
Registration Seminar

Seminar Title	: Tuning of Magnetoelectric coupling in Spin frustrated Composites
Speaker	: Ankita Mohanty (Rollno : 522ph2006)
Supervisor	: Prof. Anil Kumar Singh
Venue	: MC-126
Date and Time	: 25 Apr 2024 (04:00 PM)
Abstract	: In the age of artificial intelligence and machine learning, the hunt for new multipurpose materials that might eventually replace bloated semiconductor technology has accelerated because of the desire to create smaller, more energy-efficient electrical and data storage systems. Multiferroics are a significant class of materials that have attracted researcher's interest because of their properties of having more than one order parameters (ferroelectric, ferromagnetic, ferroelastic, etc.). The coupling between magnetism and polarization is due to an external electric field and magnetic field respectively known as Magnetoelectric (ME) coupling. Single-phase multiferroics show low ME coupling at/near room temperature. To overcome this challenge, we have synthesized spin-frustrated multiferroic $\text{Bi}_2\text{Fe}_4\text{O}_9$ and its composite with various spinel ferrites MFe_2O_4 (where M= Co, Ni, Cu). $\text{Bi}_2\text{Fe}_4\text{O}_9$ shows ME coupling near room temperature whereas spinel ferrites are known for their exotic magnetic properties. Tuning of ME coupling in composites due to magnetic field and/or electric field near room temperature is also an important goal to achieve. In her talk, the speaker will present her PhD registration seminar and talk about her plan of action for the next few years during his PhD tenure.