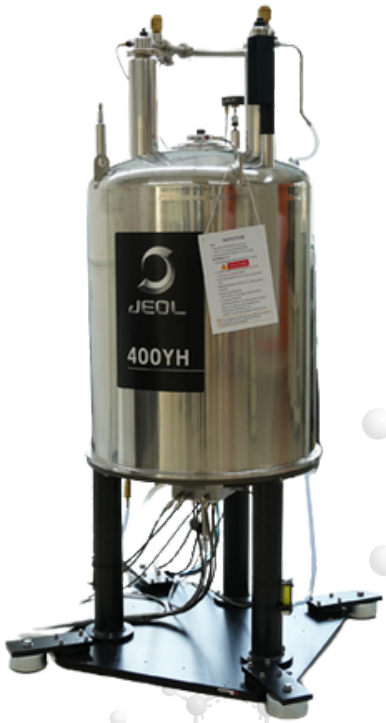
SRM UNIVERSITY AP
Andhra Pradesh

2-DAY USER'S MEET ON NMR SPECTROSCOPY



PROGRAMME OBJECTIVES:

- Provide a comprehensive overview of NMR spectroscopy principles, covering basic aspects like nuclear spin, magnetic fields, and resonance phenomena.
- Illustrate how NMR spectroscopy is applied in various fields by showcasing applications in chemistry, biology, medicine, and materials science.
- Provide hands-on training with NMR instruments and techniques by offering sessions on setting up NMR experiments, sample preparation, and data acquisition.
- Improve participant's ability to interpret NMR spectra and analyse data by teaching software tools and methods for processing and analysing NMR data.

TARGET AUDIENCE:

Faculty members and researchers (Postdoctoral fellow, PhD students, Final year M.Tech and MSc students) interested in characterisation using NMR spectroscopy.

June 25 & 26, 2025

V-104A, Vikram Sarabhai Block, SRM University-*AP*

Organised by
Office of Dean Research

Fundamentals & Instrumentation Day - 1

09:00 – 09:15 AM	**Registration & Welcome** • Introduction to the workshop.
09:15 – 10:30 AM	**Introduction to NMR Spectroscopy by Sakthi Ganapathi** • Basic principles of NMR • Historical development and applications
10:30 – 10:45 AM	**Tea/Coffee Break**
10:45 AM – 12:00 PM	**NMR Theory – Understanding the Basics by Dr Ramaraju Korivi** • Nuclear spins, magnetic fields, and resonance frequency • Relaxation processes (T1, T2)
12:00 – 01:00 PM	**NMR Instrumentation by Shaik Afreen** • Components: Magnet, probe, spectrometer, console • Sample preparation techniques.
01:00 – 02:00 PM	**Lunch Break**
02:00 – 03:00 PM	**Types of NMR Experiments by Dr Ramaraju Korivi & Shaik Afreen** • 1D NMR (^{1}H, ^{13}C) • 2D NMR (COSY, HSQC, NOESY) basics
03:00 – 03:15 PM	**Tea/Coffee Break**
03:15 – 04:30 PM	**Practical Session on NMR Spectrometer by Shaik Afreen** • Sample loading. • Basic operation and safety protocols
04:30 – 05:00	**Participants' Discussion and Q&A session** • Address queries from the day's sessions.

Data Acquisition, Analysis, and Advanced Applications Day - 2

09:00 – 10:00 AM	**Data Acquisition & Parameter Optimisation by Dr Ramaraju Korivi** • Setting acquisition parameters • Troubleshooting common issues
10:00 – 10:15 AM	**Tea/Coffee Break**
10:15 – 11:45 AM	**Data Processing & Interpretation by Dr Ramaraju Korivi & Shaik Afreen** • Using software for spectral analysis (e.g., Topspin, Mestre Nova) • Peak assignment and integration
11:45 AM – 12:30 PM	**Advanced NMR Techniques by Dr Ramaraju Korivi & Shaik Afreen** • Multidimensional NMR for complex molecules • ^{1}H, ^{13}C, and 2D NMR applications
12:30 – 13:30 PM	**Lunch Break**
13:30 – 15:00 PM	**Hands-on Data Analysis by Sakthi Ganapathi** • Processing real data sets • Assigning peaks and interpreting spectra
15:00 – 15:15 PM	**Tea/Coffee Break**
15:30 – 16:30 PM	**Workshop Summary** Summary of Key Points • Feedback Session • Distribution of Participation Certificates

Research with SRMAP:

Participants will be encouraged to submit a research project to Office, Dean Research, SRM University-*AP* utilising the characterisation techniques learned during the programme. Participants with selected research projects will be offered to utilise university research facilities with a discounted rate for 1 year through I-STEM portal.

Participants can utilise SRMAP transport services and limited campus accommodation (upon request) with prior approval by sending an email to coordiniator.crfis@srmap.edu.in (or WhatsApp message – 9563042194, 9000333521, 9866631483)