
Registration Seminar

Seminar Title	: Heterogeneous precipitation approach to develop YAG-based composite phosphor powders for luminescent applications
Speaker	: Ranu Jena (Rollno : 523cr1001)
Supervisor	: Bibhuti Bhusan Nayak
Venue	: CR Seminar Room
Date and Time	: 21 Mar 2025 (11:00 am)
Abstract	: This Ph. D. research deals with selecting novel host materials for luminescence, including color tuning and white light applications. Various researchers have developed host materials that can be used in the luminescence field depending on the activator ions. The host materials with activators have been prepared using different precipitating agents. This research uses ammonia solutions to prepare YAG powders and sodium borohydride as a precipitating agent to prepare YAG-based composite or coating powders with YBO_3 . The main objective of this research project is to explore the heterogeneous strategy for the development of cerium and manganese-doped YAG-based composite/coating powders with YBO_3 and study its important photoluminescence characteristics to find the suitability in the field of luminescence, including color tuning and white light generation. The synthesis approach serves as a good indication for color tuning and the generation of white light. Further, different synthesis parameters will be optimized, and various concentrations of rare earth-doped YAG-based luminescent materials will be developed. The prepared materials will be characterized by XRD, FE-SEM/TEM, particle size analyzer, FTIR, UV-visible spectroscopy, and emission behavior to elaborate structural, microstructural, and optical properties precisely.