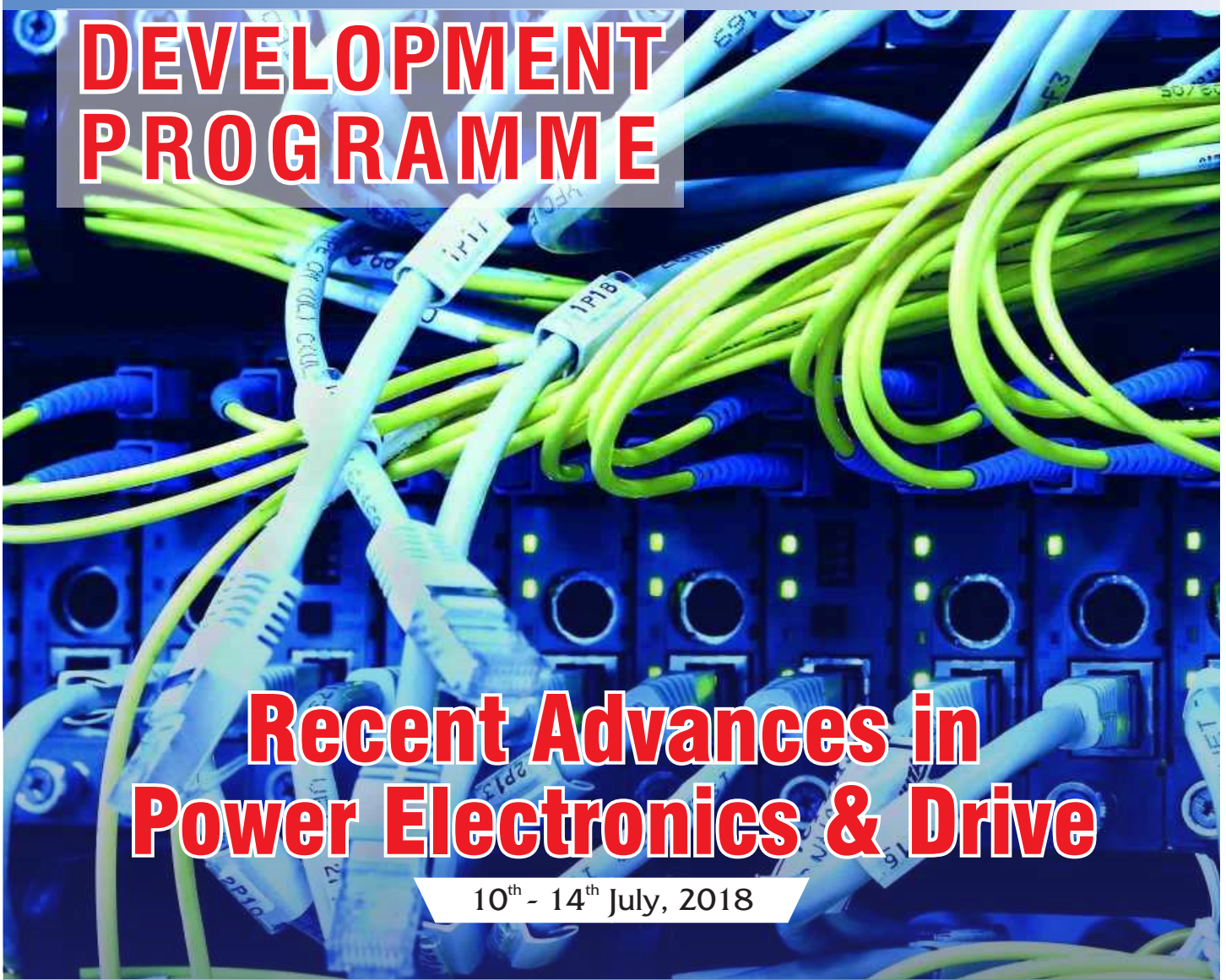
2nd FACULTY DEVELOPMENT PROGRAMME



Recent Advances in Power Electronics & Drive

10th - 14th July, 2018

Organized by :

Department of Electrical & Electronics Engineering

Shri Ram Murti Smarak College of Engineering & Technology, Bareilly

Sponsored by

TEQIP III & Dr. A.P.J. Abdul Kalam Technical University,

Lucknow, Uttar Pradesh

FACULTY DEVELOPMENT PROGRAM

Recent Advances in Power Electronics & Drive

Motivator & Guide

Prof. (Dr.) Vinay Kumar Pathak
Hon'ble V.C., Dr. APJAKTU, Lucknow

List of Eminent Speakers

Prof. (Dr.) Rajesh Gupta
MNNIT Allahabad

Prof. (Dr.) A.K. Gupta
Dean
MJPRU, Bareilly

Dr. Manoj Tripathi
Associate Professor
IIT Roorkee

Dr. Yogesh Chauhan
Associate Professor,
KNIT Sultanpur

Dr. Surya Pratap Singh
(Head & Associate Professor)
REC Ambedkar Nagar

Dr. Aseem Chandel
Associate Prof. Head & Dean
Regional Engg. College Mainpuri

Chief Patron

Shri Dev Murti
Chairman, SRMS Trust

Patron

Shri Aditya Murti
Secretary, SRMS Trust

Advisors

Er. Subhash Mehra
Trust Administrator, SRMS Trust

Prof. (Dr.) Prabhakar Gutpa
Dean Academics, SRMSCET, Bareilly

Organizing Committee

Program Co-ordinator
Mr. Sanjeev Kumar
Mob. 9458702654
E-Mail, veejnas51@gmail.com

Contact Persons

Mrs. Smita Dinker
Mob. 9458702522
E-Mail, smitadinker5@gmail.com

Ms. Sadaf Qasim
Mob. 9458701124
E-Mail-sadaf.riya@gmail.com

NEED AND MOTIVATION:

Power Electronics deals with the processing and control of Electrical Power from an Electrical source into the form and quality suitable for a particular Electrical Load. Electricity is the most important commodity. Life seems impossible without Electricity. Electric motors are used in a very big power range, from a few watts to thousands of kilowatts. Many applications require very precise position adjustment (like in robotics). In several applications optimum performance and efficiency are the major concern. Variable speed drive system helps in optimization of process so as to reduce investment cost, operational cost, and maintenance costs. Energy saving is another big advantage of variable speed drive. In all Variable speed drive System power electronic converter work as interface between the input power and the motor. Power Electronics and Drives are very important courses in the curriculum of Electrical Engineering and Electronics Engineering. Every engineer in the area of Electrical Engineering needs to have a detailed exposure to power Electronics and Drives.

OBJECTIVE:

The Faculty Development Program is sponsored by DR. APJ Abdul Kalam Technical University, Lucknow, to enhance the quality of classroom delivery of academic programs being run and to foster a better ecosystem for research and innovation at its affiliated institutions. The aim of this FDP is to discuss the fundamentals and recent developments in power electronics and electrical drives. This faculty development programme on topic "Recent Advances in Power Electronics and Drives" has Practical aspects, focuses on upgrading the teaching learning, analysis and research skills about the advances in the theory in various fields of electrical engineering and its practical aspects. This FDP programme will enrich the link between academia and industry and will enhance the collaboration among them. It also explores the state of the art research issues related to thrust areas like application of power electronics in industrial drive. Power electronics makes up a large part of engineering and has close connections with many areas of physics, chemistry and mechanics. It establishes a rapidly expanding field in electrical engineering and a scope of its technology covers a wide spectrum. The Faculty Development Program is intended-

- To understand the concepts through illustrations and applications.
- To train the participants with the teaching methodology.
- To introduce the subjects in a different perspective and to impart better knowledge and understanding of the subjects.

OVERVIEW:

Power electronics is interdisciplinary in nature and is used in a wide variety of applications, such as a cell phone charger, a personal computer, a microwave oven, an MRI system, a hybrid electric car, or even the electrical grid. The importance of power electronics has grown over the years due to several factors. A few of these are the advent of smart power devices and the increasing global concerns about the effects of environmental pollution. Smart power devices are expected to become ubiquitous and revolutionize the way power is handled. Electric vehicle is currently looked upon as a promising solution to curb urban pollution. Also, to avoid the pollution due to setting up of new power generating stations, power electronics has been called upon to ensure better utilization of existing capacity. The integration of power electronics with renewable energy sources such as solar and wind has a vast potential to meet the energy scarcity. Controlled Electrical Drives can be regarded as the most flexible and efficient source of controlled mechanical Power. Understanding and developing the controlled electrical drive system require a multi-disciplinary knowledge, starting from electrical machine theory through electronic power converter technology to control motion system in electrical drive by various techniques.

The focus of the electric drive R&D activity is to develop technologies and designs to reduce the cost and improve the performance in areas where the reliability of power electronics components is much needed. Electric drives control the speed, torque and

direction of downstream devices, most typically a motor. Variable frequency drive (VFD) provides speed control for AC motors such as those in conveyors, fans, pumps and shop tools. DC drives provide variable speed control for DC motors, ideas for applications, requiring low speed control, torque and power. Power applications with electronic converters do a lot of difficult work for us. Optimists envision power electronics doing more things for the population. Electronic appliances contribute to a healthier and more comfortable living all over the world.

CONTENTS OF ELECTRIC DRIVE :

1. Types of Drive control
2. Field oriented control
3. Direct torque control
4. Variable frequency control
5. Simulation of power electronic circuits
6. Speed control of DC motor through solid state control
7. DC-DC converters
8. Speed control of AC motors and process control circuit
9. Smart grid protection
10. AI Applications in power electronics and Drives

PEDAGOGY:

Different sessions of this program will be conducted by teams of eminent academicians from the IITs, NITs and state Technical universities like Regional Engineering College, KNIT. It will consist of a series of lectures and hands-on practical sessions.

ACCOMODATION:

The stay arrangement of outstation participants can be done in campus on nominal charges. The request for accommodation may be made in registration form.

REGISTRATION DETAILS :

- There is NO FEE for Registration. The registration will be done on first come first serve basis.
- The participants are requested to register their name by mailing a scanned copy of registration form to the email: sanjeev.kumar@srmscet.edu.
- The registration form can be downloaded from http://www.srms.ac.in/cet
- The confirmation of registration will be done by email.

LAST DATE FOR REGISTRATION : 5th July, 2018

ABOUT US :

Department of Electrical & Electronics Engineering of SRMSCET, Bareilly offers Four years fulltime B.Tech. Program & Two Years M. Tech. Program approved by AICTE and affiliated to Dr. A.P.J.A.K. Technical University, Lucknow. It is top ranked in B.Tech. Programs of the affiliating university and widely recognised by industries also due to emphasis on overall quality assurance. It organises seminars and workshops every year on latest areas of interest to provide a platform for knowledge sharing by Industry-Institute Interactions. During such occasions people from industry and academic institutions are invited for deliberation and discussion.

Venue

Pharmacy Seminar Hall

Department of Electrical & Electronics Engineering

Shri Ram Murti Smarak College of Engineering & Technology

Ram Murti Puram 13 Km, Bareilly-Nainital Road, Bhojipura-243202, UP, India

Phone: 91-581-2582246, 2582249, 2582331, 2582332, FAX: 91-581-2582330

E-mail : sanjeev.kumar@srmscet.edu, website : http://www.srms.ac.in/cet/

SRMS Institutions

SRMS College of Engineering & Technology, Bareilly

Shri Ram Murti Smarak College of Engineering & Technology Bareilly campus is offering AICTE approved M.Tech, MBA, MCA and B.Tech (Computer Science & Engineering, Electronics & Communication Engineering, Information Technology, Electrical & Electronics and Mechanical Engineering). SRMS College of Engineering & Technology (Pharmacy) is offering M.Pharm & B. Pharm Courses. The college is affiliated to Dr. A.P.J.A.K. Technical University, Lucknow.

infocetbly@srmscet.edu

SRMS College of Engineering, Technology & Research, Bareilly

Shri Ram Murti Smarak College of Engineering, Technology & Research is offering AICTE approved B.Tech Course in Computer Science & Engineering, Electronics & Communication Engineering, It is affiliated to Dr. A.P.J.A.K. Technical University, Lucknow.

inforcetr@srmscet.edu

SRMS Institute of Medical Sciences, Bareilly

1. **HOSPITAL :** Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly is a 950 beds multi super speciality tertiary & trauma care hospital.
2. **MEDICAL COLLEGE :** Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly is offering MBBS & MD, MS Course approved by Medical Council of India, New Delhi since academic session 2005-2006. It is affiliated to MJP Rohilkhand University, Bareilly.
3. **R.R. CANCER INSTITUTE & RESEARCH CENTRE**
4. **SRMS SCHOOL OF NURSING :** Offering diploma in General Nursing & Midwifery (GNM)
5. **SRMS INSTITUTE OF PARAMEDICAL SCIENCES**

info@srmsims.ac.in

SRMS SCHOOL OF NURSING

R.R. CANCER INSTITUTE & RESEARCH CENTRE

SRMS College of Engineering & Technology, Unnao

Shri Ram Murti Smarak College of Engineering & Technology Unnao campus is offering AICTE approved B.Tech Course in Computer Science & Engineering, Electronics & Communication Engineering, Mechanical Engineering, It is affiliated to Dr. A.P.J.A.K. Technical University, Lucknow.

inforcetlko@srmscet.edu

SRMS International Business School, Lucknow

Shri Ram Murti Smarak International Business School is a world class management school in Lucknow region offering AICTE approved PGDM course. It has distinctive faculty, global curriculum and world class infrastructure.

info@ibs.srms.ac.in

SRMS Functional Imaging & Medical Centre, Lucknow

Shri Ram Murti Smarak Functional Imaging & Medical Centre, Lucknow is India's one of the most advanced diagnostic centre at Lucknow which is a ONE STOP for all diagnostic needs under ONE ROOF like PET-CT Scan, Brain SPECT, DTPA Renal Scan, Bone Scan, Thyroid Scan & Nuclear Cardiology.

srmsfimc@srms.ac.in

Shri Ram Murti Smarak Trust Institutions

Bareilly City Office
Shri Ram Murti Marg, N-3, Rampur Garden,
Bareilly - 243 001 (U.P.)
Ph.: +91-581-2567571, 2567724; Fax : +91-581-2567792

Lucknow City Office
SRMS Diagnostics (Functional Imaging and Medical Centre)
CP 2/3, Vishwash Khand (near Flyover) Gomti Nagar, Lucknow
+91-522-2308987, 2308988

REGISTRATION FORM

2nd FACULTY DEVELOPMENT PROGRAM

Organised by Department of Electrical & Electronics Engineering, SRMSCET, Bareilly

and

Sponsored by TEQIP III & Dr. A. P. J. Abdul Kalam Technical University, Lucknow

on

"Recent Advances in Power Electronics & Drive"

(10 - 14 July, 2018)

1. Name _____
   (In Block Letters)

2. Designation _____

3. Name & Address of Institute/Organization _____

   _____

4. Address for Communication _____

   _____

   E-Mail _____

   Phone / Mobile No. _____

5. Accommodation Required Yes ☐ No ☐

Place _____

Date _____

_____

(Signature of the applicant)

Venue

Pharmacy Seminar Hall

Department of Electrical & Electronics Engineering

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