

National Institute of Technology Tiruchirappalli

The National Institute of Technology (formerly known as Regional Engineering College) Tiruchirappalli (NITT) was started as a joint and co-operative venture of the Government of India and the Government of Tamil Nadu in 1964 with a view to catering the needs of manpower in technology for the country. NITT is one of the 31 National Institutes of Technology established by the Government of India and ranks First among all the NITs in NIRF during three consecutive years. The institution offers Undergraduate Courses in ten branches and Post Graduate Courses in twenty-one disciplines of Science, Engineering & Technology besides M.S. (by Research) and Ph.D. in all the departments.

Website: <https://www.nitt.edu>

IEEE Student Branch - NITT

The world's leading professional organization for the advancement of technology has a local address at NIT, Tiruchirappalli. Members rely on the IEEE as a source of technical and professional information, resources, and services. To foster an interest in the engineering profession, the IEEE SB NITT indulge in various technical and non-technical activities. Other important constituencies include prospective members and organizations that purchase IEEE products and participate in conferences or other IEEE programs. IEEE SB NITT and its technical chapters encompasses undergraduate, postgraduate and Ph.D. Scholars from various departments.

Registration Process

Everyone willing to participate in the workshop must register by filling out the Google Form on or before **13.11.2022, 05:00 PM (IST)**. **Registration is FREE OF COST, but seats are limited** and the workshop will be conducted in **OFFLINE** mode only.

Registration link

<https://forms.gle/J4L1A5WqZjcK1BuYA>

Certification

An e-certificate may be issued to the registered participants subject to active participation and attendance.

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Who can apply?

**UG & PG Students, Research
Scholars, Faculty/Staff members
of NIT Tiruchirappalli**

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Director, NITT

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A Five-Day Hands-on Training Program on Evolution of Electromagnetics Using TaraNG & Feko

November 16th To November 20th 2022

**Organized by
ECE Department**

**IEEE Student Branch
&
IEEE APS Chapter**



**National Institute of Technology
Tiruchirappalli**

in association with





National Institute of Technology, Tiruchirappalli
 Department of Electronics and Communication Engineering
A Five-Day Hands-on Training Program on
Evolution of Electromagnetics Using TaraNG & Feko

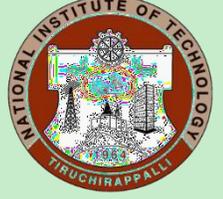


November 16th to November 20th 2022

Venue: Conference Hall, SJB, ECE Department, NIT Tiruchirappalli

Day	Session	Topics to be covered	Speaker
Day-1 (16-11-2022) Wednesday	2.20 pm to 2.30 pm	Inaugural Address	Dr. P. Muthuchidambaranathan Head of the Department, ECE, NITT
	2.30 pm to 4.20 pm	<ol style="list-style-type: none"> 1. Introduction to TaraNG simulation platform 2. Visualize 3D vector fields and perform different vector operations on them (like Addition, Subtraction, Circulation, Divergence, Gradient etc.). 3. Simulate Electric field generated from different source and under arbitrary media like dielectric. Solution to Poisson's and Laplacian equations. 	
	4.30 pm to 6.30 pm	<ol style="list-style-type: none"> 1. Understand the boundary conditions electric field properties at boundaries of solution space. Neuman's Boundary/Dirichlet Boundary. 2. Simulate the behavior of moving charges in presence of electric and magnetic fields and animate them. Verify the trajectory with analytic solution. 3. Electrostatic & Magnetostatic concepts line of forces. Laws like Biot-Servet's Law, Coulomb's Law, and Image theory. 	
Day-2 (17-11-2022) Thursday	2.20 pm to 4.20 pm	<ol style="list-style-type: none"> 1. To simulate the superposition and polarization of EM waves and animate Linear and Circular Polarization (LHCP, RHCP) of EM waves. 2. Electromagnetic waves transmission and reflection under arbitrary media (like simple dielectric, lossy dielectric, orthogonal dielectric, conductors, magnetic materials) to visualize Skin effect and other phenomenon. 	Mr. Swapnil Gaul Founder TaraNG
	4.30 pm to 6.30 pm	<ol style="list-style-type: none"> 1. To visualize EM waves in different microwave components like Parallel plate transmission lines, microstrip lines, waveguides, etc. 	
Day-3 (18-11-2022) Friday	2.20 pm to 4.20 pm	<ol style="list-style-type: none"> 1. Transmission lines under different load conditions and Smith chart 	
	4.30 pm to 6.30 pm	<ol style="list-style-type: none"> 1. To simulate concepts of few basic antennas like Dipole, Yagi-Uda. 2. Simulation examples in Microwave circuits, RADAR Analysis, Bio-electromagnetics, EMI-EMC and few more. 3. Short introduction to current trends in microwave engineering. 	

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 Department of Electronics and Communication Engineering
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Venue: Conference Hall, SJB, ECE Department, NIT Tiruchirappalli

Day	Session	Topics to be covered	Speaker
Day-4 (19-11-2022) Saturday	10.30 am to 12.30 pm	1. Introduction to the capabilities of Altair FEKO solution in terms of various applications 2. Introduction to the interfaces of CADFEKO & POSTFEKO in detail with different features. 3. Design & complete analysis of a few basic antennas at different frequencies.	<p align="center"> Mr. Kartik Goyal Application Specialist, Design Tech Systems Pvt. Ltd, New Delhi </p>
	2.00 pm to 4.00 pm	1. Design & analysis of an antenna structure using parametrization & optimization. 2. Introduction & designing an antenna array using different features & macros available. 3. Detailed way to set up a problem statement for different aspects in the case of multiple antennae	
Day-5 (20-11-2022) Sunday	10.30 am to 12.30 pm	1. Design & analysis of an FSS structure using PBCs. 2. Design & analysis of a multilayer AMC structure using different solvers in detail. 3. Detailed way to set up a full scale FSS array (or any competitive structure) for RCS computations	
	2.00 pm to 3.50 pm	1. Detailed way to set up an antenna for placement analysis. 2. Detailed way to set up a case for EMI/EMC analysis. 3. Few examples of lightning strike analysis & EMP analysis.	
	3.50 pm to 4.00 pm	Program Feedback and Valedictory Session	