

Who can attend?

Research Scholars, PG and UG students of all departments SRMIST.

Registration fee:

1) Without hardware kit: Rs. 200/-

2) With hardware kit: Rs. 1000/-

Participants will get all the necessary hardware components to manufacture (hands-on) SMPC

Participants will get certificate for more than 75% of attendance

Registration information

- Registration will be on first come first serve basis
- First twenty registrations of hardware kit only get the opportunity to manufacture the SMPC
- Others can attend and learn the concept of SMPC manufacturing

Registration link:

<https://forms.gle/stxhtins4kV71kJ39>

Important dates

Last date for registration : 10th April 2022

Information of acceptance : 12th April 2022

Payment details



Description of the workshop:

Switched-Mode Power Converters (SMPC) are playing a dominant role in various applications such as Photovoltaic (PV) power extraction, Electric Vehicle (EV) charging, and Industrial drives. Design of such power electronic converters as per the required specifications is an art. Consequently, the primary focus of the workshop is to provide knowledge on the design, fabrication and testing of non-isolated SMPCs. Moreover, the participants will get hands on experience in step by step design of single-sided printed circuit board (PCB) manufacturing, inductor design, gate pulse generation using Arduino, DSPICE and FPGA. Finally, it will give complete exposure on manufacturing of SMPC as per the required specifications.

Topics to be covered:

1. **Basics of Switched-Mode Power Converters (Analysis)**
Introduction, design and selection of SMPC based on the application.
2. **Simulation (Hands-on)**
MATLAB Simulation in open loop and regulation of input and output parameters by closed loop for SMPC.
3. **Drawing of PCB layout (Hands-on Software)**
Development of PCB layout in PC using Proteous software
4. **Design of an Inductor (Hands-on Hardware)**
5. **Etching and soldering of PCB (Hands-on Hardware)**
Manufacturing of PCB layout on copper clad
6. **Generation of Gate signals (Hands-on Software and Hardware)**
Development and downloading of GATE signals using Arduino
7. **Testing of Prototype (Hands-on Hardware)**
Testing the prototype in the laboratory.
8. **Demonstration of closed loop control of SMPC using DSpace and FPGA**



SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

Five-Days Hands-on Workshop on Design, Fabrication and Testing of Non-Isolated Switched-Mode Power Converters

(18th April – 22nd April, 2022)

Convenor

Prof. K. Vijayakumar

Coordinators

Dr. K. Sateesh Kumar

Dr. S. Raghvendra

Organized by

Department of Electrical and Electronics Engineering
College of Engineering and Technology
SRM Institute of Science and Technology
SRM Nagar, Kattankulathur - 603 203, Tamil Nadu, India

Supported by



**INSTITUTION'S
INNOVATION
COUNCIL**
(Ministry of HRD Initiative)

ABOUT SRM IST

SRM Institute of Science and Technology is one of the top ranking universities in India with over 50,000 students and 3200 faculty members, offering a wide range of undergraduate, postgraduate and doctoral programs in Engineering, Management, Medicine and Health sciences and Science and Humanities. It has established itself as a premier centre for teaching, research and industrial consultancy in the country. It has world class infrastructure including smart classrooms, hi-tech labs, advanced instruments and equipments, research laboratories, modern library and Wi-Fi facility. SRM IST has been categorized as grade A University by Ministry of Human Resources Development (MHRD) Government of India and accredited by NAAC with 'A++' grade in 2018. SRM Institute of Science and Technology (formerly known as SRM University) has been awarded a Four Star rating by Quacquarelli Symonds ('QS'). Recently, SRM IST has been awarded the maximum 5 - Star rating on Teaching, Employability and Inclusiveness. Also it has been recognized as smart and clean campus with AICTE award.

ABOUT THE DEPARTMENT

VISION

To impart quality education in the field of Electrical & Electronics Engineering and to produce globally competent engineers to serve the society.

MISSION

- To educate the student to become better practicing engineers to meet global excellence.
- To provide better environment through latest developments in electrical engineering involving problem solving, design, practice and training.
- To motivate the graduates to become a good leader, designer and researcher through industry-

oriented trainings with social and ethical responsibilities.

The Department of Electrical and Electronics Engineering came into existence in the year 1992-1993 as a key entity of SRM Engineering College under the affiliation of University of Madras. Since then there has been a consistent development in all spheres including infrastructure facilities, staff development and student development. The programme offered by the department under the University of Madras were brought under the ambit of Anna University from the year 2002. From 2003-2004 the department started functioning under SRM Institute of Science and Technology (Deemed University). The department now offers B.Tech (Electrical and Electronics Engineering), M.Tech - Power Electronic and Drives, M.Tech - Power Systems and Ph.D program under the College of Engineering and Technology, SRMIST. The department has 14 laboratories with modern equipments supported by special purpose software packages like MATLAB, PSPICE, PSIM, PSCAD, ETAP, MAGNET, POWER WORLD SIMULATOR etc.

The B.Tech Electrical and Electronics Engineering programme of Kattankulathur Campus is accredited by the Engineering Accreditation Commission of ABET and National Board of Accreditation. It has over 70 faculty members whose areas of expertise and research include power electronics and power systems. The faculty members of the department have contributed to academics by publishing books, research articles in high-impact peerreviewed journals, presenting papers in conferences, delivering guest lectures and invited talks. The department has tie-ups with recognized institutions, industries and R&D laboratories for student projects, training and research activities. The department has been recently awarded with AICTE-CII award for best industry linked institute under category Electrical Engineering in 2019.

Chief Patrons

Dr. T. R. Paarivendhar, Chancellor SRMIST
Dr. Ravi Pachamoothoo
Pro - Chancellor (Administration), SRMIST
Dr. P. Sathyanarayanan
Pro - Chancellor (Academics), SRMIST
Dr. R. Shivakumar, Vice President, SRMIST
Dr. C. Muthamizhchelvan, Vice Chancellor, SRMIST
Dr. S. Ponnusamy, Registrar, SRMIST.

Convenor

Prof. K. Vijayakumar

Coordinators

Dr. K. Sateesh Kumar
Dr. S. Raghvendra

All Communications should be sent to

Dr. K. Sateesh Kumar, Asst. Prof, EED
Mobile : 9441274524
Email : kunchamk@srmist.edu.in

Resource persons

Dr. Kuncham Sateesh Kumar
Asst. Prof, EED, SRMIST
Dr. S. Raghavendra
Asst. Prof, EED, SRMIST
Dr. B. Phani Teja
Asst. Prof, EED, SRMIST
Dr. K.M. Ravi Eswar
Asst. Prof, EED, SRMIST