

## How to apply

Interested participants may send their application in the prescribed format which is available on the website [www.circot.res.in](http://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 14<sup>th</sup> December 2017.

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 ICAR-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, Matunga

## Organizers

Course Director : Dr. P. G. Patil, Director, ICAR-CIRCOT  
Course Coordinators : Dr. M. V. Vivekanandan, ACTO, TTD  
Dr. P. S. Deshmukh, Scientist, TTD  
Mr. S. Banerjee, ACTO, TTD  
Dr. Sharmila Patil, Scientist, TTD  
Dr. Archana Mahapatra, Scientist, TTD

## Address for correspondence

Er. Ashok Kumar Bharimalla  
I/C Head, TTD, ICAR-CIRCOT,  
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# Training on Characterization of Materials Using X-Ray Diffractometer (XRD)



**December 21-23, 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 (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 technology of cotton and value addition to cotton by-produce with following mandate:

- Basic and strategic research on processing cotton and its ago-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

X-Ray Diffraction (XRD) is a high tech, non-destructive technique for analyzing wide range of materials. XRD analysis is based on scattering of monochromatic X-Rays when impinged upon a crystalline sample. Scattered X-Rays produces diffraction pattern consisting of a series of peaks and troughs that carry information about internal structure of materials under study. XRD testing provides information on structures, phases, preferred crystal orientations (texture), and other structural parameters, such as average grain size, crystallinity, strain, and crystal defects. X-Ray powder diffraction pattern is the fingerprint of periodic atomic arrangements in a given material and thereby enables quick phase identification for a large variety of crystalline samples. XRD finds critical applications in diverse areas of science and technology including geology, environmental science, material science, engineering and biology. This training programme intends to create knowledge on the XRD technique.

## Objectives

- To familiarise the trainees about principles of XRD analysis, XRD instrumentation and sample preparation
- To impart hands on training on sample preparation, operation and analysis of samples on XRD

## Course Content

- Principles of X-Ray Diffraction (XRD) analysis of materials
- Different types XRD instrumentation and its applications
- Preparation of sample for XRD Analysis
- XRD analysis of polymer materials
- Application X-Ray Diffraction techniques in Nano-Materials Technology
- Hands on training on XRD

## Facilities Available

- PANalytical X'Pert Pro MPD X-Ray Diffractometer
- Sample preparation aids



X-Ray Diffractometer (XRD) Lab

## Date and venue

December 21-23, 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-come-first-serve basis in sharing basis (A/c) accommodation.

## Fees

The programme fee is Rs. 30,000 + service tax (as applicable) per person. The charges include course fee, course material, breakfast and working lunch. The fee does not include travel, lodging and conveyance and other personal expense. There is 50% concession for students, academicians and participants from NARS.