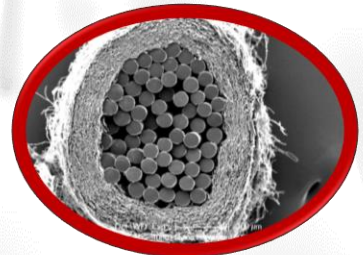
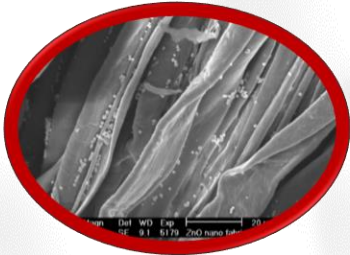


ICAR-CIRCOT Training on

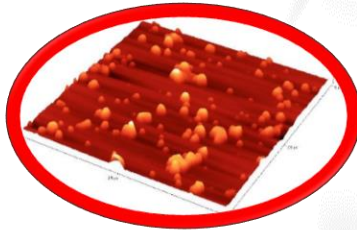
# नैनो प्रौद्योगिकी के अनुप्रयोगों में उन्नतियाँ

## Advances in Applications of Nanotechnology

(Self-Sponsored)



### Nanotechnology



Date: Oct 30 to Nov 3, 2023

Venue: ICAR-CIRCOT, Mumbai

Organized by

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

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

## Introduction

The ICAR-Central Institute for Research on Cotton Technology (ICAR-CIRCOT), one of the premier constituent institutes of the Indian Council of Agricultural Research (ICAR), was established in the year 1924. The Institute is conducting research and development on all aspects of post-harvest processing of cotton and value addition to cotton by-product.

## About the Training Programme

Nanotechnology deals with the manipulation of atoms, molecules, or molecular clusters to create functional materials and devices with enhanced & desirable properties. The first use of the concept of 'nanotechnology' was in "*There's Plenty of Room at the Bottom*", a talk given by physicist **Richard Feynman** in 1959. ICAR-CIRCOT has done pioneering work in the field of nanotechnology and has developed more than eighteen years of experience and expertise in the synthesis & characterization of nanomaterials and its application in textile finishing, fertilizers, development of nanocomposites and pulp & paper. In 2015, ICAR-CIRCOT has established India's First Nanocellulose Pilot Plant. With this background, advanced trainings are being arranged to share the knowledge with diverse stakeholders. This training module is 18<sup>th</sup> in the series designed to impart basic and advanced knowledge of nanotechnology and its applications.

## Objectives

- ✓ To acquaint the participants with recent advances in the field of nanotechnology
- ✓ To impart hands-on training on synthesis & characterization of nanomaterials
- ✓ To demonstrate the application of nanomaterials in textiles, composites, pulp & paper, filtration, sensors, agriculture & allied sectors

## Course Contents

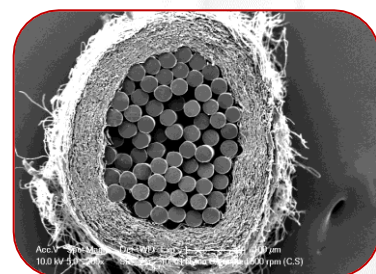
- Basics & Advances in Nanotechnology
- Synthesis of Nanomaterials (Methods: Physical, Chemical, Mechanical & Biological)
- Characterization of Nanomaterials
- Application of Nanomaterials in Textiles, Composites, Filtration, Paper and Agriculture
- Life cycle analysis of nanomaterials & Nanotoxicology
- Business Incubation opportunities in Nanotechnology

## Training Fee

The training fee is Rs. 20,000 + 18% GST per person. The fee includes programme fee, course material, breakfast, tea and working lunch. The fee does not include travel, lodging, conveyance and other personal expenses. There is 50% fee concession for students, academicians and participants from NARS, R&D Organizations, Institutions, Colleges and Universities. Limited seats are available for this training programme.



**Nano-ZnO Particles on Cotton Fabric**



**Electrospun Nanofibers on Nylon Filaments**

## Facilities Available

- High pressure homogenizer and High shear homogenizer
- High energy Ball Mill and Vibratory mill
- Nanoparticle size analyzer (DLS)
- Atomic Force Microscope (AFM)
- Electrospinning and Electrospaying facilities
- X-Ray Diffraction (XRD)
- BET analyzer, ICP-MS
- Scanning Electron Microscope (SEM)
- Spectrofluorimeter
- FTIR, Raman Spectrometer
- Ultracentrifuge
- Textile processing, finishing & Characterization facilities
- Bio-Nanocomposites making & Characterization facilities
- Nanocellulose Pilot Plant



**Fermentor**



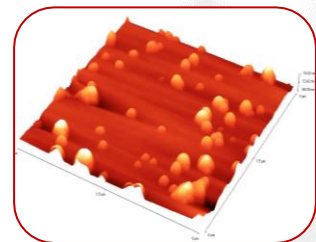
**Nanocellulose Pilot Plant**

## Date and Venue

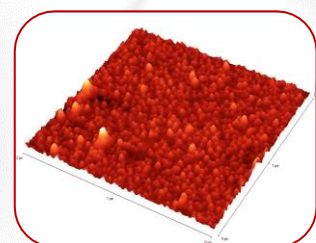
Oct 30 to Nov 03, 2023 at ICAR- Central Institute for Research on Cotton Technology (ICAR-CIRCOT), Adenwala Road, Matunga (East), Near Five Gardens, Mumbai 400019.

## How to reach ICAR-CIRCOT, Mumbai

From Airport (Domestic)	: 10 km
From Airport (International)	: 12 km
Nearest Railway Station	: Dadar (1.7 km)
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	: <a href="https://goo.gl/maps/fst1KuarqCnYA5T26">https://goo.gl/maps/fst1KuarqCnYA5T26</a>



**Nanocellulose**



**Nanolignin**

## Accommodation

Guest house accommodation at ICAR-CIRCOT, Mumbai is limited and sharing accommodation (A/c) will be provided at standard rates on first-come-first-serve basis

## Registration

Interested participants may submit their application in the prescribed format in google forms <https://tinyurl.com/CIRCOTnanoTraining>. Last date for Registration is October 26, 2023. 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

## Organizing Committee

- Programme Director : **Dr. S. K. Shukla**,  
Director, ICAR-CIRCOT, Mumbai
- Course Director : **Dr. Sujata Saxena**,  
HoD, CBPD
- Course Coordinators : **Dr. N.Vigneshwaran**, Principal Scientist  
Dr. A. K. Bharimalla, Principal Scientist  
Dr. A. Arputharaj, Senior Scientist  
Dr. T. Senthilkumar, Senior Scientist  
Dr. G.T.V. Prabu, Senior Scientist  
Dr. M. K. Mahawar, Scientist



**Nano-ZnO finished  
Cotton fabrics**

## Address for correspondence

### Dr. N. Vigneshwaran

Principal Scientist, CBPD

ICAR-Central Institute for Research on Cotton Technology

Adenwala Road, Matunga (E), Mumbai-400 019

**Mobile No.** : 08291478515 / 09702878249

**Tele.** : 022-24143718 (D) / 022-24127273/76

**Email** : circotnano@gmail.com, abicircot@gmail.com

**Website** : circot.icar.gov.in



**NCC-Starch film for  
packaging**



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