Department of Chemistry. J. C. Bose University of Science & Technology, YMCA, Faridabad
		Tea Break	03.0 pm- 03.30 pm	
		Lecture-6	03.30 pm – 4.30 pm	Expert-3 "Molecular Dynamics Simulation using Gromacs Packages: Applications to Liquid Water" Dr. Anurag Prakash Sunda Department of Chemistry, J. C. Bose University of Science & Technology, YMCA, Faridabad
3.	13 Dec. Day-3 Wednesday	Lecture-7	10.00 am- 11.00 am	Expert-4 "Enhancement in Surface Plasmon Resonance Sensor Performance with Functional Materials for Diverse Applications" Prof. Yogendra K Prajapati MNNIIT, Prayagraj, Uttar Pradesh
		Tea Break	11.00 am- 11.30 am	
		Lecture-8	11.30 am - 12.30 pm	Expert-4 "Utilization of Functional Materials for Improvement in Spin Dependent Shift in Optical Sensors" Prof. Yogendra K Prajapati MNNIIT, Prayagraj
		Lunch Break	12.30 pm- 02.00 pm	, , , , ,
		Lecture-9	02.00 pm- 03.00 pm	Expert-5 "A Journey from Eye to Electron Microscopy" Prof. Anchal Srivastava Department of Physics BHU, Varansi
		Interactive Session-2	3.0 pm-4:30 pm	Prof. Y Prajapati
4.	14 Dec. Day-4 Thursday	Lecture-10	10.00 am- 11.00 am	Expert-5 "Nanotechnology: Past, Present and Future" Prof. Anchal Srivastava Department of Physics BHU, Varansi
		Tea Break	11.00 am- 11.30 am	
		Interactive Session-3	11.30 am - 12.30 pm	Prof. Anchal Srivastava

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		Lunch Break	12.30 pm- 02.00 pm	
		Lecture-11	02.00 pm – 3.00 pm	Expert-6 "Electrical and Electrochemical Characterization Techniques" Prof. Prabhakar Singh Department of Physics IIT(BHU), Varanasi
		Interactive Session-4 & Quiz	03.00 pm- 04.30 pm	Expert-6 Prof. Prabhakar Singh
5.	15 Dec.	High Tea	10.00 am- 10.30 am	
	Day-5	Keynote Address	10.30 am- 11.30 am	Expert-6 "Probing ion dynamics and charge transfer
	Friday	Lecture-12		mechanism through Conductivity spectroscopy and Cyclic Voltametry" Prof. Prabhakar Singh Department of Physics IIT(BHU), Varanasi
		Valedictory	11.30 am-12.30 pm	Prof J P Saini, Hon'ble Vice Chancellor Madan Mohan Malaviya University of Technology, Gorakhpur Chief Guest & Patron

MEDIA PARTNER:

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