Research Area-1: Power System Computational Research Facility



- ➤ MATLAB
- Motorsolve
- **≻** ETAP

Research Area-2: Renewable Energy Research Lab



➤ Solar Array Simulator

➤ Wind Turbine Emulator



Research Area-3: Microgrid Operation and Control Research Lab



- > OPAL RT Windmill simulator
- > Mixed Signal Oscilloscope 8 Channel

> dSpace 1104



Research Area-4: Smart Grid Research Lab



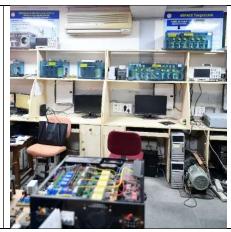
dSpace Microlabbox Digital Storage Oscilloscope

Research Area-5: Energy Conversion and Microgrid Research Lab



- ➤ PV simulator/ Programmable DC Power Supply Ametek TerraSAS ETS 600/8
- ➤ Bidirectional DC DC Converter TDK Lambda EZA 2500-32048
- ➤ DC Programmable Source (Delta 15kW Bidirectional Regenerative Programmable DC Power Supply; Model No.: SM 500-CP-90)
- ➤ DC Programmable Load (Chroma Make 2 kW Programmable DC Electronic Load; Model No.: 6320E-150-200)
- ➤ Enertech 5kW 3phase Inverter; Model No.: SOLAR PCU (Sunmagic +))
- ➤ dSpace-ACE KIT (Advanced Control Education Kit) 1104

- Programmable Grid Tie Source Link Bidirectional Power Supply
- Batsim Application Software For Battery Simulation Program
- Sas Control Application Software For Solar Array Simulation Software
- ➤ Matrix Convertor 25 Kva
- 9 Level Cascaded Invertor



Research Area-6: Project and Research Lab



- > PMSM drive
- ➤ IM drive
- > SCADA based drive control

- > PLC based drive control
- ➤ Three phase induction generators set up, DSO, Power Quality Analyser
- > Real Time mini FSS simulator



Research Area-7: Power Quality Lab



- ➤ dSPACE 1104
- Microlab box

- > PV simulator
- > Three Phase Programmable Supply



Research Area-8: Analog Signal Processing Research Lab



 Cadence Virtual Virtuso Software Tool

Research Area -9: Control of Dynamical Systems and Computation Lab



> Twin Rotor Motor Helicopter System

Cart Inverted Pendulum System



Research Area-10: Control and Automation Research Lab



> Two Degree Helicopter System

➤ Ball Plate System



Research Area-11: Embedded System and IOT Lab



 VxWorks Software developed by Wind River Systems

Research Area-12: Electric Vehicle and Intelligent Transportation System Lab



- ➤ Meshlium 4G Scanner
- ➤ Sidra intersection 9.0 Software
- ➤ Digital Storage Oscilloscope
- > Traffic Simulator and Controller

- > 14 Seater Electric Bus
- ➤ 3 Seater E-Rickshaw
- ➤ Three Port Battery Charger





- Research Area-13: Synchrophasor Lab

 Siemens PMU IED

 Opal RT Real Time Digital
 Simulator
 - Megger Relay Test Kit