

# Seminar

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## Institute for Plasma Research

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**Title:** Examination and repair procedures for different faults associated with magnetic coils in ADITYA-U tokamak

**Speaker:** Mr. Rohit Kumar  
Institute for Plasma Research, Gandhinagar

**Date:** 15<sup>th</sup> May 2026 (Friday)

**Time:** 03:00 PM

**Venue:** Seminar Hall, IPR

**Join the talk online:** URL: <https://bharatvc.nic.in/viewer/5992138016>

*(Conference ID: 5992138016; Password: 232142)*

### Abstract

Careful operation of magnets is essential towards achieving high current and magnetic field performance in the ADITYA-U tokamak. Ensuring the structural and electrical integrity of magnetic coils is critical for tokamak operators and technicians. The long-term reliability, operational safety, and performance optimization of such systems depend strongly on maintaining the health of their magnet insulation systems. Early detection of insulation defects is vital not only for safe machine operation but also for enabling timely repair and preventive maintenance strategies. However, limited physical accessibility to embedded magnet components significantly constrains both fault detection and repair processes, introducing unique technical challenges in preserving robust insulation under demanding operational conditions. While magnet performance metrics such as current-carrying capability and field strength are widely reported, magnet failure mechanisms and insulation degradation issues receive comparatively less attention. This work presents a systematic examination of magnet faults observed in the ADITYA-U tokamak, with particular emphasis on insulation-related defects. The diagnostic approaches adopted, challenges encountered, and corrective repair actions implemented are discussed. The study aims to provide practical insights into magnet fault management and to contribute toward improved reliability and lifecycle performance of tokamak magnetic systems.

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