

GTN ARTS COLLEGE (AUTONOMOUS)

DEPARTMENT OF CHEMISTRY

DBT REPORT

(2024 – 2025)

Department of Chemistry Activities for AY 2024 - 2025

S. No.	Programme Type	Programme Title	No. of Programme	Date
1	Guest Lecture	Exploring Advanced Opportunities in Chemistry: Pathways after B.Sc.,	2	20.09.2024
	Guest Lecture	A Great Career Launcher for Chemistry Graduates		20.01.2025
2	Hands on Training	Hands on Training on UV-Visible Spectroscopy	3	08.01.2025
	Hands on Training	Hands on training programme on Thin layer Chromatography		27.01.2025
	Hands on Training	Electrochemical Methods of Analysis		29.01.2025
3	Industrial Vist	Central Electrochemical Research Institute - (CECRI), Karaikudi.	3	26.09.2024
	Industrial Vist	DINTEC, Dindigul		22.01.2025
	Industrial Vist	Water Treatment Plant, Dindigul		28.03.2025
4	Interaction Session	Scope for Chemist to become an Entrepreneur	1	12.02.2025
5	Invited Talk	From Molecules to Milestone: Pathways to Achieve success	1	08.08.2024
6	Seminar	Essential Skills for the Pharmaceutical Industry	10	15.07.2024
	Seminar	Digital Tools for Effective Scientific Presentations		07.10.2024
	Seminar	Application of Phytochemicals in the Medicinal Plant		06.11.2024
	Seminar	Corrosion Case Study on Historical Monuments		27.01.2025
	Seminar	Impact of Greenhouse Gases on Global Warming		30.01.2025
	Seminar	Role of Chemistry in Flora and Fauna		31.01.2025
	Seminar	Recent trends in Nano-Chemistry		14.02.2025
	Seminar	Role of Chemist in Various Industries		24.02.2025

	Seminar	Science and Intellectual Property: A Journey of Innovation and Rights		28.02.2025
	Seminar	Green Synthesis, characterization and biological studies of Gold and Silver nanoparticles using Medicinal plants and it's applications		07.03.2025
7	FDP	Faculty Development Programme on tools for Effective Teaching for Chemistry	1	14.02.2025
8	Workshop	Applications of Instruments and Hands on Training for Students	5	14.12.2024
	Workshop	Applications of Instruments and Hands on Training for Non-Teaching staffs		18.12.2024
	Workshop	Learning Advanced Technologies using Simple Working Models		07.01.2025
	Workshop	Work Shop on Enzymatic techniques Using Drosophila		22.01.2025
	Workshop	Work Shop on Dairy Chemistry		28.01.2025

Seminar on Essential Skills for the Pharmaceutical Industry on 15.07.2024



The seminar on “**Essential Skills for the Pharmaceutical Industry**”, conducted on 15.07.2024, provided participants with a comprehensive understanding of the key skills required for a successful career in the pharmaceutical sector. The session was delivered by **Ms. R. Dharani**, Junior Executive, Anthem Bio Sciences Pvt. Ltd., Bangalore. The participants gained valuable insights into essential technical knowledge, regulatory compliance, quality standards, workplace practices, and effective communication skills. The seminar helped students understand the expectations of the pharmaceutical industry, prepare themselves for professional challenges, and enhance their employability and career development.

Invited Talk: From Molecules to Milestone: Pathways to Achieve Success in Chemistry on 08.08.2024



The Invited Talk on "From Molecules to Milestones: Pathways to Achieve Success in Chemistry" was conducted on 08.08.2024 with the participation of 120 students. The session was delivered by Dr. M. Arunachalam, Assistant Professor, Department of Chemistry, GRI-DTBU, Gandhigram. The talk focused on the importance of chemistry in scientific advancement and highlighted various academic, research, industrial, and career opportunities available to chemistry graduates. The resource person shared valuable insights into developing subject knowledge, research skills, innovation, and professional competencies required for a successful career in chemistry. The session motivated the students to explore diverse career pathways, set clear academic goals, and pursue excellence in the field of chemistry.

Field Visit/Industrial Visit Programme: Central Electrochemical Research Institute (CECRI), Karaikudi, on 26.09.2024, DINTEC, Dindigul, on 22.01.2025 and Water Treatment Plant, Dindigul, on 28.03.2025



As part of the academic enrichment activities, the Department of Chemistry organized **Field and Industrial visits** to provide students with practical exposure and an understanding of industrial and research-oriented applications of chemistry. The students visited the **Central Electrochemical Research Institute (CECRI)**, Karaikudi, on 26.09.2024, where they gained exposure to electrochemical research, advanced instrumentation, and ongoing scientific activities. A visit to **DINTEC**, Dindigul, on 22.01.2025 provided students with insights into industrial practices, technological applications, and workplace processes. The students also visited the **Water Treatment Plant**, Dindigul, on 28.03.2025, where they learned about water purification, treatment processes, quality monitoring, and the importance of chemistry in ensuring safe and clean water. These visits enhanced the students' practical knowledge, industry awareness, and understanding of the real-world applications of chemistry.

Guest Lecture on Exploring Advanced Opportunities in Chemistry: Pathways After B.Sc. on 20.09.2024



The Guest Lecture on “**Career Opportunities after B.Sc. Chemistry**”, conducted on 20.09.2024, provided students with valuable insights into the diverse academic and professional opportunities available after completing a B.Sc. in Chemistry. The session was delivered by **Dr. D. S. Bhuvaneswari**, Associate Professor, Department of Chemistry, Thiagarajar College, Madurai. The resource person highlighted various higher education pathways, research opportunities, competitive examinations, and career options available in academic, industrial, and other professional sectors. The expert guidance helped students understand the importance of early career planning, skill development, and continuous learning. The lecture motivated the students to prepare themselves with the necessary knowledge and professional competencies to succeed in both academic and career pursuits.

**Seminar on “Digital Tools for Effective Scientific Presentations”
on 07.10.2024**



The Seminar on “**Digital Tools for Effective Scientific Presentations**” was conducted on 07.10.2024 for the B.Sc. Chemistry students. The session was delivered by **Dr. V. Sridevi**, Associate Professor & Head, Department of Chemistry, Lady Doak College, Madurai. The seminar provided students with valuable knowledge on the effective use of digital tools and technologies for preparing and delivering scientific presentations. The resource person explained various techniques for organizing scientific content, designing effective presentation slides, presenting research findings clearly, and using digital resources to enhance communication. The session helped students develop their presentation, communication, and digital skills, enabling them to confidently present scientific concepts in academic and professional settings.

Invited Talk on Recent Trends in Nano Chemistry and Faculty Development programme on 14.2.2025



The Invited Talk on “**Recent Trends in Nanochemistry**” was conducted on 14.02.2025 for the B.Sc. Chemistry students. The session was delivered by **Dr. G. Sivasankari**, Assistant Professor, Department of Chemistry, Cauvery College for Women (Autonomous), Trichy. The talk provided students with valuable insights into the recent developments in nanochemistry, including the synthesis, characterization, properties, and applications of nanomaterials. The resource person highlighted the growing importance of nanochemistry in areas such as medicine, environmental protection, energy, materials science, and industrial applications. The session enhanced students’ understanding of emerging trends in nanoscience and motivated them to explore higher studies and research opportunities.

The **Faculty Development Programme** conducted on 14.02.2025 provided an opportunity for faculty members to enhance their knowledge and understanding of recent developments in chemistry and nanoscience. The programme focused on emerging research areas, innovative teaching approaches, current developments in nanochemistry, and opportunities for interdisciplinary research. The programme encouraged faculty members to update their subject knowledge, adopt effective academic practices, and explore new avenues for research and professional development.

Invited Talk on “Impact of Green Gases on Global Warming” on 30.01.2025



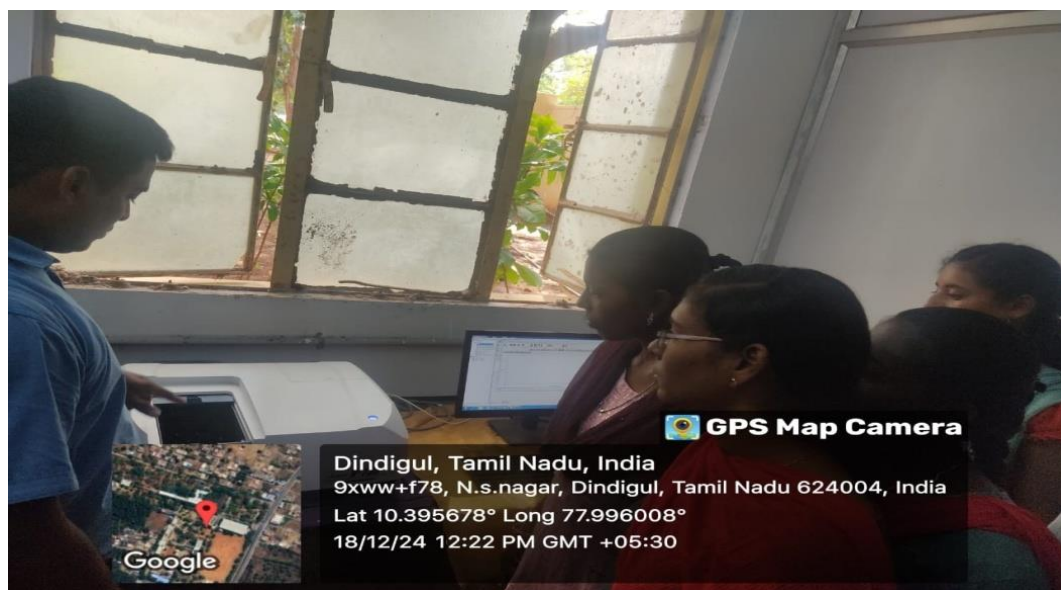
The Invited Talk on “Impact of Green Gases on Global Warming” was conducted on 30.01.2025 by **Dr. A. Uma Maheswari**, Assistant Professor, Department of Chemistry, PSNA College of Engineering and Technology, Dindigul. The session provided students with a comprehensive understanding of greenhouse gases and their significant role in global warming and climate change. The resource person explained the sources and effects of major greenhouse gases such as carbon dioxide, methane, nitrous oxide, and water vapour, along with their contribution to the enhancement of the greenhouse effect. The talk also highlighted the environmental consequences of global warming, including rising temperatures, climate variability, melting ice, and impacts on ecosystems. The session created awareness among students about the importance of reducing greenhouse gas emissions, adopting sustainable practices, and promoting environmental protection.

Hands on Training “Applications of Instruments and Hands-on Training for Non-Teaching Staff” on 18.12.2024



The “**Applications of Instruments and Hands-on Training for Non-Teaching Staff**” programme was conducted on 18.12.2024 by **Dr. G. Rajkumar**, Assistant Professor, Department of Chemistry, Vivekananda College, Madurai. The programme focused on providing practical knowledge and hands-on training in the operation, applications, and basic maintenance of various laboratory instruments. The resource person explained the working principles, proper handling procedures, safety precautions, and practical applications of instruments commonly used in chemistry laboratories. The training enhanced the technical skills and confidence of the non-teaching staff in handling laboratory equipment effectively and safely. The programme also emphasized good laboratory practices, proper instrument care, and safety measures to ensure efficient laboratory operations.

Hands on Training “Applications of Instruments and Hands-on Training for Students” programme was conducted on 18.12.2024



The “**Applications of Instruments and Hands-on Training for Students**” programme was conducted on 18.12.2024 by **Dr. G. Rajkumar**, Assistant Professor, Department of Chemistry, Vivekananda College, Madurai. The programme provided students with practical exposure to the working principles, operation, and applications of various laboratory instruments used in chemistry. The resource person demonstrated the proper handling and usage of instruments, explained essential safety precautions, and highlighted their applications in chemical analysis and research. The hands-on training enabled students to gain practical experience, improve their technical skills, and develop confidence in handling laboratory equipment. The programme enhanced their experimental knowledge and prepared them to apply instrumental techniques effectively in academic, research, and industrial environments.

Hands-on Training on Thin Layer Chromatography on 27.01.2025



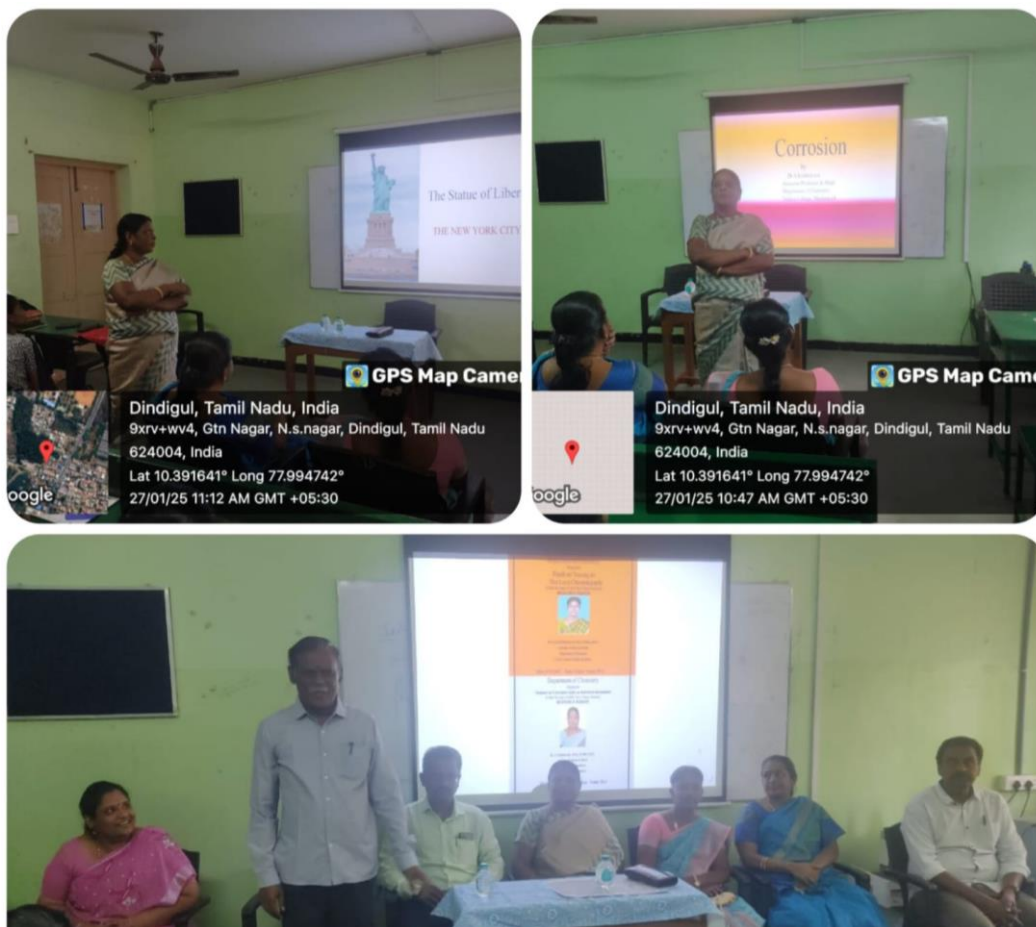
The “**Hands-on Training on Thin Layer Chromatography**” was conducted on 27.01.2025 by **Dr. S. Manimekalai**, Assistant Professor, Department of Chemistry, E.M.G. Yadava Women’s College, Madurai. The training programme provided students with practical knowledge of the principles and applications of Thin Layer Chromatography (TLC), an important technique used for the separation and identification of chemical compounds. The resource person explained the preparation of TLC plates, sample application, selection of suitable mobile phases, development of chromatograms, and visualization of separated components. Students actively participated in the hands-on activities and gained practical experience in performing TLC experiments and calculating R_f values. The programme enhanced their experimental skills, analytical abilities, and confidence in applying chromatographic techniques in chemistry laboratories and research.

Workshop on Dairy Chemistry was conducted on 28.01.2025



The “**Workshop on Dairy Chemistry**” was conducted on 28.01.2025 for the B.Sc. Chemistry students, with **Mrs. T. Priya**, 3/1104, EB Colony, Vijaya Nagar, Dindigul, as the resource person. The workshop provided students with practical knowledge about the chemical composition, properties, processing, and quality assessment of milk and dairy products. The resource person explained the major constituents of milk, including proteins, carbohydrates, fats, minerals, vitamins, and water, along with the factors affecting milk quality and stability. The session also introduced students to basic methods used for the detection of adulterants and quality control in dairy products. The workshop enhanced students’ understanding of the applications of chemistry in the dairy industry and provided valuable exposure to food chemistry and quality analysis.

Seminar on “Corrosion Study on Historical Monuments” on 27.01.2025



The Seminar on “**Corrosion Study on Historical Monuments**” was conducted on 27.01.2025 by **Dr. A. Krishnaveni**, Assistant Professor & Head, Department of Chemistry, Yadava College, Madurai. The seminar provided students with valuable insights into the causes and mechanisms of corrosion affecting historical monuments and heritage structures. The resource person explained the role of environmental factors such as moisture, atmospheric pollutants, temperature variations, and acidic conditions in the deterioration of metals and other construction materials used in monuments. The session also highlighted various methods for corrosion assessment, prevention, and conservation of historical structures. The seminar helped students understand the importance of applying chemical principles to heritage conservation and created awareness about the role of chemistry in protecting valuable historical monuments for future generations.

Guest Lecture on “Chemistry: A Great Career Launcher” on 20.01.2025



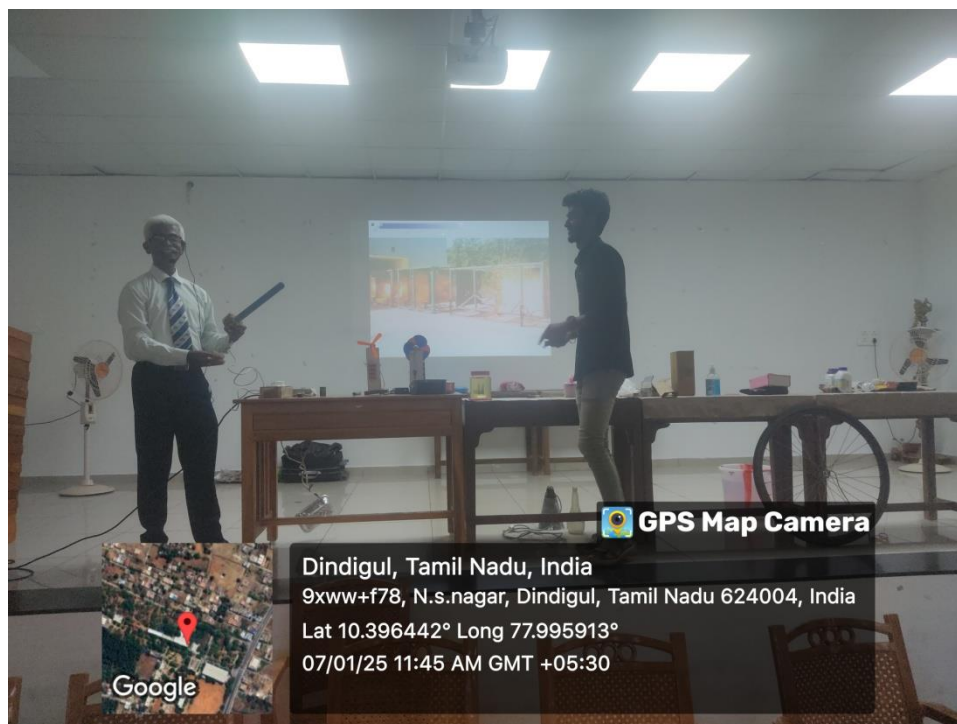
The Guest Lecture on “**Chemistry: A Great Career Launcher**” was conducted on 20.01.2025 by **Dr. P. Krishnan**, Scientist, FMC Corporation, USA. The session provided students with valuable insights into the wide range of career opportunities available to chemistry graduates in academic, research, industrial, and multinational organizations. The resource person highlighted the importance of strong fundamentals in chemistry, practical skills, innovation, communication abilities, and continuous professional development for building a successful career. The talk also provided students with an understanding of the role of chemists in industries and research institutions across the globe. The session motivated students to pursue higher education, research, and industry-oriented careers and encouraged them to develop the skills required to succeed in the rapidly evolving field of chemistry.

Seminar on “Role of Chemistry in Flora and Fauna” on 31.01.2025



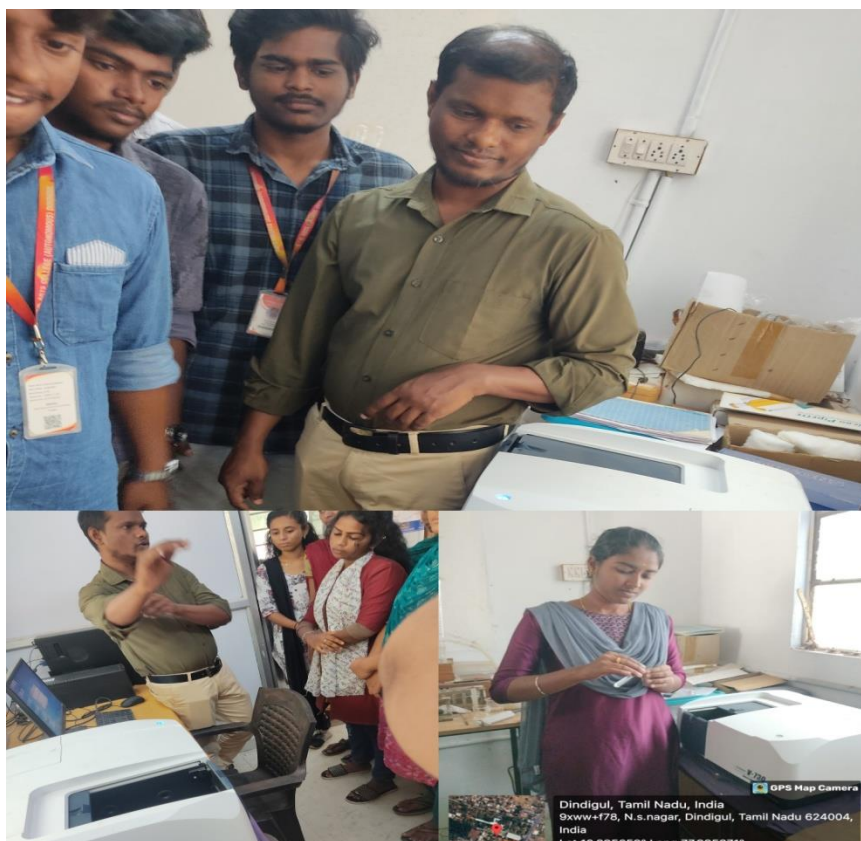
The Seminar on “**Role of Chemistry in Flora and Fauna**” was conducted on 31.01.2025 by **Dr. M. Sangeetha**, Assistant Professor, Department of Chemistry, E.M.G. Yadava Women’s College, Madurai. The session provided students with valuable insights into the important role of chemistry in the growth, development, and survival of plants and animals. The resource person explained the chemical constituents present in flora and fauna, their biological functions, and the significance of biochemical processes in living organisms. The lecture also highlighted the role of natural products, pigments, proteins, enzymes, vitamins, minerals, and other biomolecules in maintaining biological activities. The session enhanced students’ understanding of the interrelationship between chemistry and life sciences and created awareness of the applications of chemistry in environmental, pharmaceutical, agricultural, and biological research.

Workshop on “Learning Advanced Technologies Using Simple Working Models” on 07.01.2025



The Workshop on “Learning Advanced Technologies Using Simple Working Models” was conducted on 07.01.2025 by Dr. K. Gridharan, Former Scientist ‘F’ & Joint Director (Retired), DRDO, Ministry of Defence, Government of India, Chennai. The session provided students with valuable insights into the principles and applications of advanced technologies through simple and innovative working models. The resource person demonstrated how complex scientific concepts can be understood effectively through practical models and hands-on approaches. The lecture highlighted the importance of scientific thinking, creativity, innovation, problem-solving skills, and practical learning in understanding emerging technologies. The session motivated students to develop an interest in science and technology and encouraged them to apply their theoretical knowledge to practical situations.

Hands-on Training on “UV-Visible Spectroscopy” on 08.01.2025



The Hands-on Training on “UV-Visible Spectroscopy” was conducted on 08.01.2025 by Dr. J. Dominic, Former Technician, Gandhigram Rural Institute – DTBU, Gandhigram. The training programme provided students with practical knowledge of the basic principles, instrumentation, and applications of UV-Visible spectroscopy in chemical analysis and research. The resource person explained the working principle of UV-Visible spectrophotometers, sample preparation, wavelength selection, and measurement of absorbance. Students gained hands-on experience in operating the instrument and understanding the relationship between absorbance and concentration through the Beer–Lambert law. The training enhanced students’ practical skills, analytical understanding, and confidence in handling sophisticated instruments used in chemistry laboratories and research.

Seminar on “Science and Intellectual Property: A Journey of Innovation and Rights” on 28.02.2025



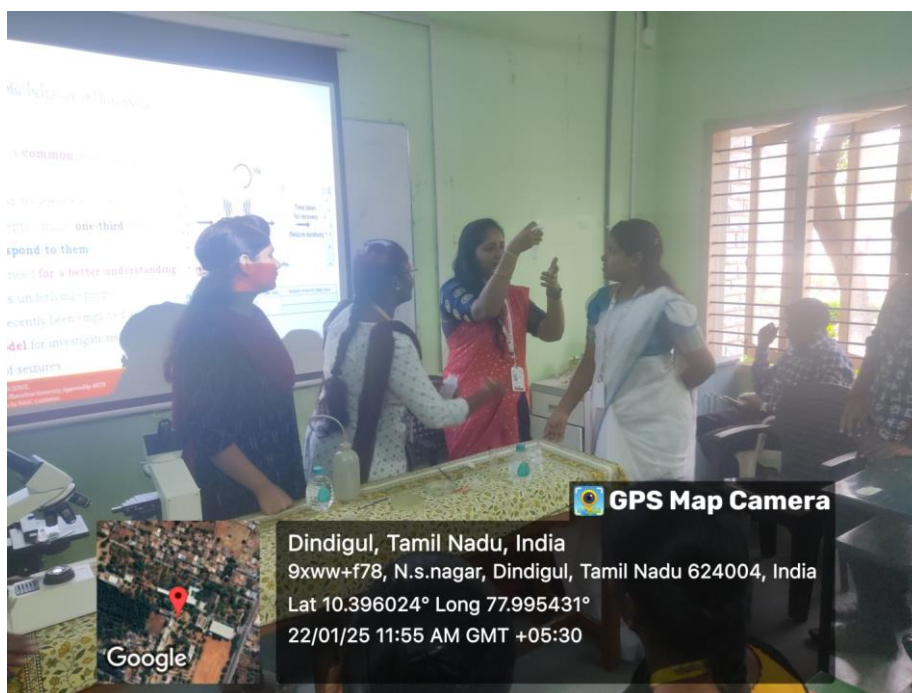
The Seminar on “**Science and Intellectual Property: A Journey of Innovation and Rights**” was conducted on 28.02.2025 by **Dr. G. Puthilibai**, Professor of Chemistry, Sri Sairam Engineering College, Chennai. The seminar provided students with valuable insights into the relationship between scientific research, innovation, and intellectual property rights (IPR). The resource person explained the importance of protecting innovative ideas, inventions, scientific discoveries, and research outcomes through appropriate intellectual property mechanisms such as patents, copyrights, trademarks, and designs. The session also highlighted the role of IPR in encouraging innovation, promoting research, and facilitating the commercialization of scientific developments. The seminar enhanced students’ awareness of intellectual property protection and motivated them to pursue innovative research while understanding the importance of safeguarding their scientific contributions.

**Workshop on “Scope for Chemists to Become an Entrepreneur”
on 12.02.2025**



The Workshop on “Scope for Chemists to Become an Entrepreneur” was conducted on 12.02.2025 by **Mr. S. Manikandan**, Proprietor, National Detergents, Mottanampatti, A. Vellodu, Dindigul. The workshop provided students with valuable insights into the entrepreneurial opportunities available for chemistry graduates. The resource person explained how scientific knowledge and technical skills can be transformed into successful business ventures, particularly in the chemical, detergent, and allied industries. The session highlighted the importance of identifying market opportunities, product development, quality control, financial planning, marketing strategies, and effective business management. The workshop motivated students to develop an entrepreneurial mindset and encouraged them to explore self-employment and start-up opportunities using their knowledge and skills in chemistry.

Workshop on “Enzymatic Techniques Using Drosophila” on 22.01.2025



The Workshop on “**Enzymatic Techniques Using Drosophila**” was conducted on 22.01.2025 by **Dr. S. Shamina**, Head & Associate Professor, Department of Biochemistry, RVS College of Arts and Science, Coimbatore, and **Ms. M. Jamal Fathima**, Assistant Professor, Department of Biochemistry, RVS College of Arts and Science, Coimbatore. The workshop provided students with practical exposure to enzymatic techniques using *Drosophila* as a model organism. The resource persons explained the biological significance of *Drosophila*, enzyme activity, sample preparation, experimental procedures, and the applications of enzymatic studies in biological and biochemical research. The hands-on activities helped students understand experimental techniques and develop practical skills in handling biological samples and analyzing enzyme-related processes. The workshop enhanced students’ laboratory skills, research awareness, and understanding of the applications of biochemistry in life science research.

**Seminar on “Applications of Photochemistry in Medicinal Plants”
on 06.11.2024**



The Seminar on “**Applications of Photochemistry in Medicinal Plants**” was conducted on 06.11.2024 by **Dr. N. Muniyappan**, Assistant Professor, Department of Chemistry, Saraswathi Narayanan College, Madurai. The seminar provided students with valuable insights into the role of photochemical processes and naturally occurring phytochemicals in medicinal plants. The resource person explained the importance of bioactive compounds such as alkaloids, flavonoids, terpenoids, phenolics, and other secondary metabolites responsible for the medicinal properties of plants. The session also highlighted the applications of photochemical studies in the identification, extraction, characterization, and evaluation of biologically active compounds from medicinal plants. The seminar enhanced students’ understanding of the relationship between chemistry and medicinal plant research and encouraged them to explore natural products, pharmaceutical applications, and interdisciplinary research opportunities.

**Hands-on Training on “Electrochemical Methods of Analysis”
on 29.01.2025**



The Hands-on Training on “**Electrochemical Methods of Analysis**” was conducted on 29.01.2025 by **Mr. P. Jeyaprakasam**, Proprietor, Super Scientific Suppliers, 87, Spencer Compound, Dindigul. The training programme provided students with practical knowledge of various electrochemical methods used for chemical analysis and research. The resource person explained the basic principles, instrumentation, electrode systems, experimental procedures, and applications of electrochemical techniques. Students gained practical exposure to techniques used for measuring electrochemical parameters and understanding the behaviour of chemical species at electrode surfaces. The hands-on activities enhanced their analytical skills, laboratory competence, and confidence in handling electrochemical instruments. The programme also helped students understand the applications of electrochemical methods in environmental analysis, corrosion studies, material science, and industrial research.