



**Knowledge Network of
Indian Institute of Technology Gandhinagar
TEQIP-III Initiative (MHRD, Govt. of India, NPIU & World Bank)**

Summer training program on Special Electrical Machines and Drives

Date: 15th-19th July 2019 (5-days)

Time: 9:30 am reporting time on 15th July 2019

Venue: IIT Gandhinagar, Palaj Campus, Gandhinagar

Target group: Electrical Engineering Faculty Members, PG students,
Senior (4th Year) UG Students

Register at: www.iitgn.ac.in/kn

Dead line: 01st July 2019

Few electrical machines require power electronic converters for their basic operation and are referred as special electrical machines. Their role in various applications like electrical vehicles, renewable energy, aircraft, etc is promising in the present time. This summer school provides an opportunity for the faculty members and students to revisit the important fundamental concepts of power electronics and its role in special electrical machines. Participation in this summer school is invited through registration.

Topics for discussion

Recap on conventional electrical machines – DC motor, induction motor and synchronous motor; Recap on power electronic converters.

Evolution of electronically commutated motors, Permanent Magnet (PM) materials - Rare-earth magnet and Ferrite magnet, Brushless DC motor and PM Synchronous motor, Square wave and Sine wave drives.

Switched reluctance motor – Steady-state performance, Power electronic converter, Modeling and control.

Synchronous reluctance motor – Torque production, Percentage of reluctance and reaction torque components, PM assisted reluctance motor.

Tentative schedule for this summer program

(a) Morning session: Lectures for 3 hours

(b) Afternoon session: Tutorial or lab session for 2 hours

Instructors: Prof. Ragavan K (IITGN), Prof. S. Rajendran (IITGN)