



**In Commemoration of the Platinum Jubilee Year of The New College and
The PG & Research Department of Chemistry**

**PG & Research Department of Chemistry
Presents**

SECAI-Chem 2026

**Hands-on Workshop on Spectroscopy,
Electrochemistry, Computational Tools
and AI in Chemistry**

09
JANUARY
2026



MIIT HALL

The New College Campus, Chennai

Organized by

**PG & Research Department of Chemistry
THE NEW COLLEGE**

(State Govt. Aided Autonomous Institution, Affiliated to the University of Madras)
Re-accredited by NAAC with "A++" Grade in the 4th Cycle
Peters Road, Royapettah, Chennai – 600014, Tamil Nadu, India.

About the College

The New College was established in 1951 in Chennai by the Muslim Educational Association of Southern India (MEASI). It was started to give better higher education opportunities to the Muslim community while welcoming students from all communities.

The college began on 2nd July, 1951 in Royapettah and was named after The New College of Oxford University. It started with Pre-University courses, added UG programmes in 1956 and its first PG programme (M.A. Arabic) in 1965. Today, it offers 29 UG, 15 PG, 7 M.Phil. and 11 Ph.D. programmes in two shifts with over 6,500 students. The college became autonomous in 2007, has a NAAC A++ grade (CGPA 3.61).

The IQAC ensures quality education. Social service activities are carried out through NSS, NCC, Rotaract, Youth Red Cross and other clubs. The college has adopted five villages under the Unnat Bharat Abhiyan scheme. Career guidance is supported by a Placement Cell, Employability Skills course and Competitive Examination Cell.

Facilities include a hostel for 550 students, a library with 1.4 lakh books, digital resources and sports infrastructure. Students who excel in sports get free education and accommodation. The college also promotes green initiatives such as rainwater harvesting, solar power, herbal gardens and e-governance. With strong alumni support and its Incubation and Entrepreneurship Centre, The New College remains a leading educational institution in South India.

About the Department

The PG & Research Department of Chemistry at The New College was started in 1951. It became a postgraduate department in 1972 and a research department in 1976. Today, it is the largest science department in the college.

The department has 22 faculty members (20 with Ph.D., 2 NET and 5 SET qualified) and offers UG, PG and Ph.D. programmes with over 183 students. Under autonomy, it has introduced a revised syllabus, internship and project work for PG students. It also runs skill-based and entrepreneurship courses, organizes industrial visits and has MoUs with two leather industries.

Research is a major strength of the department. There are 8 recognized research guides, 54 Ph.D. scholars produced and 268+ research papers published in reputed journals. The department has its own library and received ₹30 lakhs from DST-FIST for improving infrastructure. Along with academics, the department regularly hosts seminars, workshops, conferences and cultural and sports events like NEWTRON and NEW CHEM SPORTS, encouraging overall student development.

About the Workshop

This hands-on workshop, SECAI-Chem 2026: Hands-on Workshop on Spectroscopy, Electrochemistry, Computational Tools and AI in Chemistry, aims to give participants practical training in key instrumental and computational techniques used in modern chemical research. It combines spectroscopy, electrochemistry and digital tools to strengthen research skills, data interpretation and technical confidence.

The UV-Vis and IR spectroscopy sessions will train participants to collect and interpret spectral data to study molecular structures and functional groups, useful in materials science, organic synthesis and environmental research. The cyclic voltammetry module will give hands-on experience in studying redox processes and reaction kinetics with applications in energy, sensor technology and material science. Participants will also learn to use ChemSketch and Origin for chemical structure drawing, data analysis and scientific documentation, helping them to present their work effectively. The AI in chemistry session will introduce machine learning tools for predictive coating analysis and corrosion monitoring, showing how data-driven models can improve research accuracy and efficiency.

Overall, this workshop is structured to bridge theoretical concepts and practical skills and thereby helping students, researchers and professionals gain hands-on experience, technical confidence and digital competency. By attending, participants will be better equipped to conduct independent research, analyse data effectively and keep pace with emerging trends in chemical sciences.

UV-VIS & IR SPECTROSCOPY

THEORETICAL SESSION



Dr. X. JANET SABINA

*Assistant Professor of Chemistry & IQAC
Core Member, Stella Maris College
(Autonomous), Chennai*

Topic : SPECTROSCOPY TECHNIQUES

Highlights:

- Understand the principles of UV-Vis and IR spectroscopy.
- Learn about instrumentation and its working.
- Gain skills to interpret spectral data effectively.
- Identify functional groups using spectral analysis.

PRACTICAL SESSION

Dr. A. SHANAVAS

*Assistant Professor of Chemistry,
The New College, Chennai*

Dr. A. MOHAMMED IBRAHIM

*Assistant Professor of Chemistry,
The New College, Chennai*

Topic : UV & IR SPECTROSCOPY

Highlights:

- Receive hands-on training in operating an UV & IR spectrometer.
- Learn to collect and record UV & IR spectra accurately.
- Develop skills to analyse peak data for various chemical applications.

COMPUTATIONAL TECHNIQUES

THEORETICAL & PRACTICAL SESSION



Dr. K. CHENNAKESAVULU

*Professor, Department of Chemistry,
Sathyabama Institute of Science and
Technology (Deemed to be University), Chennai.*

**Topic : EXPLORING CHEMICAL STRUCTURES
WITH CHEMSKETCH AND ORIGIN
SOFTWARE**

Highlights:

- Receive hands-on training in using ChemSketch for molecular structure drawing
- Learn to use Origin 8.0 for data analysis and visualization
- Gain skills in scientific documentation and publication-quality figure preparation

AI APPLICATIONS IN CHEMISTRY

THEORETICAL & PRACTICAL SESSION



Mr. R. VIGNESH

*Research Scholar
Dr. T. M. Sridhar,
Assistant Professor & Head i/c,
Department of Analytical Chemistry,
University of Madras, Guindy Campus, Chennai*

**Topic : APPLYING MACHINE LEARNING TOOLS
FOR PREDICTIVE COATING ANALYSIS
AND CORROSION MONITORING**

Highlights:

- Understand the basic principles of AI and ML applications in chemical sciences
- Learn how predictive modelling can be used to assess coating performance and corrosion behaviour
- Gain hands-on exposure to ML tools for analysing experimental data

CYCLIC VOLTAMMETRY

THEORETICAL SESSION



Dr. T. MARY VERGHEESE

*Associate Professor of Chemistry, Madras
Christian College (Autonomous), Chennai*

**Topic : CYCLIC VOLTAMMETRY - A VERSATILE
ELECTRO ANALYTICAL TECHNIQUE**

Highlights:

- Understand the fundamentals of cyclic voltammetry (CV) and its role in electrochemical analysis.
- Learn the working principle, instrumentation and significance of redox reactions
- Gain knowledge on interpreting voltammograms to study reaction kinetics and electrochemical reversibility.

PRACTICAL SESSION

Dr. U. MUHAMMED RAFI

*Assistant Professor of Chemistry,
The New College, Chennai*

**Topic : HANDS-ON CV EXPERIMENT AND
DATA INTERPRETATION**

Highlights:

- Operate a three-electrode system (Glassy Carbon, Ag/AgCl, Pt).
- Record CV for 5 mM $K_3[Fe(CN)_6]$ in 0.1 M KCl at 50mV/s.
- Identify and analyse peak potentials and currents.
- Learn baseline correction, electrode cleaning and scan rate effect.
- Build confidence in experimental setup, data acquisition and interpretation for various applications.

ORGANIZING COMMITTEE

CHIEF PATRONS

Janab IMTHIAZ PASHA
HONY. CHAIRMAN

Janab M. NAZAR MOHAMED
OFFICIATING SECRETARY

Janab S. M. A. MOHAMMED SALEEM
HONY. TREASURER

PATRONS

Janab ASHFAQUE MECCA
CONVENER, THE NEW COLLEGE

Dr. M. ASRAR SHERIFF
PRINCIPAL

CHAIRPERSON

Dr. M. A. MOHAMED MUSTHAFA
Associate Professor and Head,
PG & RESEARCH DEPARTMENT
OF CHEMISTRY

ORGANISING SECRETARY

Dr. A. SHERIF

CONVENER

Dr. A. Sheik Mideen

CO-CONVENERS

Dr. M. Mohamed Hanipha
Dr. N. Mohamed Basith

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Dr. U. Muhammed Rafi
Dr. A. Shanavas
Dr. A. Mohammed Ibrahim
Mr. M. Mohamed Haneef
Dr. T.K.S. Fayaz
Mr. A. K. Raees Ahmed
Mr. Z. Waseem Basha

REGISTRATION DETAILS

Registration and Payment Details
(Includes Registration Kit, Certificates,
Refreshments and Lunch)

CATEGORY

AMOUNT

PG Students & Research Scholars	Rs. 500
Academician and Scientists	Rs. 750

IMPORTANT DATES

Registration opens	06-10-2025
Registration closes	20-12-2025

PAYMENT DETAILS

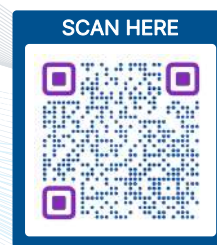
UPI ID PPQR01.TLPSZY@iob

BANK DETAILS

Bank Name	INDIAN OVERSEAS BANK
Bank A/C Name	THE PRINCIPAL THE NEW COLLEGE
Account No.	033401000050399
IFSC Code	IOBA0000334
Bank Branch	PETERS ROAD, ROYAPETTAH - CHENNAI

TARGET AUDIENCE

- PG Students and Young Researchers
- Researchers and Scientists from Academia and Industry



REGISTRATION



PAYMENT

[CLICK HERE TO REGISTER](https://forms.gle/22anU7AdW7ZTXFeM6)

Registration Form Link - <https://forms.gle/22anU7AdW7ZTXFeM6>

After the payment is made, the participants need to share their payment receipt to the following email id

chemistry-events@thenewcollege.edu.in

ADDRESS FOR CORRESPONDENCE

Dr. A. SHERIF

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