



सी.एस.आई.आर.-एकीकृत कौशल विकास पहल के अंतर्गत

CSIR-CIMAP

Training on

Advanced Instrumentation & Analytical Techniques for Natural Products

[AIAT-22]

[15 February– 19 February 2022]

CIRCULAR



CSIR Integrated Skill Initiative

Background

Plants have the ability to produce a wide range of chemicals that are used to perform important biological functions, as well as to defend against attack from insects, fungi and herbivorous mammals. Photochemical, particularly small molecules have number of applications. The harnessing of herb for human health management is centuries old science, practiced in our country. Natural products serve as basic skeleton and play crucial role in modern drug discovery program. Number of drugs and supplements in use today are derived from natural products. The process of drug development and quality control required multi-skill. The identification of lead molecule and quality assurance control of herb/products required skill and knowledge of analytical instrumentation. The requirement for consistent high standards of competence in chromatography-spectroscopy and analytical science is now, more than ever, a matter of priority for industries pharmaceutical, chemical, biotechnological research organizations mandated for applied research.

Over the years the development of these tools has become increasingly sophisticated to make their use simpler and now these have become as indispensable tool for R & D work. To keep pace with the sophistication in these tools, it is necessary to simultaneously upgrade the skills of all concerned in this field as a human resource development venture. To fulfill this important objective, CSIR-CIMAP is organizing five days summer school on applications and principles of working of the sophisticated instrumentation from 15-19 February 2022.

About CSIR-CIMAP

CSIR-CIMAP is a national R&D Laboratory of CSIR having a unique mandate on medicinal and aromatic plants for their production and exploitation as value added product for the industry and society. The research and development program of the institute is greatly supported by modern sophisticated instrumentation to provide base for

development of technologies through plant sciences, Lucknow “The historical city of Nawabs “has developed as an advance city of science education and research with a good number of prestigious R & D and academic institutions like CDRI, NBRI, IITR, IISR, IET, BSIP, KGMU, SGPGI, IIM and many more including Lucknow University.

Objective

The course will provide sound knowledge in natural product extraction, separation, purification and identification practices of phytochemicals. The focus of the training programme was to enhance experience and practical knowledge of chromatographic and spectroscopic research in natural products development and develop human resource capacities by offering training to personnel from industry, academic institutions and government laboratories.

Course Content

During course there will be theory lectures on basic instrumentation principle, applications and also the practical exposure on use of sophisticated instruments and analysis of data.

- 1 **Module 1:** Introduction to Medicinal and Aromatic Plants (MAPs) Analysis
- 2 **Module 2:** Isolation and purification of natural products
- 3 **Module 3:** HPTLC-Basics, Instrumentation and its application in MAPs
- 4 **Module 4:** HPLC-Basics, Instrumentation and its scope in natural products
- 5 **Module 5:** GC & GC-MS-Basics, Instrumentation and its scope
- 6 **Module 6:** LC-MS-Basics, Instrumentation and its scope
- 7 **Module 7:** FT-NIR & Inductively coupled plasma atomic emission spectroscopy (ICP-AES) -Basics, Instrumentation and its scope
- 8 **Module 8:** NMR-Basics, Instrumentation and its application in small organic molecule structure elucidation

Who should participate?

- The type of training/exposure has been planned to be useful for scientists, academicians, industry and research scholars equally.
- No doubt students/ scholars related to the fields will be highly benefited as they will have an exposure to modern R & D tools. This course is designed keeping the requirements of both beginners and intermediate-level users.
- The lectures, supplemented by problems sets, power point slides, and hands on training, will provide the fundamentals needed to understand the techniques and instrumentation. *No prior experience in advanced mathematics, theoretical chemistry, or physics is required for this course.*
- Some experience in HPLC or introductory course work in organic chemistry is desirable but not necessary.

Course detail along with fee structure

Duration	: 05 days (Hybrid i.e. Residential along with live streaming).
Batch size	: 20 [10-Residential- First come first served basis & 10- Online)
Mode of Registration	: Interested candidates have to submit the Registration Form along with course fee (available on CIMAP website).
Registration Fee	: Students: INR 7,000/- Residential; INR 3,500/- Online) Industries/Institution sponsored: INR 15,000/- Residential; INR 7,500-Online)
Payment mode	: The demand draft in favour of “Director, CSIR-CIMAP , Lucknow “payable at Lucknow or through online transfer .

Bank Detail for online transfer-

Account No.	: 30267691783
Account holder	: Director, CIMAP, Lucknow
Bank Address	: State Bank of India, Main Branch, Hazaratganj, Lucknow
Branch Code	: 000125
IFSC code	: SBIN0000125
MICR code	: 226002002

Note: No Refund is permissible in any circumstances. The selected candidates will be informed on phone/email.

Accommodation	: Program is Hybrid. Accommodations to only 10 candidates will be provided in our guest house.
Dates	: 15 February - 19 February, 2022
Timings	: 9:30 AM to 6:00 PM

How to Apply

The application along with brief bio data should be forwarded to the Director, CSIR-CIMAP, Lucknow. The criteria of selection will be relevance of the applicant with training as well as covering maximum geographical and institutional (R&D/ academic/ industries) representation. The last date for receiving the application is 10 February 2022. **No TA/DA will be admissible to the participants for attending the training/school.**



Course Structure

There will be lectures and practical demonstrations by the faculty of leading scientists and experts of different fields. The training school will be of five days duration with long hours of working from early morning to late evening. The participants will be exposed to different aspects of natural product chemistry like Isolation, chromatographic purification, characterization of molecules with help of modern sophisticated instruments. The participants are expected to fully involve themselves in training without leave. The hostel stay will be compulsory for residential trainees due to late hours of working.

For further communications write or call to:

Director

CSIR-Central Institute of Medicinal and Aromatic Plants

PO- CIMAP

Lucknow-226015 [Uttar Pradesh]

Phone: 0522-2718505

Fax : 0522-2719072

E-mail: director@cimap.res.in,

Website: www.cimap.res.in

Course Coordinator

Dr. Karuna Shanker

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Contact Persons for accommodation & registration: Dr. Karuna Shanker (9415329718) ;
Dr. Neerja Tiwari (08447654304)

