

One Week Short Term certificate Course  
“Synthesis, Characterizations and Applications of Nanostructured Materials”

Module (16-20) February, 2021

**ORGANISING TEAM**

Patron

Professor (Dr.) Goutam Sutradar  
Director,  
National Institute of Technology Manipur

Chairman

Dr. Bibhu Prasad Swain  
Associate Professor,  
Department Physics  
National Institute of Technology Manipur

Coordinator

Dr. Loushambam Herojit Singh  
Assistant Professor,  
Department of Physics  
National Institute of Technology Manipur

Convener

Dr. Mamata Maisnam  
Assistant Professor,  
Department of Physics  
National Institute of Technology Manipur



**DEPARTMENT OF PHYSICS  
NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR  
WEST IMPHAL MANIPUR, INDIA - 795004**

## **ABOUT NIT, MANIPUR**

National Institute of Technology Manipur, a centrally funded institution is set up to impart quality technical education at various levels of higher learning. It is one of the ten new NITs established and developed as the “Institute of National Importance” by an act of Parliament in 2007. NIT Manipur started its first session with the three branches of Engineering- Electrical & Electronics Engineering, Electronics & Communication Engineering, and Computer Science Engineering. The functioning of the institute was started at its temporary campus at Takyelpat, Imphal under the mentorship of NIT, Agartala. As one of the National Institutes of Technology (NIT), the Institute has the responsibility of providing high-quality education in Engineering, Technology, and Sciences to produce competent technical and scientific manpower for the country. The Institute offers B Tech, M Tech, M Sc, and Ph.D. programmes in several disciplines of Engineering, Technology, and Sciences.

## **ABOUT THE COURSE**

This course will provide detailed ideas about Process – Structure – Properties of Nanostructured Materials which are useful for various applications in sensors, photovoltaics, energy storage applications etc.

Topics covered include:

- Synthesis of OD, 1D, 2D and 3D nanostructured materials
- Characterization techniques (e.g XRD, XPS, SEM, STM, Raman and FTIR and impedance spectroscopy etc.)
- Applications (e.g Energy storage, Sensors, photovoltaics etc.)

*A certificate will be issued to the candidates after successful completion of the course.*

### **OBJECTIVES OF THE COURSE**

- ✓ To provide fundamental knowledge about nanostructured materials
- ✓ To gain knowledge on various synthesis process of nanostructured materials
- ✓ To gain knowledge on various characterization techniques
- ✓ To earn basic knowledge on fabrication process of photovoltaics, sensors and energy storage devices.

### **Who can attend this STC?**

- B.Tech, B. Sc**
- M. Sc, M. Tech**
- Ph.D. and Faculty**

**Registration fee for attending this STC = Rs 500/- including GST.**

**Numbers of participants are limited to 50. Shortlisted candidates will be informed through email.**

<b>Details of the Bank Account</b> Name: Director NIT Manipur IRG Acc. No. 60330100000143 Bank and Branch: Bank of Baroda, NIT Manipur Campus IFSC code: BARB0NITMAN	<b>IMPORTANT DATES</b> <b>Last Date of Registration: 14<sup>th</sup> Feb, 2021</b>
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For any query, you can contact to the course coordinator  
Dr. Loushambam Herojit Singh  
Assistant Professor,  
Department of Physics  
National Institute of Technology Manipur  
Email: Email ID: loushambam@gmail.com; Mobile No: 7085736523

## RESOURCES PERSON



Dr. Loushambam Herojit Singh works as Assistant Professor in Department of Physics. He received his Ph.D from Homi Bhabha National Institute, Mumbai (Indira Gandhi Centre for Atomic Research). He was a postdoctoral fellow at Institute of Physics, University of Barsilia, Brazil. He has published 25 SCI/SCIE/Scopus indexed journals and 3 book chapters in his credit.

His broad areas of research interests include:

Magnetic nanoparticles, porous cationic deficient system, charge storage system and water purification.



Dr. Mamata Maisnam works as Assistant Professor in Department of Physics. She received his Ph.D from Manipur University. She was a JRF, DRDO Delhi (2001-2003), SRF, DRDO Delhi (2003-2004), SRF, CSIR Delhi (2005), Research Associate (RA), CSIR Delhi (2008-2011) and UGC-PDF, UGC Delhi (2012-2014), in her postdoctoral career. She has published 59 SCI/SCIE/Scopus indexed journals and 1 book chapter in her credit.

Her broad areas of research interests include: Electroceramics, processing and characterization.



Dr. Bibhu Prasad Swain works as Associate Professor in Department of Physics. He received his Ph.D from Department of Metallurgical Engineering and Materials Science, IIT Bombay. He was awarded JSPS Fellow (Govt. of Japan), Brain Korea 21 Fellow (Materials Research, Seoul National University) and NRF Fellow (University of Cape Town, South Africa) in his postdoctoral career. He has published 100 SCI/SCIE/Scopus indexed journals, 15 book chapters and 2 Book in his credit.

His broad areas of research interests include:

Large bandgap Semiconductors, Mechanical Hard-materials, nanostructured materials, Graphene based Supercapacitor, Photovoltaic materials, (f) Biocompatible coating, Modeling of advanced MOSFET

<https://nitmanipur.irins.org/profile/132581>

## REGISTRATION FORM

Name ( Capital Letters):

Qualification:

Designation:

Department:

Organization:

Address:

Mobile:

Email:

Payment details:

Date

Place

Signature