National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Tribological Performance of Textured Journal Bearings: An Interface-Driven Comparative Study
Speaker	: Sumit Kumar Ohdar (522me1004)
Supervisor	: Prof. Saurav Datta (2524), PIC Departmental Seminar
Venue	: ME Seminar Hall (ME-001)
Date and Time	: 10 Jul 2025 (03:00 PM)
Abstract	: This study investigates the influence of surface texturing and material selection on the performance of hydrodynamic journal bearings. Finite difference modeling was applied to simulate the interactions of textured surfaces, focusing on two materials: SS304 and Thordon. The analysis centered on evaluating load-carrying capacity and deformation behavior under identical groove geometries. Results highlight the critical role of material-dependent lubricant film formation, revealing that surface geometry significantly impacts bearing performance, while material properties strongly influence pressure generation and film stability. These findings offer valuable insights for the design of eco-efficient journal bearings suitable for marine and industrial applications.