

## DEPARTMENT OF CHEMISTRY

### SCHOOL OF PHYSICAL AND CHEMICAL SCIENCES

#### “Hands-on Training on Instrumentation with Interpretation”

Date: 03.07.2024 to 05.07.2024

Time: 9.30 am to 4.00 pm



Workshop on

## HANDS-ON TRAINING ON INSTRUMENTATION WITH INTERPRETATION

3<sup>rd</sup> to 5<sup>th</sup> July 2024

### About the Department

- Department of chemistry offers M.Sc. & Ph.D in Chemistry from the year 2010
- 2 dedicated Research lab and a Sophisticated Instrumentation lab
- Institute JRF for Ph.D Scholars
- 17 Faculties with International Research experience/ Industrial Experience

### About the M.Sc. Chemistry Program

- 2 years Full-time Program
- One month Internship in Research Institutes/ Industries/Academic Institutions
- Final semester dedicated for project (Individual)
- Project can also be done in Research Institutes/ Industries across India
- CSIR/GATE coaching and hands on training on Instrumentation
- Placement in Industry across India

### About the Program

The Department of Chemistry is organizing a comprehensive Hands-on Training on Instrumentation with Interpretation, scheduled from 3<sup>rd</sup> to 5<sup>th</sup> July, 2024. This workshop is specially designed for UG & PG students, research scholars and faculty, who are eager to enhance their practical skills and theoretical knowledge in modern chemical instrumentation.

### Objective of the Program

The primary objective of this intensive training program is to bridge the gap between academic learning and practical application. By providing hands-on experience with advanced instrumentation, we aim to:

- Equip participants with the necessary skills to operate sophisticated instruments used in chemical analysis and research.

- Enhance the understanding of the principles, applications, and limitations of various analytical techniques.
- Develop the ability to accurately interpret and analyze data obtained from various instruments.
- Foster a research-oriented mindset among students and faculty members.
- Encourage students to undertake independent research projects, thereby preparing them for future scientific careers.

### General Information

Registration Fee:

UG/PG Students: Rs. 750 | Research Scholar: Rs. 1000

Faculty/Industry: Rs. 1500

\*Accommodation on request with nominal charges

### Bank Details

Name of Account Holder: Registrar B. S. Abdur Rahman

Crescent Institute of Science and Technology

Account Number: 165702000000440

Bank Name: Indian Overseas Bank Branch Name Vandakur,

Chennai - 48

Account Type: Current Account

IFSC Code / MICR No.: 10BA0001657 / 600020102

### Registration Link

<https://forms.gle/g9Wga9D5EVSKGVoS7>

Scan QR for  
Registration



### Conveners

Dr. N. Hajarabeevi  
HOD/Chemistry

Dr. I. Raja Mohammed  
Dean(SPCs)

### Coordinators

Dr. Revathi Purushothaman  
Prof (+91 98409 91630)

Dr. K. Karthikeyan  
Assoc Prof (+91 98404 22604)

## ABOUT THE PROGRAM

The purpose of the three-day workshop is to train undergraduate and post graduate students, research scholars, faculty members of arts & science and engineering colleges, and industry personnel on analytical instrumentation with interpretation. The workshop aims to provide knowledge on FTIR, DRS-UV, Gas chromatography and electrochemical workstation techniques in the fields of science and technology. It is intended to serve as an introduction to the use of analytical techniques for various applications, with an emphasis on the use of modern instruments to acquire pertinent data. The workshop also aims to provide practical insight into various aspects and to train participants in the proper interpretation of data.

The session details and programme schedule are given below:

### Programme Schedule

Day	Time	Batch 1	Batch 2	
03-07-2024	10.00 - 10.30 am	Inauguration		
	10.30 – 10.45 am	Tea Break		
	10.45 – 11.45 am	Lecture on GC Analysis		
	11.45 am – 12.45 pm	Lecture on DRS-UV Spectroscopy		
	12.45 – 1.45 pm	Lunch Break		
	1.45 – 4.00 pm	Hands-on Training on Gas Chromatography and DRS-UV (LAB)	Interpretation of NMR spectra (EEE seminar hall)	
04-07-2024	9.30 – 10.45 am	Lecture on FT-IR		
	10.45 – 11.00 am	Tea Break		
	11.00 am – 12.30 pm	Lecture on Electrochemical workstation		
	12.30 – 1.30 pm	Lunch Break		
	1.30 – 4.00 pm	Interpretation of NMR spectra (EEE seminar hall)	Hands-on Training on Gas Chromatography and DRS-UV (LAB)	
05-07-2024	9.30 – 11.00 am	Interpretation of FT-IR spectra (EEE seminar hall)	Hands-on Training on Electrochemical workstation and FT-IR (LAB)	
	11.00 -11.15 am	Tea Break		
	11.15 am – 12.45 pm	Hands-on Training on Electrochemical workstation and FT-IR (LAB)	Interpretation of FT-IR spectra (EEE seminar hall)	
	12.45 – 2.30 pm	Lunch Break		
	2.30 - 4.00 pm	Discussion and Valedictory function		

## ABOUT THE SPEAKERS AND TOPICS

- Dr. R. Sasikumar, Assistant Professor, Department of Physical Chemistry, University of Madras, Guindy Campus, Chennai – 600025; Lecture on Electrochemical workstation.
- Dr. Revathi Purushothaman, Professor, Department of Chemistry, BSACIST; Lecture on GC Analysis.
- Dr. J. Herbert Mabel, Associate Professor, Department of Chemistry, BSACIST; Lecture on FT-IR.
- Dr. Noor Aman, Associate Professor, Department of Chemistry, BSACIST; Lecture on DRS-UV Spectroscopy.
- Dr. K. Karthikeyan, Associate Professor, Department of Chemistry, BSACIST; Lecture on NMR spectroscopy with interpretations.

## Report on the Hands-on Training on Instrumentation with Interpretation

- The Hands-on Training on Instrumentation with Interpretation (03.07.2024 – 05.07.2024) commenced with an inauguration starting with a welcome address by Dr. N. Hajarabeevi, Head of the Department and Professor of Chemistry, who warmly greeted the participants and dignitaries. Following this, Dr. Revathi Purushothaman, Professor of Chemistry provided an overview of the program, highlighting its objectives, key topics, and the significance of hands-on training in analytical instrumentation. She emphasized the importance of practical exposure to advanced techniques in scientific research and industrial applications. Dr. S. Kutti Rani, Professor of Chemistry and Director of PG Admissions felicitated and Dr. I. Raja Mohamed, Professor of Physics and Dean, SPCS, delivered the Presidential Address.
- Following the inaugural ceremony, the speakers delivered thematic lectures on various topics as per the schedule. All the lectures were highly informative and engaging for the participants.



- During the Hands-on Training sessions, participants were exposed to a variety of advanced analytical techniques, including Fourier Transform Infrared Spectroscopy (FTIR), Diffuse Reflectance Spectroscopy in the Ultraviolet-Visible region (DRS-UV), Gas Chromatography (GC), Electrochemical Workstation techniques, and Nuclear Magnetic Resonance (NMR) Spectroscopy with Interpretations.



- The training sessions provided both theoretical insights and practical exposure, allowing participants to understand the working principles, applications, and data interpretation of each technique. Under the mentorship of expert faculty members and research scholars, participants were guided through the experimental procedures and encouraged to perform hands-on analyses. This interactive approach enabled them to gain confidence in handling sophisticated instrumentation, interpreting spectral data, and applying these techniques in research and industrial applications effectively.



- The valedictory program of the three-day workshop was conducted on 05.07.2024. Certificates of participation were distributed to the participants by Dr. I. Raja Mohamed, Professor of Physics and Dean, SPCS, Dr. S. Kutti Rani, Professor and Director (PG Admissions), and Dr. N. Hajarabeevi, Head of the Department of Chemistry. The vote of thanks was proposed by Dr. K. Karthikeyan, Department of Chemistry. The organizers expressed their heartfelt gratitude for the valuable insights and information shared during the workshop.

## Outcomes of the Hands-on Training on Instrumentation with Interpretation

The three-day Hands-on Training on Instrumentation with Interpretation provided participants with valuable insights into various analytical techniques and their practical applications. The key outcomes of the program include:

- Introducing participants to the principles and applications of advanced analytical techniques such as FTIR, DRS-UV, Gas Chromatography (GC), Electrochemical Workstation techniques, and Nuclear Magnetic Resonance (NMR) Spectroscopy.
- Emphasizing the use of state-of-the-art instrumentation to acquire and analyze experimental data effectively.
- Offering in-depth knowledge of the practical aspects of instrumental techniques and their significance in research and industrial applications.
- Providing hands-on training sessions, allowing participants to familiarize themselves with sophisticated instruments and complement their theoretical learning with practical experience.
- Highlighting the importance of accurate data interpretation and analysis for scientific research, quality control, and industrial problem-solving.
- The training successfully bridged the gap between theoretical knowledge and practical application, equipping participants with essential skills to enhance their research capabilities and professional expertise.

