



ACCELERATE  
विद्यया



## Biomedical Signal & Image Processing: A hands-on Approach

(Under the KARYASHALA Scheme - A SERB initiative)

Organized by

Department of Electronics and Communication Engineering,  
National Institute of Technology, Tiruchirappalli

22<sup>nd</sup> – 28<sup>th</sup> August 2022

### About The Institute:

National Institute of Technology (formerly known as Regional Engineering College) Tiruchirappalli is one among the premier Institutions of India and is well known for its high standards in teaching and research. It offers 10 undergraduate and 23 post-graduate programs in disciplines spanning engineering, science, architecture, and management. It has been declared as an Institute of National Importance by the Government of India under NIT Act. NIT Tiruchirappalli retained its No. 1 position among all NITs, 6th year in a row in the “India Rankings 2021” released by NIRF. The Institute has signed MoUs with various Industries and Institutions both in India as well as in abroad to promote collaborative research and consultancy.

### Department of Electronics and Communication Engineering:

The Electronics and Communication Engineering (ECE) Department was established in the year 1968. The department offers Undergraduate (UG), Postgraduate (PG), M.S. (By Research) and Ph.D. degree programs that provide students with the knowledge and tools they need to succeed in the Electronics and Communication Engineering. Research in the department focuses on high-impact various disciplines: Communication systems, Wireless networks, Signal and Image Processing, RF MEMS and MIC, Microwave antennas, Optical communication and Photonics, VLSI technologies.

### About the Programme:

The workshop introduces techniques and procedures for analysis of biomedical signals and images like: cardiology signals (electrocardiogram - ECG), neurophysiology signals (electroencephalogram - EEG), medical images (computed tomography – CT images, MRI Images, OCT images and Fundus Images) with the emphasis on problems of biomedical researches.

### Focus Areas:

- Clinical Importance of ECG
- Introduction to Signal Processing Using Matlab
- Modified Limb Lead system for Diagnostic ECG
- ECG & EEG Signal Processing using Matlab
- Basics of MRI
- Basics of CT imaging
- MRI Image processing using Matlab
- Basic Medical Image processing algorithms using Matlab
- CT Artifacts reduction & Reconstruction using Matlab
- OCT & Fundus Imaging
- OCT & Fundus image processing using Matlab
- Medical Device Development - An overview

**Target Audience:** Research scholars, PG Students

**Resource Persons:** The course faculty includes resource persons from IITs, NITs and other reputed Organizations.

**The number of participants is restricted to 25.**

**Timing: 10AM-12PM & 2PM-4PM**

**There is no Registration Fee, TA will be given as per government norms, Free Food & Accommodation**

### How to apply:

1. The applicant should fill the online form to apply using the link : <https://forms.gle/hzFAHfCHFW2J3k6A>
  2. The applicants must produce a letter of authentication from their Supervisor/HoD/Head of Institute indicating their association with institute and “No Objection Certificate (NOC)” for allowing their student to undergo karyashala, if selected.
- The last date to apply is 5<sup>th</sup> August 2022.

### Coordinators:

**Dr. P. Palanisamy, Professor**  
Department of ECE, NIT Tiruchirappalli

**Dr. Varun P. Gopi, Assistant Professor Grade-I**  
Department of ECE, NIT Tiruchirappalli

### Address for Communication:

Coordinator, Karyashala High end workshop, Department of ECE, NIT Tiruchirappalli, Tamil Nadu –620015  
Mob: +917560905304, Email: [karyashala.ece.nitt@gmail.com](mailto:karyashala.ece.nitt@gmail.com)