

## *Nanoscience and Soft Matter Laboratory*

*The lab is involved in the advancement of research works relating to condensed matter systems including soft matter and bio-physical evaluation of nanomaterials. Presently the focus is on exploring surface wettability, bio-photonic coloration and electrochemical bio-sensing.*

### Principal Investigator



**Prof. Dambarudhar Mohanta**

**Area of Interest:** Condensed Matter Physics, Nanoscale and Soft Matter Phenomena, Radiation Induced Effects.

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### Research Scholars



**Mr. Aftab Ansari**

**Area of Research:** Evaluation of Gadolinium based oxide and Vanadate based nanosystems and their biophysical relevance.

Email: aftyfi9@gmail.com



**Mr. Ankush Medhi.**

**Area of Research:** Electrochemical sensing of biological analytes using conducting polymer and TMDC based sensor electrode nano-system.

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**Ms. Kakoli Doloi**

**Area of Research:** Study of carrier transport properties of conducting metal organic framework (MOF) and composites for application in electrochemical sensing of environmental contaminants.

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**Mr. Mahesh C. Dubey**

**Area of Research:** Study of hydrophobic, hydrophilic surfaces: Electro-wetting of micro droplets and application of electro-wetting on dielectric(EWOD) in lensing and related phenomena.

**Email:** chandramaheshdubey@gmail.com



**Ms. Stuti Tamuli**

**Area of Research:** Study of structural, morphological and opto-electronic properties of monochalcogenide nanosystems with heterostructure consideration.

**Email:** stuti.tamuli@gmail.com



**Ms. Susmita Baruah**

**Area of Research:** Development of PEDOT: PSS functionalized 2D layered material nanocomposite electrodes for electrochemical biosensing applications.

**Email:** susmitabaruahsb@gmail.com



**Ms. Bhupali Deka**

**Area of Research:** To study the radiation-induced effects on the structural, morphological, optoelectronic, and electrical properties of tungsten dichalcogenide based 2D systems.

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## Project Fellow



**Mr. Bikash Kumar Das**

**Area of Research:** Study of iridescent colour and transparent (super) hydrophobicity in natural systems within a class.

**Email:** bikashdas525@gmail.com

## Lab Alumini



### **Dr. Upamanyu Das**

**Thesis title:** Development of binary semiconductor elongated nanopatterns by energetic ion irradiation or photon illumination for optoelectronics or photonics application

**E-mail:** upam2005@gmail.com

**Present Status:** Assistant Professor, Department of Physics, Rajiv Gandhi University, Arunachal Pradesh



### **Dr. Nabanita Dutta**

**Thesis title:** Optical properties of semiconductor quantum dots, interacting quantum dots and nanomaterial filled SHI induced ion tracks

**E-mail:** go2nabanita@gmail.com

**Present Status:** Research Scientist at Ames Research Center NASA, USA



### **Dr. Sayan Bayan**

**Thesis title:** Investigation of opto-electronic and photonic properties of ZnO nanoscale systems fabricated via physico-chemical routes

**E-mail:** sayan.bayan@gmail.com

**Present Status:** Assistant Professor, Department of Physics, Rajiv Gandhi University, Arunachal Pradesh



### **Dr. Manasi Devi**

**Thesis title:** Synthesis characterization and study on the magneto-optic effects of ferrofluids

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**Present Status:** Ad-hoc Faculty at Darrang College, Tezpur



### **Dr. Runjun Sarma**

**Thesis title:** Synthesis, characterization and biofunctionalization of quantum dots and application in electrophysiology

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**Present Status:** Assistant Professor, Mehr Chand Mahajan DAV College for Women, Sector 36, Chandigarh



### **Dr. Nibedita Paul**

**Thesis title:** Nanoscale rare earth oxide and rare earth ion doped semiconductor oxide: synthesis and application in rheology and photo catalysis

**Email:** paul.nibedita1@gmail.com

**Present Status:** Assistant Professor, NIT Nagaland





**Dr. Manjit Borah**

**Thesis title:** Fabrication and optical, electrical and dielectric properties of lead-free perovskite-based nanostructured ferroelectric systems with inclusion of suitable dopants

**E-mail:** manjit244@gmail.com

**Present Status:** Assistant Professor, Department of Physics, Goalpara College, Assam



**Dr. Samiran Hazarika**

**Thesis title:** Gadolinium oxide and oxyfluoride nanosystems: relevant studies as regards optical, rheological and biophysical applications

**E-mail:** spl.inassam@gmail.com

**Present Status:** Guest Faculty, Bongaigaon Polytechnique, Assam



**Dr. Rizwin Khanam**

**Thesis title:** Studies on optoelectronic, photocatalytic and energetic ion irradiation aspects of nanotitania systems.

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**Dr. Swati Nawami Aideo**

**Thesis title:** Studies on characteristic structural colour and wettability properties of certain natural systems.

**Email:** sswatinawami@gmail.com

**Present Status:** Assistant professor, Department of Physics, North Guwahati College, Assam



**Dr. Saurabh Jyoti Hazarika**

**Thesis title:** Investigation of photocatalytic photoluminescence and mechanical properties of tungsten disulphide (WS<sub>2</sub>) nanosystems along with irradiation induced modifications.

**Email:** saurabh2say@gmail.com

**Present Status:** Assistant Professor, Department of Physics, Pandit Deendayal Upadhyaya Adarsha Mahavidyalaya, Assam



**Dr. Hemanga Jyoti Sarmah**

**Thesis title:** Exfoliation process, carrier transport and opto-electronic features of layered materials with special emphasis on the irradiation induced effects.

**Email:** hsarmah94@gmail.com

**Present Status:** Assistant Professor, Department of Physics, Morigaon College, Assam



**Dr. Amrita Deka**

**Thesis title :** Synthesis, characterization and nano-bio interface relevance of manganese chalcogenide nanosystems.

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