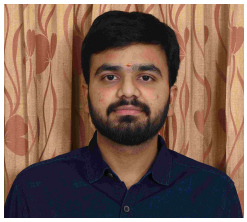
Faculty Development Program

Title : Emerging Trends in Chemical Sciences

Date : 2024-04-01 - 2024-04-05
Time : 10:00 - 17:30
Venue : TT513, TECHNOLOGY TOWER

Discussion Points

- Recent advancements in the field of catalysis will be discussed
- The application of Sophisticated instruments and catalysis will be discussed
- The basics of Raman Spectroscopy will be discussed
- The session will cover the application of Raman spectroscopy in 2D materials characterisation and high pressure studies.
- Recent advancements in Fluorescence molecules will be discussed
- The session will cover the basics of 2D NMR
- This session will cover application of Electroanalytical techniques in various fields of research
- The research progress in the filed of catalysis and Drug Discovery will be discussed
- This session will cover the application and requirements from chemistry areas in the nuclear industry
- This session will cover the various Hydrogen gas sensors developed
- The basics of thermoelectrics will be discussed in this session
- Recent advancements in the area of thermoelectrics will be discussed
- This talk will focus on characterization of gas sensors based materials
- This session will cover the recent efforts in 2D materials-based room temperature gas sensor
- This session will cover the application of chemical sciences in biological studies and recent advancements in biomaterials

	**Resource Person 1 - Details** **Name :** Ekambaram Balaraman **Designation :** Associate Professor, Department of Chemistry **University/ Company :** IISER, Tirupati **Address :** India, 517619.
	**Resource Person 2 - Details** **Name :** P Anbarasan **Designation :** Professor, Department of Chemistry **University/ Company :** IIT Madras, Chennai **Address :** India, 600036.
	**Resource Person 3 - Details** **Name :** Bhuvanesh Srinivasan **Designation :** Assistant Professor, Department of Metallurgy and Materials Engineering **University/ Company :** IIT Madras, Chennai **Address :** India, 600036.
	**Resource Person 4 - Details** **Name :** R Anandan **Designation :** Assistant Professor, Department of Chemistry **University/ Company :** Madras University, Chennai **Address :** India, 600025.
	**Resource Person 5 - Details** **Name :** J Mathiyarasu **Designation :** Chief Scientist, Bio Sensors **University/ Company :** CECRI, Karaikudi **Address :** India, 600036.
	**Resource Person 6 - Details** **Name :** Vinayak Kamble **Designation :** Assistant Professor, Department of Physics **University/ Company :** IISER Trivandrum, Thiruvananthapuram **Address :** India, 695551.
	**Resource Person 7 - Details** **Name :** A Sree Rama Murthy **Designation :** Scientific Officer F, Materials Chemistry Division **University/ Company :** IGCAR, Kalpakkam **Address :** India, 603102.
	**Resource Person 8 - Details** **Name :** Rajaji Vincent **Designation :** Postdoctoral researcher, IMPMC **University/ Company :** Sorbonne University, Paris **Address :** France, 632014.

	**Resource Person 9 - 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 10 - Details** **Name :** Sathiyanarayanan K **Designation :** Professor Higher Academic Grade, School of Advanced Sciences **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 11 - Details** **Name :** Vijayakumar V **Designation :** Professor Higher Academic Grade, School of Advanced Sciences **University/ Company :** VIT, Vellore **Address :** India, 632014.
	**Resource Person 12 - Details** **Name :** Palanisami N **Designation :** Professor Grade 2, Centre for Functional Materials **University/ Company :** VIT, Vellore **Address :** India, 632014.

Resource Person's Profile :

1. Profile of Ekambaram Balaraman

Our research primarily focuses on generating resources for green energy and recycling atmospheric waste. Specifically, our research group work on the design and development of catalytic materials for hydrogen generation from feedstock chemicals, sustainable chemical synthesis, and conversion of CO2 to value-added chemicals. We are also interested in the development of new electron-donors for Ziegler-Natta olefin polymerization catalysis.

B. Sc. (1997-2000): University of Madras, Chennai, India

2. Profile of P Anbarasan

PhD from IISc Bangalore
Masters in chemistry from Madurai Kamaraj University, Madurai
Bachelors in Chemistry from Periyar Arts College, Cuddalore

Research Interests

Transannulation of N - heterocycles
Trifluoromethyl(thiol)ation
Synthesis of natural products

3. Profile of Bhuvanesh Srinivasan

Bachelors in Materials Engineering

College of Engineering Guindy (CEG)
Anna University, Chennai

Ph.D. in Materials Science

Marie Curie Fellow

CNRS-University of Rennes 1 France

Secondment periods Nanoforce Technology Ltd Queen Mary University London, UK

Research Interests:
Thermoelectric Materials and Devices
Thermoelectric Metrology
Magnetic Refrigeration
Powder Metallurgy

4. Profile of R Anandan

Dr. R. Anandhan is Assistant Professor in the Department of Organic Chemistry, University of Madras. He has graduated in Published 27 publications in Indian and international journals and papers in national and international seminars, organized and participated in 5 workshops and seminars. His area of specialization is Visible light mediated Organic transformations, Electroorganic Synthesis, and Asymmetric Catalysis and Supramolecular chemistry.

5. Profile of J Mathiyarasu

The research mainly involved in the fundamental investigations concerning electrochemical bio sensors based on integrated micro and nanostructures and nanocomposites, where electrochemical reactions are used to manipulate and quantify very small amounts of compounds. It is further involved in the development of novel electrochemical sensing approaches or creating novel sensing platforms based on the combination of nanomaterials with electronically conducting polymers.

6. Profile of Vinayak Kamble

Member, Indian National Young Academy of Sciences (INYAS) 2023
Rising star in Materials Science 2023 by ACS Au
DST INSPIRE faculty Award 2016.
Best Poster presentation award at Nano to Giga challenges in Electronics, Photonics and Renewable Energies, NGC-2014 held at Arizona State University, Phoenix, USA.

Nanostructures and thin films,
Surfaces and Interfaces,
Defect induced transport properties of materials,
Dilute Magnetic Semiconductors,
Thermoelectric materials
Solid state Gas Sensors

7. Profile of A Sree Rama Murthy

Sree Rama Murthy A. currently works at the Materials Chemistry Division (MCD), Indira Gandhi Centre for Atomic Research. Sree Rama Murthy does research in Materials Science, Chemical sensors. Their current project is 'Metal oxide sensors.

8. Profile of Rajaji Vincent

I am an experimental researcher with a specialization in high-pressure science. Presently, I am working as a postdoc at the PHYSIX team, IMMC, Sorbonne University, Paris. I am a highly motivated experimental research scientist. I have strong work experience in various high - quality international research laboratories with eminent scientists. My research interests primarily center around investigating exciting physical systems (materials) using thermodynamic parameters, particularly pressure.

9. Profile of Senthil Kumar A

Dr. SENTHIL KUMAR A
Professor Higher Academic Grade
Department of Chemistry
Director CO2 Research and Green Technologies Centre

10. Profile of Sathiyanarayanan K

Dr. SATHIYANARAYANAN K
Professor Higher Academic Grade
Department of Chemistry
School of Advanced Sciences

11. Profile of Vijayakumar V

VIJAYAKUMAR V
Professor Higher Academic Grade
Department of Chemistry
School of Advanced Sciences

12. Profile of Palanisami N

Dr. Palanisami is a professor at the centre for Functional Materials. He obtained his Ph.D. from IIT Mumbai. He was visiting research professor-Brain Pool Fellowship (2013-2014) at Korean Federation of Science and Technology (KOFST), Suncheon National University in South Korea. He has been awarded with outstanding Reviewer by The Editors of Inorganic Chemistry Communications

The planned event consists of lectures given by well-known researches working in emerging areas of chemical sciences. Each session by the resource person will have basics and application of the sophisticated techniques used in the respective field.

The lectures are planned in the below mentioned research areas thermoelectric materials, gas sensors, basics of Raman spectroscopy, application of Raman spectroscopy in characterisation of 2D materials, catalysis and organic semiconductors. These proposed high-quality lectures will be highly beneficial for our faculty to get exposure in the recent emerging research areas.

Nil

Coordinator's: **Prof. RAJASEKAR P 16213 - Assistant Professor Grade 1 - SAS**
Prof. CHARLES BEROMEO BHEETER 15982 - Assistant Professor Grade 1 - SAS