

On

# Thin Film Deposition Techniques & Characterization Methodologies

Course Code: 4203

09th - 11th June 2025

## Targeted Audience :-

Scientists, Engineers, R&D professionals, Teaching professionals, Lab Technicians, Researchers, and Project Assistants, PG students.

## CONTACT US



**9449842686/78**



**training@cmti.res.in**

## About AEAMT

Centre for Skill Development, is a flagship initiative of CMTI, aims to enhance the knowledge and skills of practicing engineers, create job ready engineers to the Indian Manufacturing sector and to bridge the gap between industry and academia.

## Focused Area / Objectives :

- 1) Acquire the necessary skills and knowledge to conduct research, development, and industrial applications in the field of thin-film deposition.
- 2) Gain a comprehensive understanding of the principles and mechanisms Magnetron Sputtering, Plasma-Enhanced Chemical Vapor Deposition (PECVD), E-Beam Evaporation and Electroplating techniques.
- 3) Explore the characterisation methodologies for mechanical, electrical, and chemical properties of thin films.

## Programme Co-ordinator :

**Dr. Manjunath K**, is a Scientist-B at the Centre for Micro-Nanomanufacturing and Metrology (C-MNTM) at CMTI. He has received his Ph.D. in Engineering from CSIR-Central Scientific Instruments Organisation, Chandigarh in 2024 and has practical knowledge in coatings. He also possesses knowledge and research experience in thin film deposition techniques, Optical Instrumentation, computational mechanics, micro/nano manufacturing etc.

**Dr. Prabhanjan**, is a Scientist-C at the Centre for Sensors & Vision Technology (C-SVT) at Central Manufacturing Technology Institute, Bangalore. He received his PhD degree from National Institute of Technology, Calicut in 2019. His research area is focused on the development of sensor technologies such as magnetic sensors, pressure sensors, position sensors, angle sensors etc. He has hands-on experience of more than 5 years in thin film deposition techniques such as sputtering, E-beam evaporation, electroplating, etc.

## Programme Schedule :

it is a **03 Days** Non - Residential Training Programme scheduled during **09th -11th June 2025**. The Programme will be held at Central Manufacturing Technology Institute, Bengaluru.

## Participation Fees :

Rs. 11,700/- plus GST @ 18%\*\*\*, per participant. This includes Course Kit, working veg lunch, midsession tea.



Course Fee can be paid through NEFT / RTGS / Demand Draft. Demand Draft to be drawn in favor of "Central Manufacturing Technology Institute", payable at Bengaluru and should reach CMTI one week before the actual date of commencement of the course

### **Beneficiary for RTGS/NEFT**

a) Name	:	Central Manufacturing Technology Institute
b) GST No	:	29AAATC2085K1ZJ
c) Account No	:	10521862015
d) Bank Name & Branch	:	State Bank of India, Yeshwanthpur Branch
e) IFSC Code	:	SBIN0003297
f) MICR Code	:	560002055

### **Additional Information :**

- A 10% rebate on course fee will be given to organizations nominating 3 or more participants for each programme, only if payment is made in advance, ten days before the commencement of the course.
- Individuals/ Companies interested in participation are requested to fill in the enclosed Enrollment Form and submit at the earliest.
- Participants are advised to proceed for the programme only after the nominations / Programme confirmed by us (by Fax / Letter / Phone / E-Mail).
- Participants should report at CMTI on the day of commencement of the course. Participants are advised to reach Bangalore the previous day evening/ night.
- Course will be conducted from 09:00 to 17:00 hrs. Participants may plan their return journey accordingly.
- Participants will be given Certificate after the completion of the Training Programme
- Enclosed are the tentative programme contents for ready reference
- GST No. to be shared while sending your nomination / Registration (If a company is exempted from GST they have to provide GST Exemption certificate).
- Please note that Course fee once paid will not be refunded. However, change in nomination will be permitted.

**Note: \*\*\* Taxes and other levies will be charged as per the prevailing rates at the time of Billing**

## Tentative Programme Schedule

Days	Topics
<b>Day 1</b>	Introduction to Thin Film Deposition & Vacuum Technologies
	Physical Vapor Deposition (PVD) Techniques
	Plasma enhanced Chemical Vapour Deposition: Film growth mechanisms and process parameters
	Practical Session I(a): Sample Preparation for PVD/PECVD & Deposition
	Practical Session I(b): PVD/PECVD Based DLC Coating & CNT Growth
	Lab visits in CMTI @ NMTC
<b>Day 02</b>	Introduction to Electron Beam Deposition
	Introduction to Electroplating
	Thin film case studies (Effect of seed layer, morphology, flexible substrate, annealing, stress etc.)
	Practical Session II(a): E-beam Evaporation
	Practical Session II(b): Electroplating
	Lab visits in CMTI @ STDC
<b>Day 03</b>	Thin film characterization techniques- I Structural properties
	Thin film characterization techniques- II Mechanical properties
	Thin film characterization techniques- III
	Practical Session III(a): Thin-film Characterization
	Practical Session III(b) Thin-film Characterization
	Concluding Session

**For further enquiries / registration / nominations, please contact:  
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