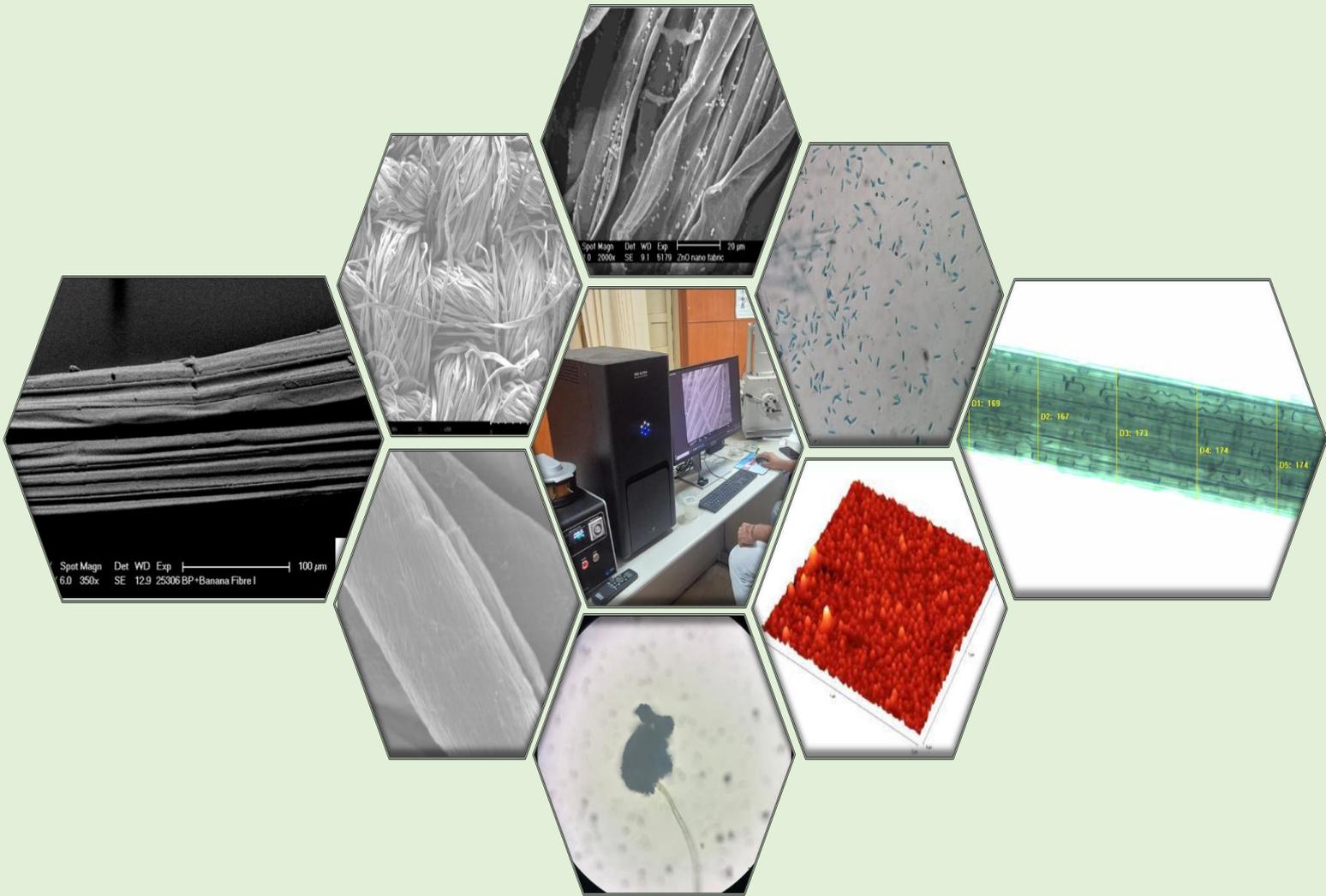




# Training on

# सूक्ष्मदर्शिकी के मूलभूत सिद्धांत और प्रगतियाँ Fundamentals and Advances in Microscopy



**Date: March 23-25, 2026**

**Venue: ICAR-CIRCOT, Mumbai**

**Organized by**

**भा.कृ.अनु.प.-केंद्रीय कपास प्रौद्योगिकी अनुसंधान संस्थान**  
ICAR - Central Institute for Research on Cotton Technology  
D.A.R.E., Ministry of Agriculture & Farmers Welfare, GOI  
Adenwala Road, Matunga, Mumbai-400019, India

## Introduction

The ICAR–Central Institute for Research on Cotton Technology (ICAR-CIRCOT), established in 1924, is a premier ICAR institute under the Ministry of Agriculture and Farmers Welfare (GOI). The Institute is engaged in research and development of innovative technologies related to post-harvest processing and value addition of cotton and its by-products, along with undertaking skill development activities and functioning as a referral laboratory for cotton fibres. With well-equipped basic and advanced microscopy facilities, ICAR-CIRCOT has extensively utilized microscopic techniques to advance research in cotton biomass utilization, fiber morphology and surface characterization, nanomaterials and nano-fertilizer analysis, textile processing, and functional textile development, thereby strengthening interdisciplinary research and translational outcomes.

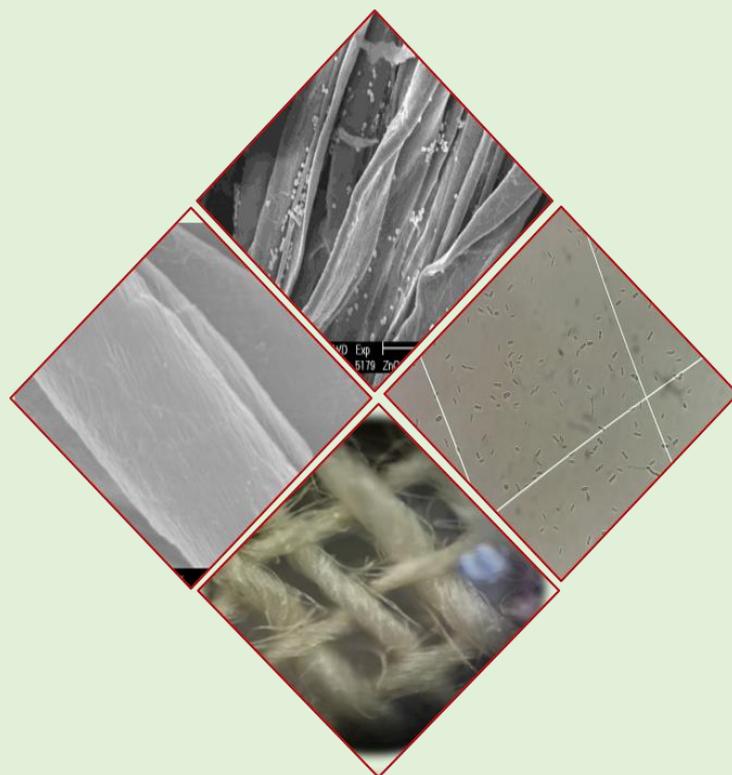
## About the Training Programme

This training programme is designed for researchers engaged in biological, chemical and material sciences, emphasizing the fundamentals and applications of light, fluorescence, electron, and atomic force microscopy. This training aims to advance microscopy knowledge of participants via bridging the gap between theoretical concepts and practical application by strengthening core concepts such as optics, resolution, contrast mechanisms, sample preparation, and imaging artifacts utilized used in modern research laboratories.

Key components of training include basics and advances in optical, fluorescence, polarised, phase-contrast, scanning electron microscopy, atomic force microscopy and projection microscopy for biological and material analysis, along with standardized protocols for sample preparation, instrument calibration, and image acquisition/analysis. The programme also addresses experimental design, troubleshooting, and technique selection, equipping participants with the technical competence and analytical clarity required for interdisciplinary and translational research applications.

## Training objectives

- To acquaint the participants with fundamentals (optics, resolution, contrast mechanisms, and imaging modes) and advances in the field of microscopy
- To impart practical knowledge on microscopic characterization of cotton fibers and textiles, focusing on surface morphology, processing-induced changes, and functional finishes.
- To demonstrate the application of microscopy in microbial analysis (morphology, staining, and viability assessment), and nanomaterial characterization



## Course Contents

- Fundamentals of Microscopy: Optics, resolution, contrast mechanisms, imaging modes, and limitations of light and electron microscopy.
- Optical and Fluorescence Techniques: Bright-field, polarised, phase-contrast, fluorescence, and projection microscopy for biological, textile, and nanomaterial applications.
- Advanced Microscopy Techniques: High-resolution analysis using SEM, AFM.
- Standard Protocols and Applications: Sample preparation, instrument calibration, and use in microbial analysis, fiber surface morphology, textile and nanomaterials characterization

## Facilities Available

- Compound Microscope
- Polarized Light Microscope
- Phase Contrast Microscope
- Fluorescent Light Microscope
- Projection Microscope
- Scanning Electron Microscope
- Atomic Force Microscope



Atomic Force  
Microscope



Fluorescence  
Microscope



Scanning Electron  
Microscope

## Date and Venue

- **March 23-25, 2026** at ICAR- CIRCOT, Adenwala Road, Matunga (East), Mumbai -400019

## Fee Structure

- Rs. 8,000/- (+18% GST) per person for participants from industry and Rs. 4000/- (+18% GST) for students, researchers, academicians, and participants from NARS system, including ICAR employees. The fee includes programme fee, course material, breakfast, tea and working lunch and excludes travel, lodging, dinner, conveyance and other personal expenses.
- Scheduled Caste (SC) and NEH region candidates: Fee are exempted. The expenditure of participants including travel (restricted to 3 tier AC), boarding & lodging during training period will be borne by Institute as per the guidelines of Govt of India.

## Registration

- Interested participants may submit their duly filled application along with the payment receipt in the prescribed format in google forms via the link: - <https://forms.gle/p83WVvk9oYV7YieBk9>
- Last date for Registration is **March, 16, 2026**. The registration fee has to be paid to the below mentioned bank account details by either **NEFT transfer**, UPI ID or QR code

Bank account details:	UPI CODE
Beneficiary name: : Director, CIRCOT	UPI ID : circot@sbi  BHIM UPI BANK INTERFACE FOR MONEY UNITED BENEFIT SERVICE
Name of the Bank: : State Bank of India	
Account Number: : 10001710244	
IFSC Code: : SBIN0004114	
UPI ID: : circot@sbi	

## Accommodation

Guest house accommodation at ICAR-CIRCOT is limited and shall be provided at standard rate on first-come-first-serve basis in sharing (A/c) accommodation.

## How to reach ICAR-CIRCOT

From Domestic Airport	:	10 km
From International Airport	:	12 km
Nearest Railway Station	:	Dadar (1.7 km)
Nearest Bus Stop	:	Kapol Nivas on Dr. B.R. Ambedkar Road, Matunga (E), and Five Gardens Bus Stop
Land Mark	:	Five Gardens, Matunga (East) (Opp. Customs Quarters)
Google Map Link	:	<a href="https://goo.gl/maps/fst1KuarqCnYA5T26">https://goo.gl/maps/fst1KuarqCnYA5T26</a>

## Organizing Committee

<b>Programme Director</b>	:	Dr. S. K. Shukla, Director, ICAR-CIRCOT, Mumbai
<b>Course Director</b>	:	Dr. N. Vigneshwaran, Principal Scientist & Head In-charge, CBPD
<b>Programme Coordinator</b>	:	Dr. Ajinath Dukare, Senior Scientist, CBPD,
<b>Programme Co-Coordinators</b>	:	Dr. Sharmila Patil, Scientist, QEID Dr. A.S.M. Raja, Principal Scientist and Head, QEID

## Address for Correspondence

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**Division,**  
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**Phone No. (O): 022-24127273 Extn. 113**

