



ICAR-CIRCOT
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पदार्थ विशेषीकरण के लिए स्पेक्ट्रोस्कोपिक और क्रोमैटोग्राफिक तकनीकें

ICAR-CIRCOT Training on

**Spectroscopic and Chromatographic Techniques for Material
Characterization**



Date: February 24-27, 2025

Venue: ICAR-CIRCOT, Mumbai

Organized by

भा.कृ.अनु.प. - केंद्रीय कपास प्रौद्योगिकी अनुसंधान संस्थान, मुंबई

ICAR-Central Institute for Research on Cotton Technology (ICAR-CIRCOT)

D.A.R.E., Ministry of Agriculture & Farmers Welfare, Govt. of India

Adenwala Road, Matunga, Mumbai 400019 (MS) INDIA

About the Institute

The ICAR-CIRCOT, located at Matunga in Mumbai, was established in the year 1924. ICAR-CIRCOT, a unit under the Division of Agricultural Engineering of the Indian Council of Agricultural Research (Department of Agricultural Research and Education, Ministry of Agriculture and Farmers Welfare, Government of India) is engaged in research and development of new technologies for better utilization of cotton and its by-products with following Mandate:

- Basic and strategic research on processing cotton and its agro-residues, development of value added products and quality assessment.
- Skill development and business incubation services and function as a referral laboratory for cotton fibres.

It has well equipped laboratories for characterization of cotton & its by-products and testing of materials.

About the Training program

Newer materials are being developed every day for diversified applications and to meet the consumer demand for improved performance. It is true even for the basic human needs of food and clothing. Food has to be nutritious and free from harmful substances such as heavy metals and pesticides. Similarly, textiles today not only meet the basic human need for clothing and fulfill various quality parameters but are also expected to have various functional characteristics such as antibacterial, flame retardant, UV protective etc. Spectroscopy and chromatography are the two modern techniques which prove to be very helpful in study and characterization of materials. Various forms of spectroscopy such as UV-Visible Spectroscopy, FITR, Atomic Absorption Spectroscopy (AAS) are powerful tools in characterization of any materials. Chromatography techniques such as HPLC on the other hand are separation tool where compounds of interest present in a complex matrix are separated and then identified and characterized. A thorough knowledge of these methods is very much important for the researchers, students and personnel working in the industry,. This unique training programme on spectroscopic and chromatographic methods for material characterization has been designed by CIRCOT for the benefit of the industry personnel as well as researchers to provide them hands on training and to acquaint them with the basics of these techniques and their applications.

Objectives

- ✓ To acquaint the trainees about basic and advanced spectroscopic and chromatographic methods for the characterization of materials including textiles.
- ✓ To demonstrate various analytical techniques and to provide hands on training.

Course Content

- Overview of spectroscopic and chromatographic techniques for material characterization.
- Quantification and identification of compounds using UV-Visible spectroscopy.
- Analysis of fluorescence properties using spectrofluorimetry.
- UV transmittance measurement for determining UPF.
- Molecular structure characterization with FTIR and Raman spectroscopy.
- Analysis of volatile compounds using gas chromatography.
- Separation and quantification of non-volatile components using HPLC.
- Elemental and heavy metal analysis using AAS and ICP-MS.

Training fee

The Programme fee is Rs. 10,000/- +18% GST per participant. The charges include course fee, course material and working lunch. The fee does not include travel, lodging, conveyance and other personal expenses. Students, academic and R&D participants would be given 50% concession in course fee.

Facilities available

- UV – Visible spectrophotometer
- Spectro fluorimeter
- FTIR Spectrophotometer
- UPF analyzer
- Advanced Computer Colour Matching system
- Atomic Absorption Spectrophotometer
- ICPMS
- HPLC
- Gas Chromatograph (GC)
- Gas Chromatograph- Mass Spectrophotometer (GC-MS)
- Raman Spectrophotometer



Date and Venue

February 24-27, 2025 at ICAR- Central Institute for Research on Cotton Technology (CIRCOT), Adenwala Road, Matunga (East), Near Five Gardens, Mumbai - 400019

How to reach ICAR-CIRCOT, Mumbai

From Airport (Domestic)	:	10 km
From Airport (International)	:	12 km
Nearest Railway Station	:	Nearest Railway Station
Nearest Bus Stop	:	Kapol Nivas on Dr. B.R. Ambedkar Road, Matunga (East), and Five Gardens Bus Stop
Land Mark	:	Five Gardens, Matunga (East) (Opp. Customs Quarters)
Google Map Link	:	https://goo.gl/maps/fst1KuarqCnYA5T26

Accommodation

Guest house accommodation at ICAR-CIRCOT is limited and shall be provided at standard rate on first-come-first-served basis for 10 participants on sharing basis

Registration

Interested participants may submit their application in the prescribed format in google forms <https://forms.gle/8Ho1yRC2tTLWLA7R7> Last date for Registration is Feb 15, 2025. After confirmation from the organizer, the fee has to be paid to the below mentioned account by NEFT transfer.

Account Name	Director, ICAR-CIRCOT
Bank Name	State Bank of India, Commercial Branch Dadar East, Mumbai 400014
Account No	10001710244
IFSC Code	SBIN0004114

Programme Director : **Dr. S. K. Shukla,**
Director, ICAR-CIRCOT, Mumbai

Course Director : **Dr. Sujata Saxena,**
HoD, CBPD

Course Coordinators : Dr. A. Arputharaj, Senior Scientist
Dr. N. Vigneshwaran, Principal Scientist
Dr. Manoj Puniya, Scientist
Dr. Kanika Sharma, Scientist

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