

## A 5-DAY SHORT TERM COURSE

UNDER NATIONAL EDUCATION POLICY (NEP) PROGRAMME  
(ONLINE MODE)

On

### **Advances in Material Processing and its Applications**

21<sup>st</sup> March – 25<sup>th</sup> March, 2022



Organised by  
**Department of Physics**  
**National Institute of Technology Manipur**  
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 "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 Takypat, 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. programs in several disciplines of Engineering, Technology, and Sciences. The institute has acquired 341.5 acres of land in lush green areas of Langol, Imphal. The Institute being accorded the status of "An Institute of National Importance" aspires to be a knowledge hub for the region. The Institute through its academic and research activities would act as an incubation center for aspiring "technopreneurs". The Institute provides an

ideal platform for national integration through emotional integration as half the students are from outside the state. Its envisions being an institute producing human resource of the world class standard who will contribute significantly in the well being of mankind.

## About the Course

Material properties can be easily tuned for application during the processing of the material. Materials have many applications ranging from micro to macro level and also in terms of technology based system to biological system. Given the importance, it is necessary to understand and share the physics of this material processing and application to a wider audience.

## Course Objectives

1. To provide advance knowledge of processing materials.
2. To provide knowledge of characterizing the materials for its various properties
3. To provide knowledge of tuning the materials for several application.

## ABOUT THE SPEAKERS

### Dr. Ibetombi Soibam



She received her Ph.D. from Manipur University in Dec. 2009. In 2010, she joined NIT Manipur as an Assistant Professor taking full responsibility of B.Tech Physics course along with several administrative loads. In 2014, she single-handedly opened M.Sc. Physics courses at NIT Manipur. She has been working as an Associate Professor since 2018. To her credit, she has several research paper publications along with various book chapters.

Her research areas are oxide materials, composites, multiferroics, etc.

### Dr. Loushambam Herojit Singh



He works as an Assistant Professor in the Department of Physics, NIT Manipur. He received his Ph.D. from Homi Bhabha National Institute, Mumbai (Indira Gandhi Centre for Atomic Research). He was a post-doctoral fellow at the Institute of Physics, University of Brasilia, Brazil. He has published many SCI/SCIE/Scopus indexed international journals along with several 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. Shagolsheem Lenin Singh



He is an assistant professor in the Department of Physics, NIT Manipur. In 2013, he received his Ph.D. from Leibniz Institute of Polymer Research Dresden, Germany, and was a Post-doctoral fellow at Bar-Ilan University, Israel (2014-2015).

He has, under his name, DST-INSPIRE Faculty Award in Physics (2015) and ECEMP-IGSFellowship (2011). His primary research interest is in the broad area of soft-matter physics, where Physics, Chemistry, and Biology often meet. His major focus has been to investigate various equilibrium and non-equilibrium properties of polymeric systems (nanocomposites, thin-films, cyclic polymers, etc.) which have huge potential for modern technological devices. Another direction of research is on biologically motivated physical problems. He develops simple models for these systems and employs computer simulations as a tool to explore polymer-nanoparticle interactions, polymers in non-equilibrium, multi-component fluids, modeling intra-cellular transport.

### Dr. Mamata Maisnam



She works as an Assistant Professor in the Department of Physics NIT Manipur. She received her 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 (2012-2015), in her postdoctoral career. She has published several SCI/SCIE/Scopus indexed international journals and some book chapters in her credit.

Her broad areas of research interests include: Ferroelectric materials, Ceramics materials, energy storage materials, etc.

### Dr. Thoudam Diana



Dr. Thoudam Diana currently working as a Lecturer in the department of Physics, NIT Manipur. She received her Ph.D. in Material Science from the department of Physics, Manipur University. She has worked on semiconducting thin films, its synthesis and characterization, material modifications under ion beam irradiation etc. She has three peer reviewed publications.

## COURSE REGISTRATION:

Registration fee (Including GST)

1. ₹ 500/- for Faculties/Professionals
  2. ₹ 300/- for Research Scholars/ Ph.D. Students
  3. ₹ 200/- for PG/UG
- \* No registration fee for students and faculties of NIT Manipur.

## Bank Details

Name: Director NIT Manipur IRG  
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After payment, please fill your personal details at <https://forms.gle/Lmubi2WcUkjinWHXz5>

## LAST DATE OF REGISTRATION:

**March 18, 2022**

## COURSE CO-ORDINATORS:

1. **Dr. Ibetombi Soibam**  
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NIT Manipur  
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2. **Dr. Loushambam Herojit Singh**  
Assistant Professor, Department of Physics  
NIT Manipur  
Mobile: 7085736523
3. **Dr. Shagolsheem Lenin Singh**  
Assistant Professor, Department of Physics  
NIT Manipur
4. **Dr. Mamata Maisnam**  
Assistant Professor, Department of Physics  
NIT Manipur
5. **Dr. Thoudam Diana**  
Lecturer, Department of Physics  
NIT Manipur

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National Institute of Technology Manipur

राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर

(An autonomous Institute under the Ministry of Education, Govt. of India)

A

5-day Short Term Course On

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### SCHEDULE

	MORNING SESSION 11:00-12:00 AM		EVENING SESSION 03:30-05:00 PM
<b>Day 1</b> (21/03/22) Monday	<i>Defects and its Characterizations</i> Dr. Loushambam Herojit Singh	<i>Role of defects on water purification</i> Dr. Loushambam Herojit Singh	<i>Discussion/Hands- on session</i>
<b>Day 2</b> (22/03/22) Tuesday	<i>Multi-component Alloy – part 1 (Theory)</i> Dr. Shagolsheem Lenin Singh	<i>Multi-component Alloy – part 2 (Modeling &amp; Simulation)</i> Dr. Shagolsheem Lenin Singh	<i>Discussion/Hands- on session</i>
<b>Day 3</b> (23/03/22) Wednesday	<i>Processing of Materials (Oxides, composites, etc.)</i> Dr. Ibetombi Soibam	<i>Characterisation of Materials</i> Dr. Ibetombi Soibam	<i>Discussion/Hands- on session</i>
<b>Day 4</b> (24/03/22) Thursday	<i>Ceramic Processing (Part 1)</i> Dr. Mamata Maisnam	<i>Ceramic Processing (Part 2)</i> Dr. Mamata Maisnam	<i>Discussion/Hands- on session</i>
<b>Day 5</b> (25/04/22) Friday	<i>Thin Film Study (Part 1)</i> Dr. Thoudam Diana	<i>Thin Film Study (Part 2 )</i> Dr. Thoudam Diana	<i>Discussion/Hands- on session</i>