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INSTITUTO DE
CIENCIAS
FÍSICAS



Five-Day International Workshop on

Sophisticated Instrumentation Techniques (ISIT)

in association with Institute of Physical Sciences (ICF)-National Autonomous University of Mexico (UNAM)

March 17-21, 2025

Venue: Online (Google Meet)



About the workshop:

The five day International Workshop on Sophisticated Instrumentation Techniques (ISIT) organized by the Department of Chemistry, School of Advanced Sciences, VIT-AP University in association with the “Institute of Physical Sciences (ICF)-National Autonomous University of Mexico (UNAM)” aims to support the students, PhD scholars, postdoctoral researchers, faculty members, and industrialists from around the world who are working in the field of materials science by showcasing the latest advancements in the sophisticated analytical techniques in advanced sciences. Experts from academia and industry will demonstrate the principles, working mechanisms, and applications of various advanced instruments in research and industrial settings. Participants will gain practical experience in sample preparation, data interpretation, and troubleshooting of common issues.

Salient Features:

- Cluster of sophisticated instruments in one forum
- Significance of each instrument for research & live demo by application scientists and eminent professors on
 - X-Ray Diffractometer (XRD)
 - Nuclear Magnetic Resonance Spectrometer (NMR)
 - Field Emission Scanning Electron Microscope (FE-SEM)
 - Transmission Electron Microscope (TEM)
 - Atomic Force Microscope (AFM)
 - X-ray Photoelectron Spectrometer (XPS)
 - X-ray Fluorescence Spectrometer (XRF)
 - Raman Spectrometer
 - Thermogravimetric and Differential Scanning Calorimeter (TG-DSC)
 - Electrochemical workstation
 - Spectrofluorimeter
 - Laser-Induced Breakdown Spectrometer (LIBS)

Who can attend:

- B.Sc./B.Tech., M.Tech./M.Sc./M.S. students
- PhD scholars, Academicians and Researchers specializing in chemistry, physics and materials science
- Industry professionals working for scientific applications

E-certificate for participation

Registration fee details:

- Student (National) : Rs. 500.00
- Faculty/Industry Personnel (National) : Rs. 750.00
- Student (International) : USD 10.00
- Faculty/Industry Personnel (International): USD 15.00
- Last Date for Registration : **10th March 2025**

Registration Link: <https://tinyurl.com/yc82dk89>



Resource Persons

Day 1 (17.03.2025, Monday)

Forenoon

Inauguration



Chief Guest
Dr. T. Gnanasekaran
Editor, Journal of Alloys and Compounds, Elsevier
Former Associate Director
Chemistry Group, IGCAR
Former DAE Raja Ramanna Fellow



Keynote Lecture
Dr. V. Jayaraman
Director, Materials Chemistry & Metal Fuel Cycle Group,
Indira Gandhi Centre for Atomic Research (IGCAR),
Kalpakkam, INDIA

**Talk: Neutron Activation Analysis:
A powerful analytical tool.**



Dr. Rakesh Ganguly
Associate Director,
IQAC Coordinator, Office of Accreditation and Regulatory Affairs,
Vice Chancellor Office, Shiv Nadar University – Delhi NCR

**Talk: Introduction to Single Crystal X-Ray Diffraction (SCXRD):
Techniques, Applications and Challenges.**

Afternoon



Dr. Prathapa Siriyara Jagannatha
Application Scientist of
Single Crystal-XRD &
Product Manager,
Bruker India Scientific Pvt Ltd.

**Talk: Single Crystal X-Ray
Diffraction (SCXRD):
Applications and demonstration of
APEX6 software.**



Dr. Purushottam Sutar
Application Scientist, Product &
Business Development Manager
South Asia Region
Hitachi High-Tech India Pvt. Ltd.

**Talk: Exploring Hitachi Liquid
Chromatography Products and
Solutions in Separation Science.**

Day 2 (18.03.2025, Tuesday)

Forenoon



Dr. Victor Ulises Lev Contreras
Professor,
ICF-UNAM, Mexico

Talk: Laser-induced breakdown spectroscopy (LIBS) applied on dissolved metals in water through acoustic levitation sampling.



Dr. Chandrashekar N
Applications Scientist and
Head of Bruker Academy,
Bruker India Scientific Pvt. Ltd.

Talk: Basics of NMR spectroscopy and its applications.

Afternoon



Dr. Arvind Barak
Applications Scientist,
Renishaw India

Talk: Renishaw's Raman microscope and its applications.



Dr. Manohar Rao
Product Line Leader for
Material Characterization,
PerkinElmer India

Talk: PerkinElmer's hyphenating thermal and spectroscopic techniques for material analysis.

Day 3 (19.03.2025, Wednesday)

Forenoon



Dr. Tathagata Kar
Scientist, ICF-UNAM, Mexico

Talk: The use of potentiostats for electrochemical measurements.



Dr. Aashish. A
Application Scientist,
BioLogic, Bangalore, India

Talk: Potentiostat/ Battery Cyclers: Its use in Science & Industry.

Afternoon



Dr. Ravikumar Iyyamperumal
Application Scientist,
Bruker India Scientific Pvt. Ltd.

Talk: X-ray Diffraction: Principles and Applications in Material Science.



Dr. Annamalai Senthil Kumar
Professor & Director,
CO2 Research and
Green Technologies Centre,
Vellore Institute of Technology (VIT),
Vellore, India

Talk: Introduction and Application of X-Ray Photoelectron Spectroscopy for Atomic Species Identification.

Day 4 (20.03.2025, Thursday)

Forenoon



Dr. Naveen Kumar Reddy Bogireddy
Scientist, ICF-UNAM, Mexico

Talk: Photoluminescence Spectroscopy: Introduction and Applications.



Mr. Dhiraj Sinha
Inorganic Product Line Leader,
Elemental Spectroscopy,
PerkinElmer India

Talk: Emerging trends in ICP-MS for heavy metal and trace element analysis.

Afternoon



Dr. Eva Dvorakova
Application Specialist –
Material Science
TESCAN GROUP,
Czech Republic

Talk: UHR SEM Tescan Clara - product introduction and live demonstration of field-free microscope capabilities.



Dr. Solene Valton
Research and software engineer,
RX Solutions, France

Talk: X-ray Micro-CT, a broadband analytical and scientific instrument for science and engineering.

Day 5 (21.03.2025, Friday)

Forenoon



Dr. Ruben Mendoza Cruz
Scientist, ICF-UNAM, Mexico

Talk: Transmission Electron Microscopy: Fundamentals and applications.



Dr. Sambhav Kumbhani
Application Scientist,
Panalytical India

Talk: XRF: A Technique for Elemental Analysis, useful in host of applications.

Afternoon



Mr. Kishore Kumar S E
Application Scientist
Park Systems India

Talk: Park systems AFM and its recent techniques: Demonstration of an autonomous FX40 AFM.



Guest
Dr. Rajesh Ganesan
Scientist & Head,
Materials Chemistry Division,
Materials Chemistry &
Metal Fuel Cycle Group
Indira Gandhi Centre for
Atomic Research, Kalpakkam, INDIA

Valedictory

About the Department of Chemistry:

Department of Chemistry offers M. Sc. Chemistry program at VIT-AP University. This programme provides ample opportunities for the students to choose courses from a broad spectrum of cutting-edge areas in addition to fundamentals of organic, inorganic, physical, analytical and computational chemistry. Sessions on improving technical skills, scientific writing, oral presentations and research expertise have been incorporated in the curriculum. Furthermore, the students will have the scope to pursue their post-graduation thesis work at various national and international institutions and industries. Overall, by integrating the in-depth core and elective courses, and research work, instructed and guided by highly qualified and well-experienced faculty members, students will gain the foundation and skill to advance their careers in higher studies and industry.

Programs offered:

- M.Sc. Chemistry in collaboration with Mitsui Kinzoku Components India Pvt. Ltd. (MKCI)
 - M.Sc. Chemistry
 - M.Sc. Chemistry (Specialization in Pharmaceutical Chemistry)
 - M.Sc. Chemistry (Specialization in Analytical Chemistry)
- Ph. D. Chemistry
- Internship, placement and higher studies opportunities for the M.Sc. students in reputed companies, national and international universities.
- 100% students from the previous academic years have secured internships and placements in various renowned industrial and academic organizations such as, Zifo, Aurobindo Pharma, Cipla, Mitsui Kinzoku Components India Pvt. Ltd., Microlabs Pvt. Ltd., Tina Life Science (through RSC), Cresen Solutions, LatentView Analytics, IIT, IISc, NIT, IICT, JNCASR etc.

Scholarships: 100% scholarship opportunity for M.Sc. Chemistry students

- **G.V. PG Merit Scholarship:** 100% Full Merit scholarship to a candidate who has secured CGPA of 9.0 or 90% and above (whichever is applicable) in the 6 Semesters/ Three Years of the qualifying UG examination
- **Rajeswari PG Merit Scholarship:** 50% scholarship to a candidate who has secured CGPA of 8.0 or 80% and above in the qualifying UG program and an additional 25% for a girl candidate making it a 75% scholarship.

Areas of Innovation and Research in the Department of Chemistry:

- Nanomaterials
- Organic Chemistry
- Energy materials
- Catalysis
- Environmental Chemistry
- Inorganic Chemistry
- Physical Chemistry
- Bio vaccination
- Supramolecular Chemistry
- Computational chemistry
- Neurobiology



Research at VIT-AP:

VIT Fellowship for PhD students	GATE Qualified (Above 60% in PG)	Others
First Year	Rs.35,000/Month	Rs.31,000/Month
Second and Third Year	Rs.40,000/Month	Rs.35,000/Month

- Raman Research Award up to 1 lakh for publications exclusively for research scholars
- Contingency amount of Rs. 10,000 per year for all Scholars
- Open access research publication support for Q1 and Q2 Journals
- Financial support for attending conferences/workshop/training etc.
- External funded projects (More than Rs. 2 Cr)
- Skill development-oriented curriculum
- Global collaborations with various reputed academic, research institutes and industries
- More than 20 projects funded by the university to the SAS faculties and students
- The department has more than 20 faculties, all with Ph. D.s and Postdocs from top-tier global universities
- Diverse mix of national and international students

Organizing Committee:

Advisors

Prof. S. Srinivas (Dean, SAS, VIT-AP University)

Dr. M. Rajanikanth (Associate Dean, SAS, VIT-AP University)

Dr. I. Ramakanth (HoD, Department of Chemistry, VIT-AP University)

Dr. Juan Carlos Hidalgo Cuellar (Director, ICF-UNAM)

Convenors

Dr. Pratheep Kumar (Associate Professor, Department of Chemistry, VIT-AP University)

Dr. Mohan Kumar Kesarla, Scientist, Materials Science Laboratories, Institute of Physical Sciences (ICF)-National Autonomous University of Mexico (UNAM)

Co-convenors

Dr. Rajarshi Sarkar (Associate Professor, Department of Chemistry, VIT-AP University)

Dr. Dripta De Joarder (Associate Professor, Department of Chemistry, VIT-AP University)

Dr. Triveni R. Mandlimath (Asst. Professor, Department of Chemistry, VIT-AP University)

Dr. Debakanta Tripathy (Asst. Professor, Department of Chemistry, VIT-AP University)

Dr. V V Sreenivasu M (Asst. Professor, Department of Chemistry, VIT-AP University)

Dr. Bibhab Bandhu Mazumdar (Asst. Professor, Department of Chemistry, VIT-AP University)

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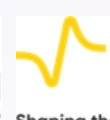
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