



Training on Advances in Microscopy

Nano Filter



NCC AFM



AFM images of nanocellulose



Core Sheath Nano Yarn



C.S of Cotton Fibre



SEM Cotton fibre



January 16-18, 2017

Organized by

**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 (MH) INDIA**

Introduction

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 referral laboratory for cotton fibres.

About the training programme

Polarised Light Microscope is useful for analyzing samples with optical anisotropy and finds its use in diverse fields of Material Science Including Fibre science and nanotechnology. ICAR-CIRCOT uses Scanning Electron Microscope (SEM) for research activities related to fine structure and morphology of fibrous materials including natural fibres and fibre composites. SEM is very useful in the physical characterization of nanomaterials and composites. Atomic Force Microscope (AFM), also called as Scanning Force Microscope uses the force of interaction between probe and sample for imaging with a resolution of atomic scale. Mechanical properties like elastic modulus, stiffness and force of adhesion could also be analyzed using AFM. ICAR-CIRCOT uses AFM for analysis of various types of nanomaterials & nanocomposites. The fluorescence microscope at ICAR-CIRCOT is being used to observe fluorescent dyes in textiles, fluorescent labeled biological systems and other fluorescent materials. Advanced knowledge on microscopy is very useful for researchers and students. This training module on 'Advances in Microscopy' is designed to impart advanced knowledge in all aspects of the microscopy.

Objectives

To acquaint participant with recent advances in the field of light microscopy, electron microscopy and atomic force microscope

To impart a hands-on training on sample preparation techniques used in LM, SEM and AFM and operation of different types of microscope

To demonstrate the application of Light Microscopy, Scanning Electron Microscopy and Atomic Force Microscopy in Textiles, Nano materials, Composites, Chemical and Polymer industry, Biological sciences etc.

Course content

Light Microscopy

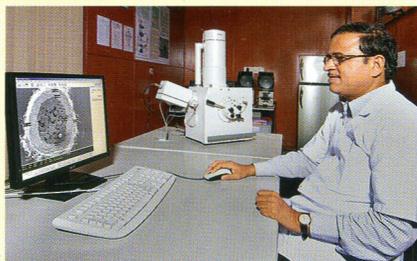
- Introduction to light microscopy
- Polarized light microscopy and its application
- Fluorescent light microscopy and its application
- Application of light microscope in textiles

Scanning Electron Microscopy

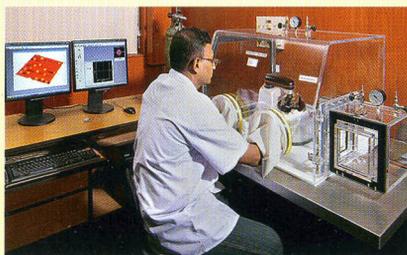
- Principle and operation
- Methods of scanning
- Applications of SEM in different fields

Atomic Force Microscopy

- Basics of AFM
- Sample preparation for AFM
- Different Imaging modes
- Mechanical properties by AFM



Scanning Electron Microscope (SEM)



Atomic Force Microscope (AFM)

Facilities Available

- Polarized light microscope
- Fluorescent light microscope
- Scanning electron microscope
- Atomic force microscope

Date and Venue

January 16-18, 2017 at ICAR-Central Institute for Research on Cotton Technology (ICAR-CIRCOT), Adenwala Road, Matunga (East), Near Five Gardens, Mumbai 400019.

Accommodation

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

Fees

The programme fee is Rs. 15,000 + 15% service tax per person. The charges include course fee, course material and working lunch. The fee does not include travel lodging and conveyance and other personal expenses. Students and NARS participants, 50% concession in fee would be given.

How to apply

The interested participants may send their applications in the prescribed format available on the website www.circot.res.in. The fee in the form of DD drawn/ at par Cheque in favour of "Director, CIRCOT" payable at Mumbai, may be sent to the below mentioned address so as to reach us on or before January 9, 2017. The Bank account details for NEFT transfer is available in registration form.

How to Reach CIRCOT

From Airport (Domestic)	: 10 km
From Airport (International)	: 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
Landmark	: Five Gardens

Organizers

Course Director	: Dr. P. G. Patil, Director, ICAR-CIRCOT
Course Coordinator	: Dr. N. Vigneshwaran Sr. Scientist, CBPD Mr. G. B. Hadge, ACTO, TTD Dr. M. V. Vivekanandan, ACTO, AKMU, TTD

Address for correspondence

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