## Name of the laboratory: POWER ELECTRONICS

### Objectives of the lab:

- Apply the concepts of power electronic converters for efficient conversion/ control of power from source to load
- Design the power converter with suitable switches meeting a specific load requirement.

**List of experiments**:

1. Study of characteristics of SCR,MOSFET,IGBT
2. Gate firing circuits for SCR's
3. Single Phase AC voltage Controller with R and RL loads
4. Single Phase half Controlled & fully controlled bridge converter with R and RL loads
5. Forced Commutation circuits (Class A, Class B, Class C, Class D& Class E)
6. Single Phase Cycloconveter with R and RL loads
7. Single Phase Series &Parallel inverter with R and RL loads
8. Single Phase Bridge inverter with R and RL loads
9. Dc Jones chopper with R and RL loads
10. Three Phase half controlled Bridge Converter with R load
11. Single Phase Dual Converter with RL loads
12. a) Simulation of Single -Phase Half wave converter using R and RL loads

    b) Simulation of Single -Phase full converter using R, RL and RLE loads

    c) Simulation of Single -Phase semi converter using R, RL and RLE loads

## LIST OF EQUIPMENT

| S.NO | DESCRIPTION |
|---|---|
| 1 | Study of characteristics of SCR,MOSFET & IGBT |
| 2 | Single phase AC voltage controller |
| 3 | Single phase fully controlled bridge converter |
| 4 | Forced commutation study circuit |
| 5 | DC Jones chopper |
| 6 | Single phase cyclo converter |
| 7 | Single phase half controlled bridge converter |
| 8 | Single phase series inverter |
| 9 | Single phase dual converter |

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| 10 | Boost Chopper |
| 11 | Single phase parallel inverter |
| 12 | 3 PH Half controlled bridge converter |
| 13 | Single bridge converter |
| 14 | CRO (Devi electronics) |
| 15 | CRO (Marketing center India) |
| 16 | Firing circuit |
| 17 | Firing circuit |
| 18 | Triggering circuit unit |
| 19 | Firing circuit |
| 20 | Rheostat 100 ohms/2Amps |
| 21 | Rheostat 150 Ohms/5Amps |
| 22 | Inductors 150mH/2Amps |
| 23 | Inductors 150mH/5Amps |
| 24 | Isolation transformer |

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| 25 | Centered Tapped transformer |
| 26 | Regulated power supply |
| 27 | Multi meters |
| 28 | ACER 18.5” LED Monitors |
| 29 | INTEL core 2 DUO processor, 2gb ram, keyboard, mouse |


POWER ELECTRONICS LAB