

FUTURE INSTITUTE OF ENGINEERING & MANAGEMENT

Department of Electrical Engineering

Power Electronics Laboratory

Description: The Power Electronics Laboratory is equipped with all types of Electronics Kits mainly covered in the B.Tech curriculum. Through hands-on experiments with real power electronics module, students gain practical experience by viewing various characteristic graph of different power electronics devices like V-I characteristic of SCR, TRIAC etc.

Major facilities/equipments : Power Electronics Kit, Software Simulation.

Faculty In-Charge : Mr.Avijit Saha, M.E., Assistant Professor

Technician : Mr Pijush Kumar Debnath, B.Tech.

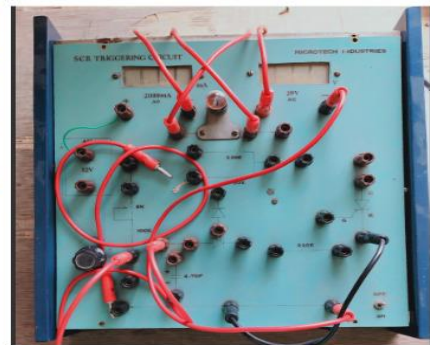
Area : 87.9 sq.m.

No. of experiments : 15

Courses conducted : Power Electronics Laboratory

Exclusive / Shared : Shared

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List of Major Equipment

Sl. No.	Major Equipments	Quantity
1	Converter firing trainer kit	1
2	Diac & Triac trainer kit	1
3	Triac trainer kit	1
4	Full control bridge converter trainer kit.	1
5	Digital multimeter	7
6	Full Control bridge Converter trainer kit.	2
7	Forced Commutation study unit.	1
8	Half Control bridge Converter trainer kit.	1
9	Oscilloscope	11
10	Digital Storage Oscilloscope	3
11	SCR trainer kit.	2
12	Step Down DC to DC Chopper trainer kit	1
13	Thyristor triggering trainer kit	2
14	UJT Triggering trainer kit.	1
15	IGBT based PWM Inverter	1
16	MOSFET/IGBT based chopper inverter unit	1

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List of Experiments as per Syllabus

Sl. No.	Name of the Experiment
1	Study of the characteristics of an SCR.
2	Study of the characteristics of a Triac.
3	Study of different triggering circuits of an SCR
4	Study of firing circuits suitable for triggering SCR in a single phase full controlled bridge.
5	Study of the operation of a single phase full controlled bridge converter with R and R-L load.
6	Study of performance of single phase half controlled symmetrical and asymmetrical bridge converters.
7	Study of performance of step down chopper with R and R-L load.
8	Study of performance of single phase controlled converter with and without source inductance (simulation).
9	Study of performance of step up and step down chopper with MOSFET, IGBT and GTO as switch (simulation).
10	Study of performance of single phase half controlled symmetrical and asymmetrical bridge converter (simulation).
11	Study of performance of three phase controlled converter with R & R-L load (simulation).
12	Study of performance of PWM bridge inverter using MOSFET as switch with R and R-L load.
13	Study of performance of three phase AC controller with R and R-L load (simulation)
14	Study of performance of a Dual converter. (simulation)
15	Study of performance of a Cycloconverter (simulation)

List of Experiments beyond the Syllabus

Sl. No.	Name of the Experiment
1	Study of different forced commutation circuit for Thyristor