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Departmental Seminar

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Seminar Title	: A Novel Dual Substrate Layer In-Band Full-Duplex Antenna with High Tx-Rx Isolation for V2X-ITS Applications.
Speaker	: Dr. Jogesh Chandra Dash
Supervisor	: Dr. Jogesh Chandra Dash
Venue	: Antenna design Lab, Third floor, Electrical science building.
Date and Time	: 08 Aug 2025 (11.00AM)
Abstract	: In this research, we introduce a novel co-linearly polarized in-band full-duplex (FD) antenna that achieves passive self-interference cancellation (SIC) through high Tx-Rx isolation. The proposed FD antenna of size $0.014 \lambda_{30}$ is designed to operate within the IEEE 802.11p band (5.850 GHz to 5.945 GHz) for V2X- ITS applications. This isolation improvement is made possible by the proposed FD antenna, which does not need a complex or hybrid feed network or circulator. The study investigates the application of a dual-layer substrate technique. Specifically, it reduces surface waves from the Tx to Rx region by adding decoupling strips and etched slots to the ground plane. This improves the isolation between the Tx and Rx antennas. The proposed FD antenna exhibits maximum isolation of 85.98 dB at 5.90 GHz, along with a peak gain of 4.10 dBi. The design approach for the proposed FD antenna is detailed and verified using CST Microwave Studio full-wave simulations.