Department of Electrical and Electronics Engineering

National Institute of Technology Karnataka,

Surathkal Srinivasnagar

Mangalore 575025 Karnataka India

July 2014

INSTITUTE VISION

To facilitate transformation of students into good human beings, responsible citizens and competent professionals, focusing on assimilation, generation and dissemination of knowledge.

INSTITUTE MISSION

- Impart quality education to meet the needs of profession and society, and achieve excellence in teaching-learning and research.
- Attract and develop talented and committed human resource, and provide an environment conducive to innovation, creativity, team-spirit and entrepreneurial leadership.
- Facilitate effective interactions among faculty and students, and foster networking with alumni, industries, institutions and other stake-holders.
- Practice and promote high standards of professional ethics, transparency and accountability.

VISION OF THE DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The Department of Electrical and Electronics Engineering strives to be a Centre of Excellence in education, training and research, producing high quality engineers and researchers. In this endeavour, the Department will continually develop knowledge and quality of staff, upgrade and create new laboratory facilities, revise the teaching program, acquire adequate new equipment to keep abreast, contribute and progress in the emerging technologies and committed for rendering the best service to the society

MISSION OF THE DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

- To produce graduates with a strong foundation in the basic sciences and mathematics that will enable them to identify and solve electrical engineering problems.
- Provide students with a solid foundation in Electrical Engineering that prepares them for life-long careers and professional growth in fields of their choice.

- Provide our students with the basic skills to communicate effectively and to develop the ability to function as members of multi-disciplinary teams.
- Provide our students with a broad-based education so that they can appreciate diversity of opinion, better understand ethical issues, and develop a more global perspective.
- Provide our students with a relevant engineering design experience that is integrated across the four-year curriculum. Through those experiences we will develop in our students an understanding of the relationships between theory and practice

ABOUT THE DEPARTMENT

The Department of Electrical and Electronics Engineering was established right from the inception of the institute i.e., on August 6, 1960, with the under-graduate programme. The post-graduate programme in Power and Energy Systems was started in the year 1992. Formal research activities leading to a doctoral degree (PhD) were introduced in the year 2003. The department has always exerted the best of its effort to meet the objectives of achieving technical excellence in the areas of Electrical and Electronics Engineering such as power systems, power electronics and drive systems, energy systems, instrumentation, control, industrial automation, analog and digital electronics, signal processing, microprocessor and microcontrollers.

The department has well-equipped state-of-the-art laboratories to complement the theoretical coursework. The faculty of the department have been involved in several research projects in cutting-edge technologies and publications in many international journals and conferences. The department also undertakes many consultancy projects from industry and other organisations. There are several full-time Ph. D. scholars pursuing research in the department in addition to the part-time registrants. Some of the advanced equipments were procured and maintained under TEQIP-I and TEQIP-II programmes. The testing and consulting service provided by the department faculty to the nearby industries and other Govt. organizations has placed the Industry-Institute collaboration at a higher platform. The faculty members are actively engaged in the Research and Development activities with externally sponsored projects from various funding agencies like CPRI, MoPs, MoCIT, KSCST, DELL, Schneider Electric, L&T, Robert Bosch to name a few.

Students from the department are recruited by multinational Core-companies as well as IT-companies. A large number of students have been obtaining admissions in to reputed institutions in USA, Australia, Canada, Singapore, and the European Union for higher studies. Presence of our alumni at various Industries and reputed universities across the globe has helped our graduates to plan their post graduate and doctoral studies.

Programmes offered:

Undergraduate

B.Tech. in Electrical and electronics engineering	Annual intake: 111
Admission through DASA in last five years	40

Postgraduate

M.Tech. in Power and Energy Systems	Annual intake: 27
M.Tech. (By Research)	Annual intake: 02
Admission through ICCR in last five years	07

Department is recognised center for QIP and QIP-Polytechnic

Doctoral

Annual Intake: 09

The Department offers Ph.D. Program in areas like applications of Power Electronics to Renewable Energy Sources, Application of Soft Computing Techniques, Circuit Theory, Control Systems, Distributed Generation, Electrical Field Computations, Energy Management, Energy Systems, High Voltage Engineering, Insulation Engineering And Diagnostics, Optimization, Power Distribution System Management, Power Electronics And Drives, Power System Dynamics And FACTS Application To Powers Systems, Power System Operation And Control, Power System Restructuring And Deregulation Power System Protection, Signal Processing, Wireless Networks, Smart Grid Technologies, SMPS, System Identification And Control.

Department is recognised center for QIP and QIP-Polytechnic

Faculty Members

Ashvini Chaturvedi, Ph.D. (Multimedia University Malaysia)
Associate Professor
Research Interest: Digital Signal Processing
http://www.eee.nitk.ac.in/faculty/ac

Dattatraya N Gaonkar, Ph.D. (IIT-R)
Assistant Professor
Research Interest: Power System Operation and Control, Distributed Generation, Power Electronics
http://www.eee.nitk.ac.in/faculty/dng

Debashisha Jena, Ph.D. (NIT-Rourkela)
Assistant Professor
Research Interest: System Identifications, Neural Networks And Evolutionary Computations
http://www.eee.nitk.ac.in/faculty/

Girisha Navada H, M.Tech. (NIT-Calicut)
Assistant Professor
Research Interest: Control Systems
http://www.eee.nitk.ac.in/faculty/hgn

Jora M Gonda, M.E. (IISc), (Ph.D., NITK)
Associate Professor and Head of the Department
Research Interest: Power Systems, Signal Processing, Power Electronics and Drives
http://www.eee.nitk.ac.in/faculty/jmg

Kalpana R, Ph.D. (IIT-D)
Assistant Professor
Research Interest: Power quality Improvements in SMPS
http://www.eee.nitk.ac.in/faculty/rk

Karthikeyan A, Ph.D. (NIT-Trichy)
Assistant Professor
Research Interest: Power Electronics Applications to Renewable Energy Systems
http://www.eee.nitk.ac.in/faculty/ak

Manjunatha Sharma K, Ph.D. (NITK)
Associate Professor
Research Interest: Distribution System Automation and Distributed Generation
http://www.eee.nitk.ac.in/faculty/kms

Nagendrappa H, (Ph.D., Univ. of Victoria, Canada)
Assistant Professor
Research Interest: Power Electronics and Renewable Energy
http://www.eee.nitk.ac.in/faculty/hn

Panduranga Vittal K, Ph.D. (NITK)
Professor
Research Interest: Power System Protection and Adaptive Relaying, Transient Behavioural Modelling of Power Apparatus & FACT devices,
Smart Grid Environment, Embedded System Application to Energy Systems
http://www.eee.nitk.ac.in/faculty/kpv

Parthiban P, Ph.D. (IIT-R)
Assistant Professor
Research Interest: Drives, SMPS, Active Filters
http://www.eee.nitk.ac.in/faculty/pp

Punekar G S, Ph.D. (IIT-Kgp)
Associate Professor
Research Interest: High Voltage Engineering, Electric Field Computations and Stress Analysis
http://www.eee.nitk.ac.in/faculty/gsp

Rajagopala K, M.Tech. (IIT-Kgp)
Associate Professor
Research Interest: Power Systems
http://www.eee.nitk.ac.in/faculty/krg

Rao I R, (Ph.D., NITK)
Assistant Professor
Research Interest: Power Systems
http://www.eee.nitk.ac.in/faculty/irr

Shubhanga K N, Ph.D. (IIT-B)
Associate Professor
Research Interest: Power System Dynamics and FACT Devices
http://www.eee.nitk.ac.in/faculty/kns

Tukaram Moger, (Ph.D., IISc)
Assistant Professor
Research Interest: Computer Aided Power System Analysis, Reactive power dispatch and Voltage Control, Power System Restructuring
http://www.eee.nitk.ac.in/faculty/tm

Udayakumar R Y, Ph.D. (IIT-B)
Professor
Research Interest: Renewable Energy Resources, Power Electronics, Energy Management, Smart Grid
http://www.eee.nitk.ac.in/faculty/ury

Vinatha U, Ph.D. (NITK)
Associate Professor
Research Interest: Power Electronics and Renewable Energy Systems
http://www.eee.nitk.ac.in/faculty/uv

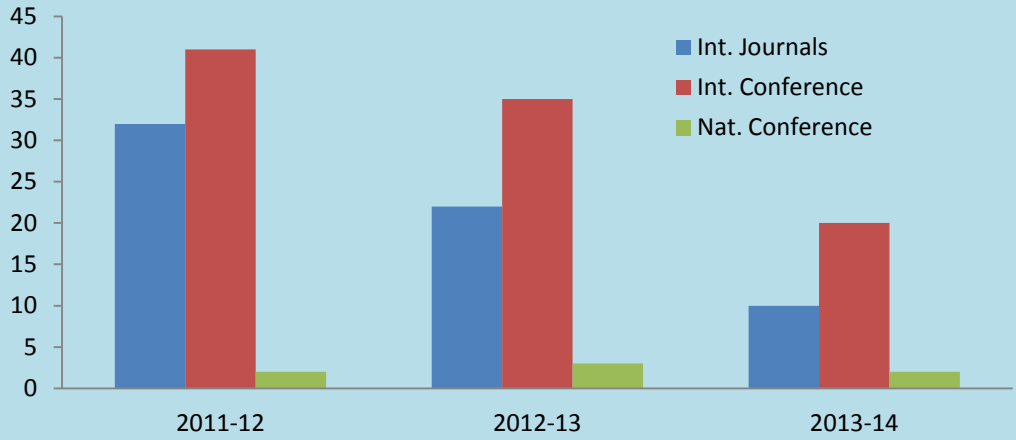
- **Research Funding Statistics**

2011-12		2012-13		2013-14
20 Lakhs	20 lakhs	5 lakhs	15 lakhs	45.07 lakhs

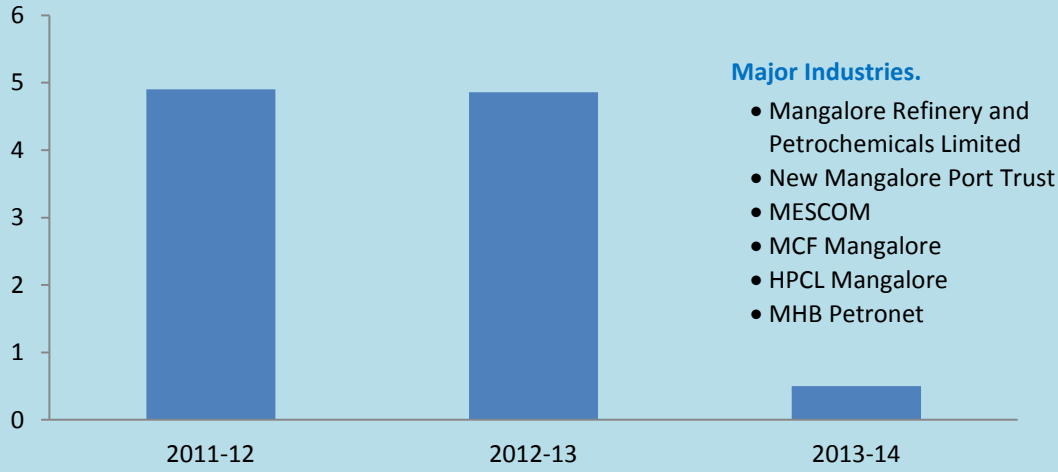
Project Topics:

Investigation On The Operation & Control Of Multiple Distributed Generation Resources In A Microgrid (Phase-I),sponsored by Ministry of Power Government of India through CPRI Bangalore
Virtual Laboratory on substation automation and industrial drives
FPGA Implementation of Maximum power point tracking system using Neural Networks

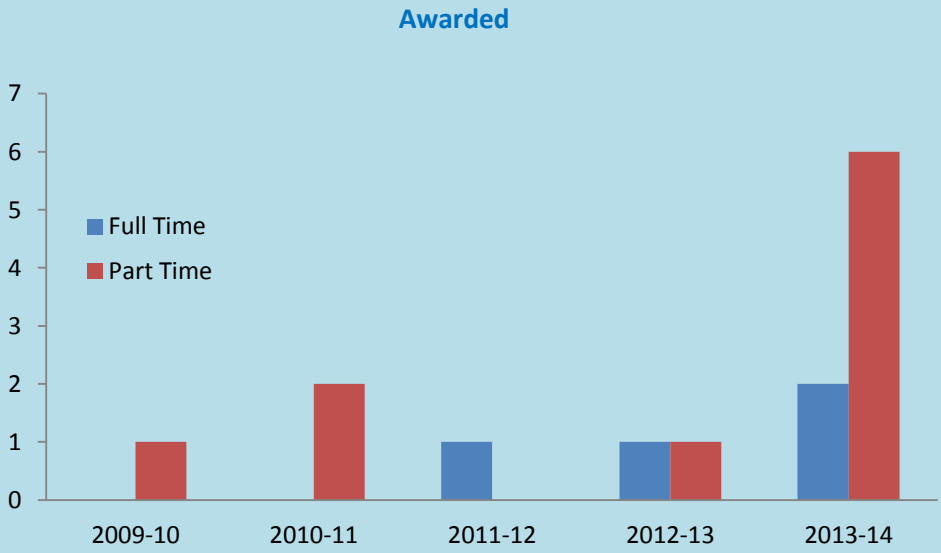
- **Research Publications**



- **Consultancy Earning**



- **Ph.D. Awarded and ongoing**



Titles of the Ph.D. Theses Awarded:

- Self Excited Induction Generator
- System Design Approach Of Digital Controller Application To Inherent Poor Dynamic Behaviour Three Phase Squirrel Cage Induction Motor
- Development Of Adaptive Distance Relaying Schemes To Mutually Coupled Double Circuit And Series Compensated Transmission Lines
- Novel PWM Techniques For Three-Level Inverters Application To Induction Motor Drives, September A Novel Controller For Switched Reluctance Motors
- Generators Voltage Regulation Of Power Distribution System With Interconnected Distributed Generators
- Rural Electrification In Deep Areas Of India And Feasibility Of Solar Home Systems
- Electrical Power Distribution System Management Under DE-Regulation Regime
- Application Of Error Correction Codes For Enhancing Data Integrity In Power Line Channels
- Design And Evaluation Of Controllers For Wave Energy Based Electricity Generation System
- Investigations On Non-invasive Fault Diagnostic Techniques For Three Phase Induction Motor With Mixed Eccentricity
- Adaptive Distance Relay For STATCOM Connected Transmission Lines – Development Of DSP Based Relay Hardware, Relaying Schemes And Hardware In Loop Testing Procedures
- Solar Photo Voltaic Water Pumping System
- Photo Voltaic And Municipal Solid Waste As Distributed Generation Resources: Modeling, Analysis And Benefit Quantification

PhD ongoing: 34	
Full Time:27	Part Time:07

Facilities in the Department

- Digital Implementation Using Microprocessors/microcontrollers/DSC,DSP and FPGA hardware and software facilities from Xilinx, Micro sim, free scale semiconductors and Texas instruments
- Energy Audit Equipments
- Real Time Hardware emulating Flat-forms; dSPACE
- Wind solar Hybrid microgrid system
- High voltage lab with 100kV 100 mA HV ac source and associated DC and impulse voltage test facility.5kV Tera Ohm insulation Tester. Insulation oil Test kit, 35pF, 100kV standard capacitor, Digital earth Resistance Test kit. AEPD analyser
- VSC models developing-house, testing/performance evaluation of power converters
- scale down model of 4 machine power systems, power system simulation lab within house developed simulation packages
- Departmental computational facilities catering for signals and systems, power system dynamics, control systems and digital signal processing laboratory

Contact us:
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