National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Electrocaloric effect and energy storage studies of lead-free ferroelectric systems
Speaker	: Nibedan Nanda (Rollno : 522ph1012)
Supervisor	: Prof. Pawan Kumar
Venue	: Room No. MC 126, Dept. of Physics & Astronomy
Date and Time	: 08 Jan 2025 (4:15 PM)
Abstract	: The electrocaloric effect (ECE) and energy storage characteristics of ferroelectric materials represent two cutting-edge areas of research with significant implications for sustainable technology. The ECE, characterized by temperature changes in dielectric materials under an applied electric field, offers a highly efficient and environmentally friendly approach to solid-state cooling. Meanwhile, ferroelectric materials, with their high dielectric permittivity and spontaneous polarization, hold immense promise for advanced energy storage solutions. We will discuss the interplay between these phenomena, highlighting recent advancements, underlying mechanisms, and the scope of research in ferroelectric materials to revolutionize both energy storage and cooling technologies.