PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS005/IV/2026

Antenna Design and Simulation with MATLAB

## Name of the PMRF student

ANAND KUMAR

Required background of the students taught

Electrical, Electronics, Communication, Instrumentation, Physics, Aerospace

Antenna Categories

Details of the content of the module

- Review of essential antenna theory.

- In-depth analysis of a dipole antenna with MATALB codes

  - Generate and interpret S-parameters & input impedance.
  - Plot and understand 2D/3D radiation patterns, gain, and efficiency.
  - Visualize current distribution and apply the concept of effective length.

- Design and simulation of diverse antenna structures (loop, microstrip patch, slot, horn) via MATLAB coding.

- Antenna array simulation and analysis.

- Effective use of the GUI-based MATLAB Antenna Designer App.

- Coding exercises and theory-based assignments.
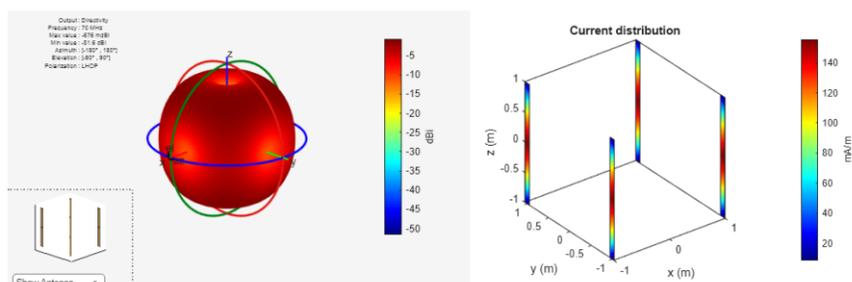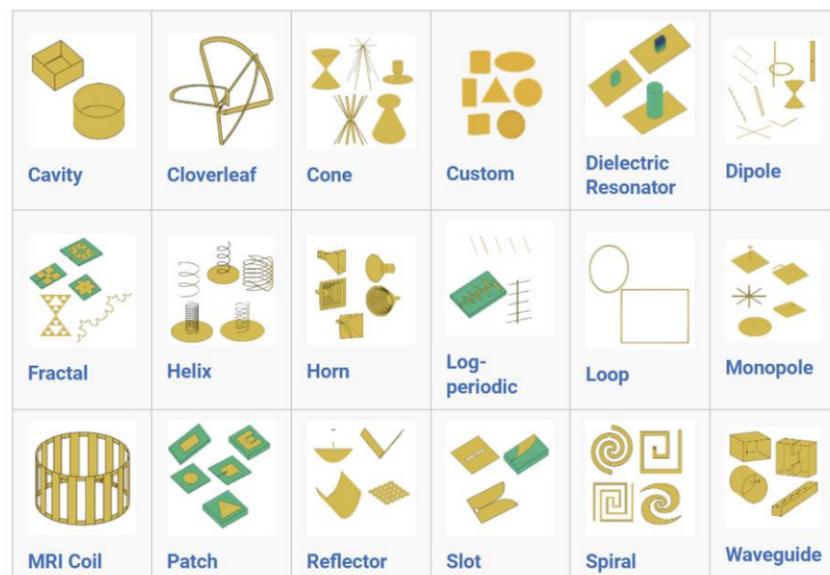
Schedule of the module

Class Timing: **3:00-5:30 PM**
(Saturday/Sunday)
Class Begins: **21st Feb 2026**
Total Hours: **12 (4 lectures)**
E-mail: anandkumar13@iisc.ac.in
Course Website:
https://sites.google.com/view/kumar-anand/teachingoffered-courses/antenna-design-and-simulation-with-matlab

Meeting link : Will be shared later

Contact email ID: isss.forum@gmail.com

Registration link:
https://forms.gle/oj5wyVsnh15tUcZU8