

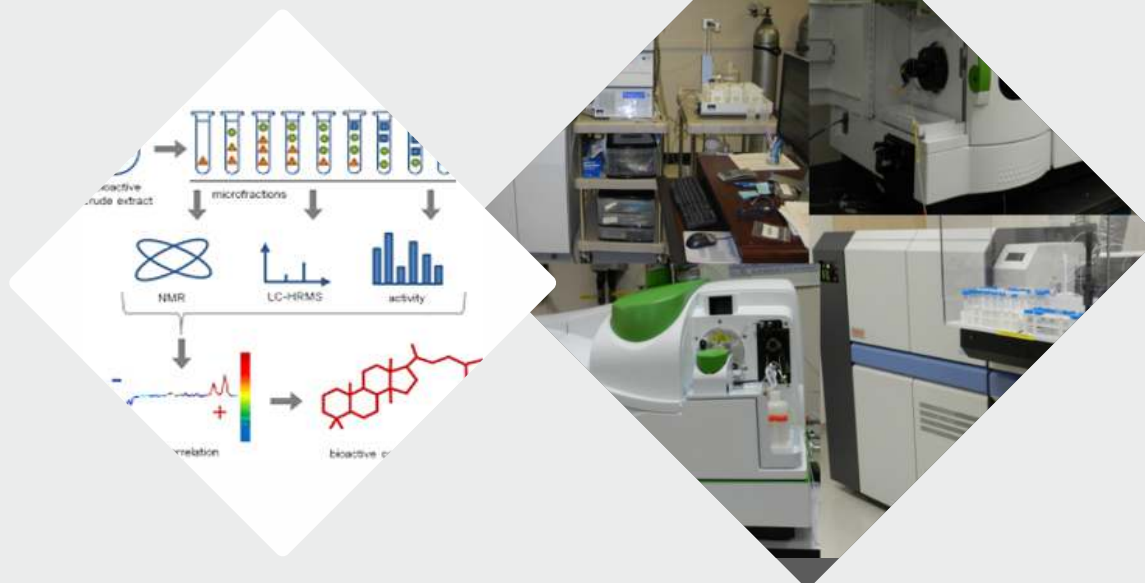


1. **Title of the Course: Advancement in Sophisticated and Hyphenated Analytical Techniques (NMR, LC - MS, GC -MS AND HPTLC) Instrumentation, Hands -on-training, workshop and Applications**
2. **Course Mentors:**
 1. Prof. Sanjay Jachak, HoD, Natural Products, NIPER-Mohali.
sanjayjachak@niper.ac.in
Contact No. 01722292033
 2. Prof. I.P. Singh, Professor, Natural Products, NIPER -Mohali.
3. **Target Group:** Graduation, Post- Graduation, Ph.D research Scholar and faculty members
4. **Fee Structure:** 2000/-per participant
5. **Duration of the course:** 17/07/2023 - 21/07/2023
6. **Days and time of the course** (Monday to Friday 10 to 1pm)
7. **Eligibility of the Course:** Open for CGC Landran and Non CGC Landran Students, researchers and faculties.
8. **Objectives:** After completion of the course, the participants will be able to
 1. Discuss the basic principle and working of the instruments.
 2. Interpret the analytical data from spectra.
 3. Analyse various drugs in single and combination dosage forms.
 4. Analyse herbal drugs/crude AYUSH drugs and their bio -actives. (Phytochemical analysis – qualitative and quantitative)
 5. Hands-on-training sessions on LC-MS and NMR, HPTLC and GC- MS instruments.
9. **Scope:** In pharmaceutical analysis it is important to understand sophisticated analytical instrument working and interpretation of the obtained data by the students, scientist and faculty members. This training course will address these aspects and will help to enhance the understanding about sophisticated instruments, recent developments in the field.
10. **Uniqueness:** The course will impart hands on training on various advanced NMR techniques (2D- NMR, qNMR), LC-MS/MS, LC-HRMS and GC-MS. The training will be given by the experts in NIPER, Mohali which is the first national level institute in the area of pharmaceutical sciences.
11. **Learning Outcomes of the Course:** After completing this course students will be able to know the
 - Basic principle and working of the instruments such as NMR, LC-MS and GC-MS.
 - Interpret the analytical data from spectra.
 - Qualitative and quantitative analysis of drugs and phytochemicals using these techniques.
 - Analyse various drugs in single and combination dosage forms.

12. Week/Day wise Plan of the Course:

Module - 1 (Basic Instrumentation NMR)	Module - 2 (Basic Instrumentation LC-MS)	Module - 3 (Hands on training NMR and LC-MS)	Module - 4 (Basic Instrumentation and Hands of training on HPTLC)	Module - 5 (Basic Instrumentation and Hands of training on GC - MS)
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13. High Resolution Image depicting the course



Registration Link: <https://forms.gle/XqdETGjrmDNvXetn7>

Payment details:

Payment by **Cash or Gpay** to the Course Coordinator.

Course Coordinator: Dr. Pallavi Ahirrao

Contact No. 9876115171



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