



Advanced Spectroscopic (UV, IR, HPLC, LC-MS & NMR) Techniques

CSIR-CDRI



Under CSIR-Integrated Skill Initiative, CSIR-Central Drug Research Institute is offering a course on SKILL DEVELOPMENT PROGRAM in Advanced Spectroscopic Techniques. It is intended to generate human resources with knowledge of operation, routine maintenance and interpretation of spectral data using state-of-the-art spectrometers to fulfil the need by enhancing the knowledge and skill-set of students, research fellows, faculty and staff working in the relevant area. During this training, exposure will be given to the state-of-the-art instruments *i.e.* Mass, HPLC, FT-IR, UV-Vis & NMR. This training program will provide knowledge about theoretical, practical training on basic and advanced experimental methods in these techniques. Also providing understanding and hands on experience on elucidating the structural information of various molecules in the field of drug discovery process.

CSIR-CDRI invites applications for the following course:

Title of the Course	: Advanced Spectroscopic (UV, IR, HPLC, LC-MS & NMR) Techniques
Duration	: 08 Weeks (20th October to 12th December 2025)
No. of Seats	: 16
Educational Qualification	: M.Sc./B. Pharm./M. Pharm./B.Tech./M.Tech. /Ph.D. with chemistry one of the major subject.
Venue of the course	: CSIR-CDRI, Lucknow
Course Fee	: Rs. 15,000
Course coordinator	: Dr. Sanjeev Kanojiya, Sophisticated Analytical Instrument Facility & Research, Div. CSIR-CDRI, Lucknow. (saif.cdri@csir.res.in)

TRAINING CURRICULUM:

- Theory, instrumentation and applications of UV-VIS and FT-IR spectroscopy. Hands on training on instrument, analytical method development and data analysis.
- Principles, instrumentation and applications of HPLC/PDA. Theory of chromatography, hands on training on HPLC system, analytical method development and data analysis.
- Basic Principles of Mass Spectrometry, instrumentation, MS/MS, fragmentation process and pattern, various MS techniques *i.e.* EI, API-MS, DESI, IMS and MSI, hands on training on data interpretation and analysis. Applications of LC-MS Techniques in drug discovery.
- Basics of NMR Spectroscopy, NMR instrumentation, chemical shifts and spin-spin coupling constants, FT-NMR, homo and hetero nuclear two-dimensional NMR. Hands on training on NMR data interpretation, analysis and its variety of applications in Drug Discovery.

SALIENT FEATURES OF THE TRAINING

- About 40% Theory and 60% Practical hands-on sessions as per course curriculum
- Small batch size for effective training
- Understanding basic principles
- Lectures assisted with multimedia aids
- Interactive session
- Exposure to diverse sample preparation techniques
- Demonstrations of working of state-of-the-art equipment
- Planning experiments for obtaining meaningful results

EVALUATION OF TRAINEES

Evaluation will consist of the following components

Theory Courses (50 Marks)

- (a) Continuous assessment through assignments
- (b) Term and examination

Practical Courses (50 Marks)

- (a) Guided Experiments
- (b) Unguided Experiments

CERTIFICATION

The certificate will be issued to the successful candidates for the course

IMPORTANT DATES:

Receiving of application by E-mail (last date): 30/09/2025

Intimation to selected candidates: 03/10/2025

Fee submission (last date): 06/10/2025

Course Start: 22/10/2025

Kindly send Application by E-mail only (sdp@cdri.res.in)

For more details, kindly visit the link;
<https://www.cdri.res.in/sdptraining>

Contact:
Coordinator, **Skill Development Programme**
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