# How to apply

Interested participants may send their application in the prescribed format which is 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 27<sup>th</sup> January, 2019. 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)
Nearest Bus Stop	: Kapol Nivas on Dr. B.R. Ambedkar Road
1	Matunga (E), and Five Gardens Bus Stop
Landmark	: Five Gardens, Matunga
Organizers	
Course Director	: Dr. P. G. Patil, Director, ICAR-CIRCOT
Course Coordinators	: Dr. T. SenthilKumar, Scientist, MPD,
	Dr. G. Krishna Prasad, Scientist, MPD,
	Er. V. G. Arude, Scientist, MPD

## Address for correspondance

Dr. T. Senthilkumar, Scientist, MPD, ICAR-CIRCOT Adenwala Road, Matunga, Mumbai- 400 019 Telefax : +91 22-24127273/76 (Ext- 340) Mobile : +91 9699066654 Email : senthilauc@gmail.com Dr. Ashok Kumar Bharimalla I/c Head ,TTD, ICAR-CIRCOT, Adenwala Road, Matunga, Mumbai- 400 019 Website : www.circot.res.in Email : training.circot@icar.gov.in Mobile : +91 9702878249, Telefax : 022-24143718 (Direct), 022-24127273/76 Ext- 467 Fax : 022-24130835 / 24157239











# तंतु प्रबलित कम्पोजिट पर प्रशिक्षण Training on Fibre Reinforced Composites



Designed by : Miss. Laxmi Manoj Singh, YP-LL,TTE

## 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 agoresidues, 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. Composites are one of the most widely used materials because of their adaptability to different situations and the relative ease of combination with other materials to serve specific purposes and exhibit desirable properties. 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. They have the potential for use in boats, automotive parts, chemical equipments, civil engineering application, aircrafts and agricultural machineries. 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 bio-polymers 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 biocomposite, starch based green composite and nanocomposite for various applications such as cement concrete, paper, 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 green composites
- To familiarise the trainees about principles of various composites manufacturing process

## **Course Content**

- Introduction to composite materials
- Synthetic reinforcement and matrix
- Natural reinforcement and matrix
- Composite production techniques
- Characterization of composites
- Biocomposites
- Nanocomposites
- Green composites
- Hands-on training on composite preparation

## **Facilities Available**

- Compression moulding machine
- Hand lay-up techniques
- Vaccum infusion moulding
- Vaccum bag moulding
- Universal testing machine
- Conical refiner for natural fibre fibrillation

#### Date and venue

February 04-06, 2019 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 (A/c) 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 charges include course fee, course material, breakfast, and working lunch. The fee does not include travel, lodging, conveyance and other personal expenses.



**Vacuum Infusion Moulding** 



**Composites**