

## **2016-17 RESEARCH GROUP**

### **Power Electronics & Drives (PED)**

The great pace of development in power semiconductor devices, energy storage elements, faster and accurate digital control techniques and vast application area had made this sector of electrical engineering one of the most popular sector for research. The department is well equipped with various simulation softwares, experimental set-ups, measuring and analyzing devices, dedicated faculty members and expert technician staff.

#### **Associated Faculty Members**

Dr S K Tripathi  
Dr. Manoj Badoni  
Prof. Ankit Singhal  
Prof. Nitish Verma  
Prof. Anubhav Agrawal  
Prof. Ashish D Thombre

### **Computational Intelligence & System Modelling Analysis (CISMA)**

The Computational Intelligence & System Modelling Analysis (CISMA) was created within the Department of Electrical and Electronics Engineering to focus on research in advanced trends in Computational Intelligence and their applications. The Computational Intelligence Research Group at KIET explores engineering issues related to neural network, fuzzy systems and evolutionary computing. Neurofuzzy integrated system utilizes features of both Neural and Fuzzy networks together for better results by which we can easily generalize the unseen data from seen data by forming the fuzzy rules and training. A large number of highly interconnected processing nodes are connected through the weights in neural network.

The overall aim of the research for the developing applications of interdisciplinary nature for the benefit of the society at large and the same time provide frameworks for advancement of knowledge in the area. The following projects were funded by different agencies

- Project Title: “Facilitation of Medical Expertise in Cancer” Received \$ 897.00 by the IEEE Foundation, USA (Completed).
- Project Title: “To facilitate Medical Expertise in remote rural areas using the Intelligent Technique like virtual medical advice and assistance” Sanction Letter received by AICTE for Rs. 200000/-.
- Project Title :- “An approach based on principal component analysis and adaptive neuro-fuzzy inference system to diagnosis of diseases” Received Rs. 10,000/- from IEEE- All India Young Engineers’ Humanitarian Challenge (AIYEHUM-2012) (Completed).

#### **Associated Faculty Members**

Dr. Neeraj Kumar Gupta  
Prof. Sheetal Singh

## **Embedded System (ES)**

The term embedded systems is quite a complex one. Simply put, it is a combination of hardware and software that performs the component of a larger system. High-profile embedded chips are scalable, generate small amounts of heat, and consume less power. These are generally preferred for their speed, accuracy and reliability. As they are compact in size and ability to perform time-critical and task specific operators, embedded devices find application in all segments of industrial and commercial market places and home appliances.

In recent years, it became apparent that control systems as integral components of larger systems, should be developed and designed concurrently with mechanics, hydraulics, and electronics. It is important that engineers have a good understanding of the implications of software technology embedded into traditional engineering systems. Current machines consist of physical components providing the means and a control system employing those means to fulfill the machine's function. Together, they build up the controlled machine, which can also be called an embedded system. New innovative applications in different areas will make embedded systems as one of the fastest developing technology of the near future.

### **Associated Faculty Members**

Prof. D. Blandina Miracle  
Prof. Ruchika Singh  
Prof. Anil Kumar  
Prof. Arun Kumar  
Prof. Swati Siddhu

## **Power System Technology (PST)**

Power system research covers the topics like Energy Management Systems, Power system automation, Flexible AC Transmission Systems (FACTS), Restructured Power System Operation, Power Quality monitoring and analysis, Custom Power Devices, Renewable Energy Systems. High Voltage Engineering, Insulation Coordination, switchgear and various protection scheme, Treeing and Tracking Phenomena in insulation material, Condition Monitoring of Power Apparatus etc. Department is well equipped with various power system simulation software, experimental set-ups, measuring and analyzing devices, dedicated faculty members and expert technical staff.

### **Associated Faculty Members**

Prof. Pavan Khetrapal  
Prof. Anmol Gupta  
Prof. Pradeep Katariya  
Prof. Swati Singhal  
Prof. Ameer Faisal  
Prof. Suneel Kumar Maurya  
Prof. Rajeev Kumar  
Dr. Manoj Badoni  
Dr. Brijesh Singh

## **Renewable Energy and Smart Grids (RESG)**

A renewable research group in the department of electrical & Electronics Engineering is in the pace of exploring the recent trends in the field of renewable energy technology.

The Department is equipped with a demonstration setup of Solar PV Module ready to perform various experiments, A wind Energy Hardware Simulator ready to conduct research related work and a Dual Slope Solar thermal Still is also available for Study.

### **Associated Faculty Members**

Prof. Yaduvir Singh  
Dr. Yatender Chaturvedi  
Prof. Mohd. Faisal Jalil  
Prof. Mohd. Shariz Ansari  
Prof. Rahat Ullah Khan  
Prof. Arvind Kumar Sharma  
Dr. Brijesh Singh  
Prof. Jyoti Srivastava

## **Communication System (CS)**

The Communication research group was created within the Department of Electrical and Electronics Engineering to focus on research in advanced trends in Communication engineering and their applications. Communication research Group at KIET explores engineering issues related to different communication schemes, their drawback and scope of improvement. Group also focus on various modes of communication like optical, wireless and 3G, 4G standards of mobile communication.

The overall aim of the research for the developing applications of interdisciplinary nature for the benefit of the society at large and the same time provide frameworks for advancement of knowledge in the area.

### **Associated Faculty Members**

Prof. Brajesh Kumar Tiwari  
Prof. Naveen Kumar

## **Electromechanically Energy Conversion (EEC)**

The EEC Group was created in the Department of Electrical and Electronics Engineering to focus on research in conventional electrical machines and also special machines, innovative controls using high efficiency drives and versatile control strategies and their applications. The EEC group at KIET explores engineering issues by analyzing the existing systems in MATLAB simulation and come up with proposals to improve the existing systems.

The overall aim of the research is to carry out simulation for complicated projects that might not be possible as real time projects for the benefit of the society at large and at the same time

provide frameworks for advancement of knowledge in the area.

**Associated Faculty Members**

Prof. Ashish D Thombre

Prof. Masood Rizvi

**Control Systems and Application (CSA)**

The Control System Research group was created within the Department of Electrical and Electronics Engineering to focus on research in advanced trends in Control System and its applications. The Control System Research Group at KIET explores engineering issues related to Industrial control. The control system research group investigates the theoretical and algorithmic principles underlying modern electrical engineering in order to innovatively solve current day engineering problems faced by academia and industry. Control Engineering is of significant interest in most areas of industry.

**Associated Faculty Members**

Prof. Varun Sharma

Prof. Alok Kumar Pandey