National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Microstructure, Texture, Mechanical Properties and Corrosion Behavior of Additively Manufactured Stainless Steel and Titanium Alloy for their Application in Corrosive Environment
Speaker	: Aditya Shankar Routray (Rollno : 919mm5077)
Supervisor	: Santosh Kumar Sahoo
Venue	: M.Tech Class room (Metallurgy Annexe Building)
Date and Time	: 25 Jun 2025 (4:30 PM)
Abstract	: Additive manufacturing (AM), often called 3D printing, is changing the way industries make metal parts. Wire arc additive manufacturing (WAAM) is a method of AM which uses welding techniques to create strong, large-sized metal components. WAAM is faster and more cost-effective than other metal printing methods because it uses wire, which is cheaper and easier to handle than metal powders. This research focuses on using CMT-WAAM processes to build wall-shaped structures using stainless steel and Ti-6Al-4V titanium alloy. These materials are widely used in industries like aerospace, automotive, chemical, and nuclear sectors because of their high strength, corrosion resistance, and reliability. To understand the performance of the structures produced through AM processing, the microstructure, texture, mechanical properties and corrosion behaviour of the samples are investigated in the present study. The results will help identify the best CMT-WAAM parameters to produce high quality and reliable components for its application in chemical industries.