



Thiagarajar **65**
College of Engineering YEARS
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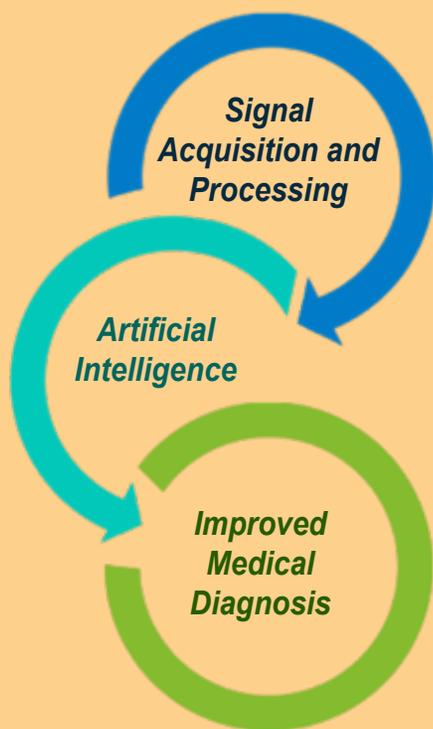
Madurai - 15



Workshop
 on

Medical Signal Processing with Artificial Intelligence

(17th & 18th December 2022)



Organized by

Department of Electronics & Communication Engineering

Coordinators

Dr.S.J.Thiruvengadam
Dr.K.Rajeswari
Dr.G.Ananthi



About the College

Thiagarajar College of Engineering (TCE), Madurai, an autonomous institution, affiliated to Anna University, Chennai, is one among the several Educational and philanthropic Institutions founded by Late. Shri Karumuttu Thiagarajan Chettiar, established in 1957. TCE offers 9 undergraduate (UG), 10 postgraduate (PG) and Doctoral programmes in Engineering and Science. The programmes have been accredited by National Board of Accreditation (NBA) and National Assessment and Accreditation Council (NAAC) with the Grade A+ (3.47 out of 4). The College has a Technology Business Incubator unit supported by the Govt. of India and it has incubated a company Thiagarajar Telekom Solutions Limited in the area of RF Systems and Antennas. TCE has secured 85th rank in the National Institutional Ranking Framework (NIRF-2022) of MHRD, Government of India. Conceive-Design-Implement-Operate (CDIO) framework is adopted to provide a systematic approach in realizing the stakeholder expectations to raise the educational standard to global needs.

About the Department

Department of Electronics and Communication Engineering offers B.E. degree programme in Electronics and Communication Engineering and M.E. Degree in Communication Systems. Both the programmes are accredited by National Board of Accreditation (NBA). The department has been awarded for Best Industry-Linked Electronics and Engineering Institute by AICTE-CII in 2014. This DST FIST supported department has completed sponsored research projects from research organizations like RCI, DRDL, LRDE, DEAL, DLRL, BrahMos Aerospace, ISRO and consultancy works in the field of Wireless Communications and Signal Processing. The department has established industry sponsored laboratories with National Instruments, Agilent Technologies, CISCO, Altera, Freescale, Intel, Cypress and Texas Instruments.

Register Online at

<https://forms.gle/tavopveDCawS1ufG7>

Further details contact

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 Mobile No: 9994420039

Details of Registration

Registration Fee: Rs.1180/- (Rs.1000 +18% GST) (Rupees One Thousand and Hundred and Eighty only)

Payment Link: <https://eazypay.icicibank.com/>
 Type "T C E" and select ("T C E SOUVENIOR ") from the Drop down Menu.

Resource Persons

Dr. Deepak Joshi

Centre for Biomedical Engineering, IIT Delhi & Dept. of Biomedical Engineering, AIIMS, New Delhi

Experts from ADInstruments Pvt. Ltd

Workshop Outline

Genesis and recording of EMG using Arduino – Electromyography (EMG) – Motor Units, Motor Unit Action Potential, Recruitment of Motor Units, Muscle Fiber Recruitment, Operational Amplifier, Input Impedance, Common mode rejection ratio, Sampling Frequency, Digital devices – Microcontrollers, Arduino

Biosignal Processing and Artificial Intelligence: Time-domain analysis – Frequency based analysis - filtering, time-frequency analysis, wavelets, cross spectrum and coherence, Synergy calculations, Independent Component Analysis (ICA), Principal Component Analysis (PCA), Linear Discriminant Analysis, Deep learning

Demonstrations: EMG recording, MATLAB-based ICA/PCA signal processing, EMG-based classification in MATLAB, EOG, basic EEG, Nerve Conduction Velocity, Pulse Transit Time, Pulse, Respiration and Wireless HR sensor signals