



## Advanced Spectroscopic (NMR, HPLC, LC-MS, UV/IR) 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.* NMR, Mass, HPLC, FT-IR, UV-Vis. 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:

<b>Title of the Course</b>	<b>: Advanced Spectroscopic (NMR, HPLC, LC-MS, UV/IR) Techniques</b>
<b>Duration</b>	<b>: 08 Weeks (7<sup>th</sup> August to 29<sup>th</sup> September 2023)</b>
<b>No. of Seats</b>	<b>: 16</b>
<b>Educational Qualification</b>	<b>: M.Sc./B. Pharm./M. Pharm./B.Tech./M.Tech./Ph.D.</b>
<b>Venue of the course</b>	<b>: CSIR-CDRI, Lucknow</b>
<b>Course Fee</b>	<b>: Rs. 15,000</b>
<b>Nodal Officer</b>	<b>: Dr. Sanjeev Kumar Shukla (E-mail: <a href="mailto:skshukla@cdri.res.in">skshukla@cdri.res.in</a>)</b>

### TRAINING CURRICULUM:

- Basics of NMR Spectroscopy, nuts & bolts of NMR instrumentation, chemical shifts and spin-spin coupling constants, FT-NMR, homo and hetero nuclear two-dimensional NMR. Hands on training on state-of-the-art NMR spectrometers and interpretation of data, its variety of applications in Drug Discovery
- Basic Principles of Mass Spectrometry, instrumentation, MS/MS, fragmentation process and pattern, various ionization techniques *i.e.*, EI & CI, API-MS, FAB-MS, MALDI-MS, interpretation of Mass spectral data. Applications of LC-MS Techniques in drug discovery
- Principles, techniques, instrumentation and applications of HPLC. Theory of chromatography and analytical method development
- Theory, instrumentation and applications of UV-VIS and FT-IR spectroscopy

## **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
- Troubleshooting

## **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): 15/07/2023

Intimation to selected candidates: 17/07/2023

Fee submission (last date): 24/07/2023

Course Start: 07/08/2023

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

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

Contact:

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