



**Short Term Course
Programme
on
Materials Processing and
Characterization
(MPC 2019)
22 - 26, July 2019**



Organized by
Advanced Carbon Products and Metrology Section
CSIR-National Physical Laboratory, New Delhi-12
www.nplindia.org

Objectives of the Course

CSIR - National Physical Laboratory is conducting a 5-Day Short Term Course Programme on "**Materials Processing and Characterization**" during 22 -26, July 2019 at CSIR-NPL campus. The objective of the course is to acquaint the researchers with the various processing & characterization techniques used in the area Material Science and Technology. This will help to practice them for further R&D related activities in the state-of-art and the cutting-edge technologies in the field of materials/nano-materials. Training will be given on various state-of-the-art materials processing techniques, such as, Arc Melting, Spark Plasma Sintering, Melt Spinning, Electro Spinning of nano-fibers, chemical vapor deposition for CNT and Graphene synthesis, compression molding, extrusion, injection moulding, for polymer and polymer composites processing.

Course will be given for different characterization techniques like XRD, Thermo Gravimetric Analysis, Dynamic Mechanical Analyzer, Universal Testing Machine, Raman & UV-Vis Spectrophotometer, Thermoelectric Characterizations which includes Thermo Power, Electrical Conductivity, Specific Heat, Thermoelectric Device Efficiency by miniPEM, Vibrating Sample Magnetometer (VSM), Hall Measurement, and Surface Morphology Analysis through Field Emission Scanning Electron Microscope (FE-SEM).

Also, it is a unique opportunity to acquire training in Materials Processing and Characterization techniques under one umbrella. More-over CSIR-NPL being the National Metrology Institute of the country, the delegates will also be acquainted with general, yet necessary requirements of testing under standard Measurement protocols as per ISO Guidelines, Harmonization of measurement methods for the best practices and standards under Versailles Project on Advanced Materials and Standards (VAMAS).

VAMAS provides an opportunity to develop new Reference Materials and Standards under different Technical Areas.

Hands on Training/Exposure

- ✓ Processing of Metal and Alloys by Arc melting
- ✓ Processing of Metal and Alloys by Melt Spinning
- ✓ Processing of Metal and Alloys by Spark Plasma Sintering.
- ✓ Processing of CNTs and Graphene by CVD
- ✓ Processing of Polymers and their composites by Compression Molding, Extrusion, Injection molding
- ✓ Nano-fibers by Electro Spinning
- ✓ Thermoelectric Characterizations includes Thermo-power, Electrical conductivity, Thermal Conductivity and Thermoelectric efficiency
- ✓ Vibrating Sample Magnetometer (VSM), Hall Coefficient Measurement
- ✓ Mechanical Properties Measurement by Universal Testing Machine (Tension, Compression, Bending)
- ✓ Micro-hardness Testing of Metals and Alloys
- ✓ Surface Morphology Analysis by Field Emission Scanning Electron Microscope (FE-SEM)/Optical Microscope.

Registration Details

There are limited numbers of seats for this course. Please fill the registration form available on our website. You need to send the hard copy of completed Registration Form, along with the fees to the address given below. Once your application has been approved by the course coordinators. The fees can be paid online (details given below) or by demand draft in favor of "*Director, National Physical laboratory*" payable at Delhi. Accommodation of the participants will be made available on payment basis.

Registration Fee (GST 18% extra)

Participants (Academic/R&D institutes):	Rs.15,000/-
Participants (Industries):	Rs. 20,000/-
Students	Rs.10,000/-
(Research scholars, JRF,SRF, RA, PA etc.,)	

Important Dates

Deadline for submitting the application:	05/07/2019
Intimation Regarding Acceptance:	12/07/2019

Bank Details for online Payment

Bank Reference ID: MPC2019

Name of the Bank: Syndicate Bank

Bank Branch & Address: Syndicate Bank,
NPL Campus, National Physical Laboratory,
Dr. K.S. Krishnan Marg, New Delhi- 110 012

Bank A/c Name: Director, National Physical
Laboratory

Bank A/c No.: 91002010030018

Type of Bank A/c : Savings Account

MICR Code: 11002508

IFSC Code: SYNBO009100

The Participants should give the following
details regarding on-line payment:

1. Name of the person who deposits the amount in Bank:
2. Transaction ID:
3. Date of Transaction:
4. Amount:
5. Bank & Branch Name:

You may please visit CSIR-NPL website to see
the Short-Term Course details
www.nplindia.org

Organizing Committee

Dr. S. R. Dhakate (Coordinator)
Dr. Bhanu Pratap Singh
Dr. Sivaiah Bathula
Dr. M. Saravanan
Dr. Priyanka H. Maheshwari
Dr. Bhasker Gahtori
Dr. Kiran Mahadeo Subhedar
Dr. Saroj Kumari
Sh. R. K. Seth
Sh. Radhey Shyam
Mrs. Shaveta Sharma
Sh. Naval Kishor Upadhyay
Ms. Preeti Srivastava

Contact Address

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Name:

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(In capital letters)

Designation:

.....
Department:

.....
Organization:

.....
Address:.....

.....
Contact No:

Email:

.....
Accommodation Required: (Yes/No)

Signature of the
Participant:.....

*The applicant is hereby permitted to attend the
short-term course, if selected*

**Signature and Seal of the Competent
Authority**