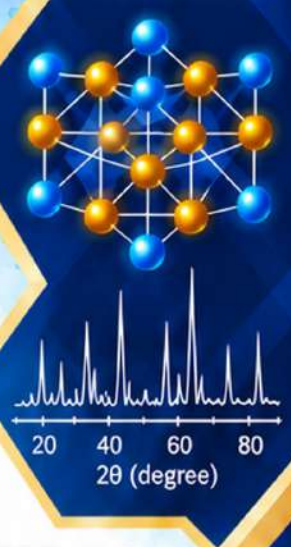
Department of Materials Science and Metallurgical Engineering,
Indian Institute of Technology Hyderabad (IIT Hyderabad),
jointly with **American Ceramic Society, Southwest India Chapter** and
**Indian Ceramic Society (InCerS), Hyderabad Chapter**
Organizes

# ICDD WORKSHOP ON

# X-RAY DIFFRACTION

## FUNDAMENTALS • TRAINING • SOFTWARE ANALYSIS




This workshop provides comprehensive training on the use of the **ICDD PDF-5 database** and **JADE Pro software** for **X-ray powder diffraction (XRD)** analysis and materials characterization. It bridges fundamental diffraction concepts with practical applications in crystalline material analysis through a combination of expert lectures and extensive hands-on sessions. Participants will gain experience in data mining, phase identification, quantitative phase analysis, and structural refinement using the ICDD PDF-5 database and MDI JADE Pro software.

The workshop is intended for **research scholars, postgraduate (Master's) students, faculty members, and industry professionals** from disciplines such as **Materials Science, Physics, Chemistry, Pharmaceutical Sciences, Nanotechnology, Metallurgy, Geology, and related fields.** Hands-on access to PDF-5 and JADE Pro will be provided through a remote desktop server. Participants should bring a laptop with a standard web browser (Edge, Chrome, or Firefox); macOS users should have a Windows emulator installed.

## Speakers



**Dr. Soorya N. Kabekkodu**
(Editor-in-Chief, International Centre for Diffraction Data (ICDD), USA)



**Prof. T. N. Guru Row**
(Emeritus Professor, SSCU, Indian Institute of Science, Bangalore)



**Prof. A. M. Umarji**
(Emeritus Professor, MRC, Indian Institute of Science, Bangalore)

## WORKSHOP DETAILS

**Date:**
4th & 5th December, 2026

**Venue:**
LH3, MSME Building, Indian Institute of Technology, Hyderabad

## ORGANIZING COMMITTEE

**Patron**
**Prof. B. S. Murty**
Director, IIT Hyderabad

**Chairperson**
**Prof. Mudrika Khandelwal**
Head, MSME, IIT Hyderabad

**Conveners**
**Dr. Suresh Perumal**
Assistant Professor, IIT Hyderabad

**Dr. Venkat Yakatpure**
Scientist F, DMRL, Hyderabad

**Dr. C. D. Madhusoodana**
BHEL Corp R&D, Hyderabad

Connect with us - Dr. Suresh Perumal - 7022565805 | Mail id - msmeicdd2026@gmail.com

# PROGRAMME SCHEDULE :

## Day 1: 04th December, 2026

| Time | Programme |
|---|---|
| 09:30 - 10:00 AM | Inaugural Function |
| 10:00 - 10:30 AM | High Tea |
| 10:30 - 11:00 AM | Powder Xray Diffraction Method and Application |
| 11:00 - 12:30 PM | Diffraction Geometry, Systematic Angular Errors and Calibration Procedures, Sample Preparation |
| 12:30 - 01:00 PM | Setting up PDF-5 + and JADEPro access |
| 01:00 - 02:00 PM | **Lunch Break** |
| 02:00 - 03:30 PM | Hands- on Session: Introduction to Search/ Match Procedures with PDF-5/ Sieve+, PDF-5+ Database and Features Overview, Data mining |
| 03:30 - 04:00 PM | **Tea Break** |
| 04:00 - 05:30 PM | Phase Identification Method<br>Qualitative and Semi-quantitative Phase Analysis, Advanced Phase Identification (With Amorphous Component, Trace Phases), Additional Problem Solving, Q&A |

## Day 2: 05th December, 2026

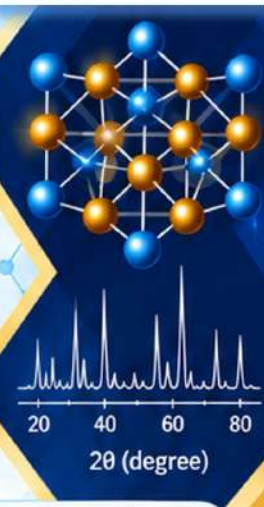
| Time | Programme |
|---|---|
| 09:00 - 9:30 AM | Data collection strategies |
| 9:30- 11:00 AM | Indexing, Introduction to profile functions, Fitting And quantity phase analysis using Rietveld method |
| 11:00-11:30 AM | **Tea break** |
| 11:30 - 1:00PM | JADEpro hands-on sessions<br>JADEpro features overview, Angular Calibration ( Instrument Profile Curve, IPC), Pattern indexing Using JADE |
| 1:00 - 02:00 PM | **Lunch Break** |
| 02:00 - 03:30 PM | JADEpro hands-on sessions<br>Whole Pattern Fitting (WPF) and Rietveld Refinement, Phase Identification and Quantitative Phase Analysis (Rietveld), Crystallinity Measurement, Crystallite size and Micro-strain Analysis |
| 03:30 - 04:00PM | Q&A, Concluding Remarks and Feedback From Participants followed by High Tea |

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# ICDD WORKSHOP ON

# X-RAY DIFFRACTION

**FUNDAMENTALS • TRAINING • SOFTWARE ANALYSIS**




## REGISTRATION DETAILS

**Last date to register:**
**16 NOVEMBER 2026**

**Limited to 50 participants.**
Register as soon as possible.

Participants should carry their own laptop with full charge for hands-on training sessions.

**Lunch, tea and workshop kit** will be provided to all participants.

Hostel accommodation can be provided on a payment basis, subject to availability (Rs. 350/day).

Accommodation at the International Guest House can be provided on prior enquiry and is subject to availability.

Attendance is mandatory to receive the certificate of participation.

## REGISTRATION FEES

| Category | Fee (INR) |
|---|---|
| M.Tech / PhD Student | Rs. 2,000/- |
| Faculty | Rs. 4,000/- |
| Industry | Rs. 6,000/- |

## PAYMENT DETAILS

| | | |
|---|---|---|
| Beneficiary | : | The Indian Ceramic Society |
| Bank Account no. | : | 08560100007854 |
| Bank Name | : | Bank of Baroda |
| Branch | : | Jodhpur Park, Kolkata |
| Branch Code | : | JODCAL/0856 |
| Bank Code | : | 012 |
| IFSC & RTGS Code | : | BARBOJODCAL (Fifth character is zero) |
| MICR Code | : | 700012018 |
| SWIFT Code | : | BARBINBBIBB |

## REGISTER ONLINE

Scan the QR code to register

**Google Form Link:**

https://forms.gle/st4MUp9fjzv1Wy2D9

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