



## CSIR INTEGRATED SKILL INITIATIVE

### Characterization Techniques of Materials and Devices

March 14<sup>th</sup> - 15<sup>th</sup>, 2022, CSIR-NPL, New Delhi

#### 75 years of CSIR-NPL



Photonics Materials and Metrology Section  
Advanced Materials and Device Metrology Division  
CSIR-National Physical Laboratory  
New Delhi-110012

#### Aim of the workshop

The workshop's main aim is to bring together researchers from different backgrounds in an intimate atmosphere to learn about the different characterization techniques and analyze the experimental data. The scope of this course is mainly focused on providing basic knowledge on the various characterization techniques such as FTIR, NMR, UV-vis, Fluorescence, XPS, XRD, XRF, TEM, AFM, and electrical characterization of Devices.

**Target Audience: Students, Scientists, Researchers, Aspiring IP Professionals, Professors**

#### Registration details

Registration Fee: NIL

Last date for Registration: 13<sup>th</sup> March 2022

\*E-Certificates will be provided

Registration Link:

<https://forms.gle/VQfdgBNMsjURhdMf7>

#### TOPICS TO BE COVERED:

- Atomic Force Microscopy (AFM)
- X-ray Photo Emission Spectroscopy (XPS)
- Xray Diffraction And Xray Fluorescence (XRD/XRF)
- Transmission Electron Microscopy (TEM)
- Electrical Characterization of Devices
- Chemical characterization of materials using FT-IR and NMR Photoluminescence and PL mapping
- Optical Studies of nanostructured materials

#### Programme coordinators, CSIR-NPL, Delhi

Dr. Ritu Srivastava: [ritu@nplindia.org](mailto:ritu@nplindia.org)

Dr. Mahesh Kumar: [mkumar.npl@nic.in](mailto:mkumar.npl@nic.in)

Dr. C.K.Suman: [sumanck@nplindia.org](mailto:sumanck@nplindia.org)

\*Those who attend the full program on both days and all sessions will be given a participation certificate. At the end of the course, a Google form link will be provided for participation certificates.\*



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S.No.	Characterization Techniques	Resource Person/Speaker	Email	Time
<b>14/03/2022</b>				
<b>Inauguration</b>				9:15-9:30
1	Atomic Force Microscopy	Dr. V. Ganeshan Dr. Rina Sharma	<a href="mailto:vganesancsr1@gmail.com">vganesancsr1@gmail.com</a> <a href="mailto:rina@nplindia.org">rina@nplindia.org</a>	9:30-10:30 10:30-11:30
2	X-ray Photo Emission Spectroscopy	Dr. T Sripathy Dr. Govind	<a href="mailto:tshripathi@gmail.com">tshripathi@gmail.com</a> <a href="mailto:govind@nplindia.org">govind@nplindia.org</a>	11:30-12:30 12.30: 13:15
3	Electrical Characterization of Devices	Mr. Raghunath Rao /Abhay Joshi Dr. Pankaj Kumar	<a href="mailto:Raghu.Rao@keithley.com">Raghu.Rao@keithley.com</a> <a href="mailto:Abhaya.Joshi@keithley.com">Abhaya.Joshi@keithley.com</a> <a href="mailto:pankaj@nplindia.org">pankaj@nplindia.org</a>	14:30-15:30 15:30:16:30
<b>Attendance/Feedback Session: Compulsory for all registered participants</b>				
<b>15/03/2.22</b>				
4	Transmission Electron Microscopy	Prof. Anchal Srivastava	<a href="mailto:anchalbhu@gmail.com">anchalbhu@gmail.com</a>	9:30-10:20
5	Xray Diffraction And Xray Fluorescence	Dr. K.K.Maurya Dr. Vijayan	<a href="mailto:kkmaurya@nplindia.org">kkmaurya@nplindia.org</a> <a href="mailto:nvijayan@nplindia.org">nvijayan@nplindia.org</a>	10:30-11:30 11:30-12:15
6	Chemical characterization of materials using FT-IR and NMR, PL and PL mapping	Dr. Asit Patra Dr. Bipin Gupta	<a href="mailto:apatra@nplindia.org">apatra@nplindia.org</a> <a href="mailto:guptabgupta@nplindia.org">guptabgupta@nplindia.org</a>	12:15-13:00 14:30-15:30
7	Optical Studies of nanostructure materials	Dr. S.N.Sharma	<a href="mailto:shailesh@nplindia.org">shailesh@nplindia.org</a>	15:30-16:30
<b>Attendance/Feedback Session: Compulsory for all registered participants</b>				