Faculty Development Program

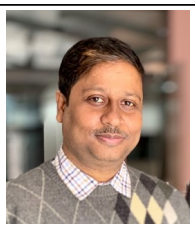
Title : Advanced Functional Materials on Energy and Healthcare Applications

Date : 2025-06-23 - 2025-06-27
Time : 10:00 - 17:30
Venue : MB 210

Event Outcome

- To utilize nanomaterials in energy, sensor, and biogas applications
- Functional materials and their use in healthcare applications
- The role of functional materials for electronics and biomedical applications
- To understand the role of functional materials for bio-sensors and bio-electronics
- To learn the fundamental concept in catalysis and computational innovation

	**Resource Person 1 - Details** **Name :** Senthil Kumar A **Designation :** Professor Higher Academic Grade, CO2 Research and Green Technologies Centre **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 2 - Details** **Name :** Murugavelh S **Designation :** Professor Grade 2, CO2 Research and Green Technologies Centre **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 3 - Details** **Name :** Shankar Raman Dhanushkodi **Designation :** Associate Professor Grade 2, School of Chemical Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 4 - Details** **Name :** Prabhakaran D **Designation :** Professor Grade 1, School of Advanced Sciences **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 5 - Details** **Name :** Professor Ravi Shankaran **Designation :** Professor , National Centre for Nanosciences and Nanotechnology **University/ Company :** University of Madras , Chennai **Address :** India, 600025.
	**Resource Person 6 - Details** **Name :** Dr Kavitha Shankar Narayana **Designation :** Professor, Biotechnology **University/ Company :** Anna University, Chennai **Address :** India, 600025.
	**Resource Person 7 - Details** **Name :** Dr M Sathish **Designation :** Principal Scientist, CECRI **University/ Company :** CSIR Central Electrochemical Research Institute, Karaikudi **Address :** India, 630003.
	**Resource Person 8 - Details** **Name :** Kathirvelan J **Designation :** Professor Grade 1, School of Electronics Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.

	**Resource Person 9 - Details** **Name :** Vijayaraghavan R **Designation :** Professor Higher Academic Grade, School of Advanced Sciences **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 10 - Details** **Name :** Siva R **Designation :** Professor Higher Academic Grade, School of Bio Sciences and Technology **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 11 - Details** **Name :** Prof Satyen Saha **Designation :** Professor, Department of Chemistry **University/ Company :** Banaras Hindu University, Varanasi **Address :** India, 221005.
	**Resource Person 12 - Details** **Name :** Velvizhi G **Designation :** Associate Professor Sr., CO2 Research and Green Technologies Centre **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 13 - Details** **Name :** Madhuri W **Designation :** Professor Grade 1, Centre for Functional Materials **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 14 - Details** **Name :** Dr Elumalai P **Designation :** Professor, School of Green Energy Technologies **University/ Company :** Pondicherry University , Pondicherry **Address :** India, 605014.
	**Resource Person 15 - Details** **Name :** Dr Kavita Joshi **Designation :** Principal Scientist , Physical and Materials Chemistry Division **University/ Company :** CSIR National Chemical Laboratory , Pune **Address :** India, 411008.
	**Resource Person 16 - Details** **Name :** Prof V Dharuman **Designation :** Professor, Biosensor and Bioelectronics Department **University/ Company :** Alagappa University, Karaikudi **Address :** India, 630003.

Resource Person 17 - Details

Name : Amitava Mukherjee

Designation : Professor Higher Academic Grade, Centre for Nanobiotechnology

University/ Company : VIT, Vellore

Address : India, 632014.

Resource Person's Profile :

1. Profile of Senthil Kumar A

Professor Senthil Kumar Annamalai is a Professor of Chemistry and Director of the CO2 Research and Green Technology Centre at Vellore Institute of Technology Vellore. A Fellow of the Royal Society of Chemistry (FRSC) and a Chartered Chemist (CChem, RSC), he has also served on the Advisory Board of Analyst (RSC journal) since 2014. His multidisciplinary research spans nanotechnology, biology, and molecular electrochemistry, with a strong focus on carbon dioxide utilization.

2. Profile of Murugavelh S

Professor Murugavelh is a faculty member at the CO2 Research and Green Technology Centre, Vellore Institute of Technology (VIT), with over 15 years of academic and research experience in heat and mass transfer, and chemical process design. His research focuses on thermochemical conversion, anaerobic digestion, water treatment, transesterification, critical mineral reclamation, and clean energy technologies.

3. Profile of Shankar Raman Dhanushkodi

Dr Shankar Raman Dhanushkodi is an Associate Professor in the Department of Chemical Engineering at VIT, Vellore. An accomplished researcher in the field of fuel cells, electrolysers, and hydrogen systems, he earned his MASc from University of Regina, Ph.D. from the University of Waterloo and completed two postdoctoral fellowships at the University of British Columbia and Queens University, Canada.

4. Profile of Prabhakaran D

Prof. Prabhakaran D is a Professor in the Department of Chemistry, SAS, VIT Vellore. He has completed his PhD from IIT Madras. His area of specialization is (i) Porous Monolith Inorganic-Organic Hybrid Materials as Solid-State Colorimetric Optical Ion-Sensors. (ii) Metal-Organic Frameworks as Porous Templates for Energy and Environmental Applications. (iii) RP-HPLC-based Novel Separation Methodologies for the Isolation and Recovery of Industrially Relevant Heavy Metal Ions.

5. Profile of Professor Ravi Shankaran

Dr D Ravi Shankaran is a Professor in the National Centre for Nanosciences and Nanotechnology, University of Madras. He published 55 publications in reputed journals and papers in national and international seminars, organized and participated in 62 workshops and seminars. His area of specialization are Nanobiomaterials, Nanobiosensors, Waste to Wealth, Nanocarriers, Plasmonics, and Nanoinks.

6. Profile of Dr Kavitha Shankar Narayana

Dr. Kavitha Sankaranarayanan is obtained her PhD from the Tata Institute of Fundamental Research (TIFR) National Centre for Biological Sciences (NCBS). She has then undergone a Department of Biotechnology, Government of India sponsored post doctoral training at NCBS IISc. After working with eminent Cardiothoracic surgeon Padmashree Dr. K. M. Cherian for about 2 years, she is currently heading the Ion Channel Biology Laboratory at the AU-KBC research centre.

7. Profile of Dr M Sathish

Dr. M. Sathish is a Principal Scientist at CSIR-CECRI, Karaikudi, with over two decades of research experience in nanomaterials, photoelectrochemical energy storage and conversion, and environmental remediation. He earned his Ph.D. in Chemistry from IIT Madras in 2006 and completed prestigious postdoctoral fellowships in Japan, including at the National Institute for Materials Science (MANA Fellow), AIST, and Tohoku University (JSPS Fellow).

8. Profile of Kathirvelan J

Prof. Kathirvelan J is a Professor and Former HoD of the Department of Sensor and Biomedical Technology, School of Electronics Engineering, VIT University, Vellore, India.

9. Profile of Vijayaraghavan R

Rajagopalan Vijayaraghavan is currently Senior Professor at the Department of Chemistry, School of Advanced Sciences. He did his Undergraduate and Masters at University of Madras, Doctor of Philosophy at the Indian Institute of Science, Bangalore. He pursued his post-doctoral research at CRISMAT, Paris, France, ICMAB- Barcelona Spain, IIT Madras for about 7 years. He then joined VIT in 2002 and continued his research on Materials Chemistry related to Energy and Environment.

10. Profile of Siva R

Prof. Siva Ramamoorthy is a Professor in the School of Biosciences and Technology (SBST), VIT Vellore. He was a former Dean of the School of Biosciences and Technology, VIT Vellore.

11. Profile of Prof Satyen Saha

Prof. Satyen Saha is a Professor of Physical Chemistry at Banaras Hindu University (BHU), Varanasi, with over two decades of academic and research experience. He earned his Ph.D. from the University of Hyderabad and completed postdoctoral research at the University of Tokyo (JSPS Fellow) and Georgetown University, USA. His research focuses on near-infrared (NIR) emitting materials, photophysical studies of organic and inorganic complexes, ionic liquids, Raman spectroscopy, and DFT.

12. Profile of Velvizhi G

Dr. G. Velvizhi is an Associate Professor in the CO2 Research and Green Technologies Centre, VIT Vellore. Her research area focuses on CO2 sequestration to bio-based products, advanced biological wastewater treatment technologies, and solid waste management.

13. Profile of Madhuri W

Dr. Madhuri W is a Professor in the Department of Physics, SA, VIT Vellore, and current Director of the Centre for Functional Materials, VIT Vellore. Her specialization is in materials research, particularly nanomaterials and crystal growth.

14. Profile of Dr Elumalai P

Dr. Perumal Elumalai received his PhD from Indian Institute of Science Bangalore. He had his post-doctoral research at Kyushu University, Japan for more than six years. He was a recipient of a prestigious JSPS fellowship (Japan Society for the Promotion of Science fellowship). He has won special recognition award for Young Ceramist by Ceramic Society of Japan for his contribution to ceramics applications. He served as HoD of Green Energy Technology, Madanjeet School of Green Energy Technologies

15. Profile of Dr Kavita Joshi

Dr. Kavita Joshi is a Principal Scientist at CSIR National Chemical Laboratory NCL, Pune, with a PhD in Physics from the University of Pune. Following postdoctoral research at CEA Grenoble, France, she held positions at the Centre for Modeling and Simulation before joining NCL in 2010. Her research focuses on computational heterogeneous catalysis, hydrogen storage, CO2 conversion, methanol-to-chemical transformations, and machine learning driven catalyst design.

16. Profile of Prof V Dharuman

Dr. V. Dharuman is an accomplished Associate Professor in the Department of Bioelectronics and Biosensors at Alagappa University, with over 21 years of research experience and 15 years of teaching expertise. His work spans biosensors, nanomaterials, and electrochemical diagnostics, focusing on glucose, DNA, and cancer biomarker sensing. He has guided numerous Ph.D. and postdoctoral scholars and has published over 60 peer-reviewed journal articles with a cumulative impact factor exceeding 390.

17. Profile of Amitava Mukherjee

Dr. Amitava Mukherjee is a Senior Professor and Ex-Director, Centre for Nanobiotechnology, VIT University. He ranked among the top 2 percent of scientists worldwide from 2019 till date. He is also a Fellow of RSC, and RSB since 2016.

The development of advanced functional materials has become pivotal in addressing the pressing global challenges in energy sustainability and healthcare innovation. This Faculty Development Program (FDP) titled Advanced Functional Materials for Energy and Healthcare Applications is designed to provide interdisciplinary insights into the latest trends, breakthroughs, and prospects of material science and its applications across energy storage, conversion technologies, and biomedical solutions. The program will cover a broad spectrum of topics including, but not limited to, nanostructured materials, energy storage systems (such as batteries and supercapacitors), energy harvesting technologies, biomaterials for drug delivery, diagnostic platforms, and tissue engineering. Through expert-led lectures, interactive sessions, and hands-on demonstrations, participants will gain a deeper understanding of the synthesis, characterization, and real-world integration of functional materials. This FDP aims to foster a collaborative platform for faculty from science and engineering backgrounds, encouraging cross-disciplinary engagement and knowledge sharing. Participants will also be exposed to the latest tools, research methodologies, and funding opportunities in this rapidly evolving field, ultimately enhancing their teaching and research capabilities.

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Coordinator's: **Prof. RAMESH KUMAR SINGH 18925 - Assistant Professor Sr. Grade 2 - CO2**
Prof. KAVITHA M.S 12575 - Assistant Professor Sr. Grade 1 - CO2