National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Microstructure & Texture Evolution during Cold Pilgering of Titanium alloys
Speaker	: Gourahari Das (Rollno : 921mm5002)
Supervisor	: Prof. Santosh Kumar Sahoo
Venue	: M.Tech. Class Room (MM-202), MM Annex. Building
Date and Time	: 06 May 2024 (11 AM)
Abstract	: Titanium alloy materials have been widely used in many sectors such as aerospace, medical & chemical industries due to its high specific weight, good mechanical & corrosion properties. These properties of titanium alloy material are influenced by crystallographic texture and microstructure developed during thermo-mechanical processing. The preferred orientation of grain is greatly influenced by the relative deformation between wall thickness & diameter (Q-ratio) in cold pilgering process. On the other hand, isothermal annealing in cold worked material also significantly controls the microstructure & mechanical properties, such as tensile strength & ductility of the finished tube. Presently, Ti&ndash3Al&ndash2.5V alloy was processed by hot extrusion followed by multi-pass cold pilgering and intermediate isothermal vacuum annealing. The microstructure, texture evolution, and mechanical properties were systematically investigated at various stages of processing, i.e. from hot extruded tube stage to cold worked finished tube stage, and reported in the present study.