

Seminar

Institute for Plasma Research

Title: Experimental and Theoretical Characterization of Plasma Facing XCrCu (X=Zr, Nb, Mo, and Tc) for Corrosion-Resistant Material

Speaker: Dr. Mitesh Solanki
PDEU, Gandhinagar

Date: 30th August 2024 (Friday)

Time: 03.30 PM

Venue: Seminar Hall, IPR

Abstract

This study presents both experimental and theoretical investigations into XCrCu alloys (where X = Zr, Nb, Mo, Tc) to evaluate their suitability as plasma-facing materials. The primary objectives were to assess the corrosion resistance, anti-radiation properties, and thermoelectric performance of these alloys. Our findings reveal that the XCrCu alloys exhibit exceptional resistance to radiation and corrosion, making them strong candidates for use in extreme environments. Notably, these materials demonstrated a high thermoelectric figure of merit (ZT) of 4.0, underscoring their potential for efficient thermoelectric applications. These properties collectively suggest that XCrCu alloys are promising candidates for deployment in environments demanding robust, radiation-resistant, and highly efficient thermoelectric materials.
