



Department of Chemistry

Name of the activity/Programme:

Workshop on “Molecules to Materials: Synthesis and Characterization in Practice”

Title: Molecules to Materials: Synthesis and Characterization in Practice

Date of activity: 25th and 26th May 2026

Number of student participants: 24

About the activity

Department of Chemistry, BMSCE organised a workshop entitled “Molecules to Materials: Synthesis and Characterization in Practice” conducted to bridge the gap between theoretical knowledge and experimental applications in the field of materials chemistry. The program was designed to equip participants with practical skills in synthesis techniques and advanced instrumental characterization methods.

Objectives

- To introduce fundamental and advanced concepts in molecular synthesis and material transformation.
- To provide hands-on training in modern analytical and characterization techniques.
- To familiarize participants with instrumental methods such as UV, IR, GC, SEM, XRD, and particle size analysis.
- To bridge the gap between academic learning and practical laboratory applications in materials chemistry.
- To enhance research-oriented thinking among students and faculty participants.

Program Overview

Day 1 (25th May 2026 - Monday)

Registration and Inauguration marked the beginning of the program and a Tea Break followed the inaugural session.

An expert talk was delivered by Dr. G. S. Ananthnag, focusing on NMR and its applications

A Lunch Break was followed by afternoon sessions which included:

Hands-on training on synthesis and characterization concepts by Dr. S. Manjunatha.

A practical session on Microwave, UV, and GPC techniques by Dr. Supriya S.



Department of Chemistry

Day 2 (26th May 2026 Tuesday)

The day began with a technical talk by Dr. Madhuri P Rao on Chromatographic techniques followed by a hands-on session on HPLC techniques.

After lunch, participants engaged in advanced characterization training covering: IR spectroscopy, Gas Chromatography (GC), Scanning Electron Microscopy (SEM), X-Ray Diffraction (XRD), Particle size analysis conducted by Dr. K. L. Nagashree.

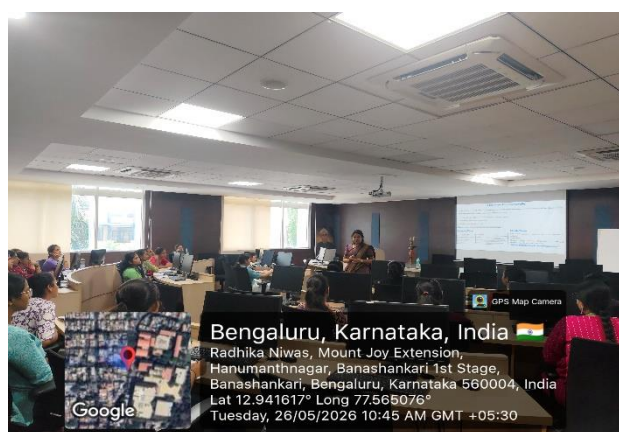
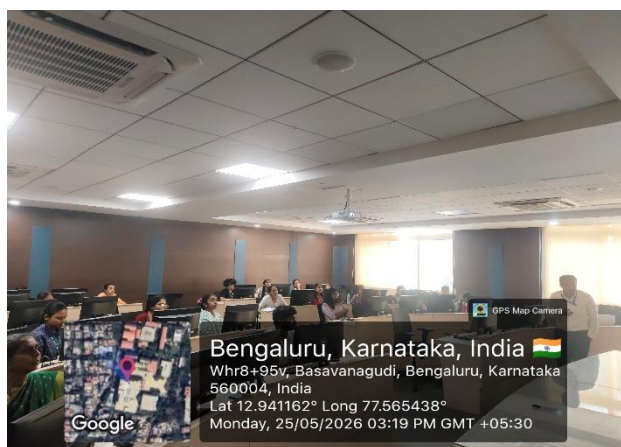
Outcomes

The workshop successfully achieved its intended goals and provided significant academic and practical benefits to participants. The major outcomes were:

- Participants gained hands-on experience in advanced synthesis and characterization techniques.
- Improved understanding of instrumental analysis methods widely used in research and industry.
- Enhanced ability to interpret experimental data from techniques such as IR, GC, SEM, and XRD.
- Increased awareness of modern approaches in materials chemistry and molecular engineering.
- Strengthened research skills and motivation for pursuing experimental scientific work.
- Encouraged interdisciplinary learning between chemistry and engineering domains.



Department of Chemistry Photographs





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B.M.S. COLLEGE OF ENGINEERING

B.M.S. College of Engineering (BMSCE) was founded in the year 1946 by Late Sri. B. M. Sreenivasaiah a great visionary and philanthropist and nurtured by his illustrious son Late Sri. B. S. Narayan. BMSCE is the first private sector initiative in engineering education in India. BMSCE has completed 76 years of dedicated service in the field of Engineering Education. BMSCE today offers 13 Under Graduate & 12 Post Graduate courses, both in conventional and emerging areas. At present, 15 Departments are recognized as Research Centers offering Ph.D./M.Sc. Engineering by Research in Science, Engineering, Architecture and Management. It is the First Institution in the state bestowed with NBA Accreditation in Tier I Format (Washington Accord). World Bank funded TEQIP Phase I, Phase II, and Phase III Institute, and Partner Institution of the Melton Foundation, USA, which advocates Global Citizenship with exchange of culture. BMSCE is an Autonomous Institute (UGC approved) since 2008. BMSCE has ranked 83rd in the NIRF Ranking 2022.

OBJECTIVES

- To familiarize participants and demonstrate various synthesis and characterization techniques.
- To provide participants with hands-on experience in chemical synthesis techniques used in research laboratories.

OUTCOMES

- Understand the fundamental concepts of material synthesis and characterization
- Gain hands on experience and confidence in handling research-oriented laboratory work and instrumentation.

CHIEF PATRONS

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Dr. K.L. Nagashree, Assistant Professor & Head
Department of Chemistry

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B.M.S. College of Engineering

Bengaluru-19
(An Autonomous Institution Affiliated to VTU)

Workshop On Molecules to Materials: Synthesis and Characterization in Practice

25.05.2026 and 26.05.2026



Organized by
Department of Chemistry
B.M.S. College of Engineering
Bull Temple Road, Bangalore-560019



Department of Chemistry

Workshop on “Molecules to Materials: Synthesis and Characterization in Practice” 25th and 26th May 2026 SCHEDULE			
25-05-2026 MONDAY		Time	Program
	VENUE: Library NPTEL Hall	9.30 AM – 10:00 AM	Registration
		10:00 AM – 10:20 AM	Inauguration
		10:20 AM – 10:30 AM	Tea break
	VENUE: Library NPTEL Hall	10:30 AM – 12.30 PM	Talk: NMR spectroscopy: Basics and modern applications Dr. G. S. Ananthnag Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering
	Hostel	12:30 PM – 1:30 PM	Lunch Break
	VENUE: Library NPTEL Hall	1:30 PM – 3:00 PM	Talk: Insights into nanomaterials synthesis and characterization Dr. S. Manjunatha Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering
26-05-2026 TUESDAY	VENUE: CND	3:00 PM – 4:30 PM	Hands-on Session Microwave synthesizer, UV-Vis, GPC Dr. Supriya S Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering
	DAY 2		
	VENUE: Library NPTEL Hall	10.00 AM – 11:00 AM	Talk: Chromatographic techniques Dr. Madhuri P Rao Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering
		11:00 AM – 11:15 AM	Tea Break
	VENUE: Science Block	11:15 AM – 12.30 NOON	Hands-on Session HPLC, Electrochemical workstation Dr. Madhuri P Rao and Dr. Malini S Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering,
	Hostel	12.30 PM – 2:00 PM	Lunch Break
	VENUE: Mechanical and PG block	02:00 PM – 04:30 PM	Hands-on Session IR, SEM, XRD, Particle size analyzer Dr. K. L. Nagashree Assistant Professor, Dept. of Chemistry, B.M.S. College of Engineering