National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Conference Return Seminar: Sustainable Enhancement of Geopolymer Mortar Using Copper Slag as Fine Aggregate
Speaker	: Aman Deep, Roll No – 521ce1018
Supervisor	: Prof. Pradip Sarkar
Venue	: CE Seminar Hall
Date and Time	: 20 Dec 2024 (10:00 AM)
Abstract	: Geopolymer mortar (GPM) serves as a sustainable alternative to ordinary Portland cement mortar (OPCM) by utilizing aluminosilicate precursor materials as binders. These precursors include natural resources such as metakaolin and volcanic ash, as well as industrial by-products like fly ash (FA) and ground granulated blast furnace slag (GGBFS). Despite the absence of cement, GPM faces environmental concerns due to reliance on natural aggregates, contributing to resource depletion. To address this issue, researchers have explored using waste materials to replace natural aggregates, promoting resource conservation and effective waste management. Copper slag (CS) is one such waste material that shows promise as a fine aggregate in GPM. This study conducts a comprehensive analysis of FA-GGBFS-based GPM incorporating CS as a fine aggregate. The findings indicate that GPM outperforms OPCM in strength, transport characteristics, and durability.