

## How to apply

Interested participants may register the google form:

[https://docs.google.com/forms/d/e/1FAIpQLSeywxD6JFKFKaGia\\_pOanYLTv\\_agsvU9Ye2KQbm6Jsq\\_wLTIA/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSeywxD6JFKFKaGia_pOanYLTv_agsvU9Ye2KQbm6Jsq_wLTIA/viewform?usp=sf_link)

The fee in the form of NIFT/ 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 24th February, 2024. The Bank account details for NEFT transfer is given below:

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

## How to Reach CIRCOT

From Airport (Domestic) : 10 km From

Airport (International) : 12 km

Nearest Railway Station : Dadar (1.7 km)

Land mark : Matunga (E) and Five Gardens Bus Stop

Land mark : Five Gardens, Matunga East

## Organizers

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

Course Director : Dr. N. Shanmugam, PS & Head, MPD

Course Coordinators : Dr. T. Senthilkumar, Senior Scientist, MPD  
Dr. G. Krishna Prasad, Senior Scientist, MPD  
Dr. G.T.V.Prabu, Senior Scientist, MPD  
Dr. A. K. Bharimalla, Principal Scientist, E-TTD

## Address for correspondence

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ISO 9001:2015  
NABL 17025:2017

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

# Training on Composite Materials and its Applications



06-08 March, 2024

**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 (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-produce 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.

The Institute has been conducting skill development programmes to propagate, encourage and guide entrepreneurs to successfully adopt and market commercially viable technologies and to equip people with best practices in cotton ginning, quality evaluation of cotton fibres and value addition to by-products.

## About the training programme

Composites are hybrid materials made of a polymer resin reinforced by fibres, combining the high mechanical and physical performance of the fibres. Composite materials offer higher specific strength and stiffness than other conventional materials. The reinforcing phase, is in the form of synthetic or natural fibres, sheets, or particles, and is embedded in the other materials called the matrix phase. The Indian composites market is expected to reach an estimated \$1.9 billion by 2026 with a CAGR of 16.3% from 2021 to 2026. The future of the Indian composites market looks promising with opportunities in pipe and tank, aerospace and defence, wind energy, electrical and electronics, construction, transportation, marine and telecommunication. The depletion of petroleum resources coupled with awareness of global environmental issues has generated the need for new green materials independent of petroleum based resources. The development of completely biodegradable composite materials using biopolymers has a great scope in future.

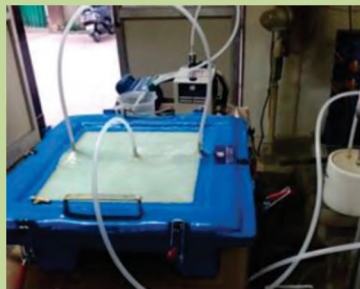
Hence acquiring the basic knowledge is very essential to be effective in the industry and R&D sectors for making better products. ICAR-CIRCOT is actively carrying out research in the field of fibre reinforced composites for many years, with emphasis on lignocellulosic fibre based composite, Nano based bio composite, starch based green composite and nanocomposite for various applications such as cement concrete, paper, agricultural, packaging materials etc.,. Based on the expertise gained in the field of fibre reinforced composites, ICAR-CIRCOT has designed this training programme for the benefit of industry personnel, researchers, academicians and students.

## Objectives

- To impart knowledge on reinforcement used in manufacture of composites
- To equip participants with knowledge on resins and bio composites
- To familiarise the trainees about principles of various composites manufacturing process

## Course Content

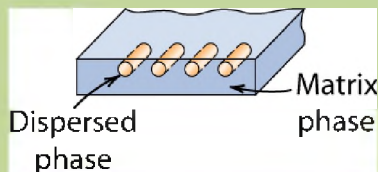
- Introduction to composite materials
- Reinforcement and matrix
- Composite production techniques
- Characterization of composites
- Natural fibre reinforced composite
- Nanocomposites
- Bio-nanocomposite films for packaging
- Nano fibrous composites for agricultural application
- Rubber composites
- Composite based smart textiles



**Vacuum Infusion Moulding**

## Hands on Training

- Hands-on training on composite preparation
- Demonstration on Bio-nanocomposite films preparation
- Demonstration on particle board preparation
- Industry visit – Rubber Composite unit



**Fibre Reinforced Composites**

## Date and venue

March 6-8, 2024 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 sharing accommodation shall be provided at standard rate on first-come-first-serve basis.

## Fees

- For Industry Personnel : Rs. 10, 000 + GST (18%)
  - For Academicians, Students and NARS Personnel: Rs. 5, 000 + GST (18%)
- The course fee include, course material and working lunch. The fee does not include travel, lodging, conveyance and other personal expenses.