

Seminar

Institute for Plasma Research

Title: Multimodal Diagnostic implementation in ROBIN ion source
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Date: 02nd February 2026 (Monday)
Time: 03:00 PM
Venue: Seminar Hall, IPR

Abstract

In this talk, I present a multimodal diagnostic framework to be implemented in the ROBIN ion source for advancing negative ion source characterization. The work will integrate Triple Langmuir Probe measurements for T_e , and n_e measurements, Cavity Ring-Down Spectroscopy (CRDS) for an average negative ion density, a novel RF-broadband-based laser photo-detachment technique for local negative ion density, and a miniaturized four-gridded Retarding Field Energy Analyzer (RFEA) for energetic ionic contribution in plasma dynamics. All these diagnostics are planned to be installed near the plasma grid area, the most interesting and important zone in a negative ion source from the beam extraction perspective. Together, these diagnostics bridge the gap in understanding of the correlation between the background plasma parameters, average anion density, localized anion density, and ion energy distributions.
