B. V. V. Sangha's
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Department of Electrical and Electronics Engineering

INFRASTRUCTURE AND FACILTY

I. Major Equipments Available

Sl. No.	Major Equipments Available	Brief Specification	Quantity
1.	Wind Turbine Generator	3phase PMSG, Rated Output-1500W, 12 to 48 /60 - 140 LV/HV, rated wind speed-10.5 / 24 m/s, cut-in & cut-out wind speed 2.7 & 12 m/s respectively, Class "H", > 87%, 16 poles, 1 slot pitch, 375 RPM,3 blades-3.2 m rotor diameter, Carbon Fiber composite, ~ 0.37.	**1**
2.	Equipment for Light Laboratory	Anemometer Lux meter Light loads	**1**
3.	Inverters & instrumentation for wind-solar hybrid systems		**5**
4.	SCADA and distribution Automation Laboratory	Distribution SCADA Version 1.0 Control & Monitoring Software, IEC 61036, 3Ph LV Measurement, 60-100 A direct measurement from CT, harmonics upto 51 level, RS485 network, MySQL server, HMI Viewer & IFCU, Digital output-4 potential free contacts with programmable timed delay, Data logger-1MB/8MB, Demand Controller, Dual Port communication, PN8500	**1**
5.	Sound Level Meter	Sound level meter type: Bruel & Kjaer 2250-L Display: 240*320 dot matrix SD Card slot: uptp 32 giggabytes BZ-7226 Signal recording Option.	**1**

6.	Data Acquisition Cards	High performance multifunction I/O data acquisition, 16 channel remote data logger	**1**
7.	4-quadrant DC motor (Inverters, Chopper & Accessories)	1 HP, 220V, 1500 rpm 3- phase diode rectifier with brake chopper	**1**
8.	Performance Monitoring Unit for SPV Powered DC Pumps		**1**
9.	Grid tie Inverter with FCU, Installation and Configuration	Grid Tie Inverter for 1.5 kW Wind Turbine Generator: 1 phase in/1-phase out, rated output power 1500 W, MPP voltage Range 120 VDC~320 VDC, Nominal output volateg 220 VAC, power factor > 0.99, output waveform Pure sinewave, Efficiency(DC to DC) 90%. Bi-Directional Meter for existing FCU: connection type direct connected, wiring configuration 3-phase 4-wire, voltage range 230/240 V(P-N), 400/415 V(P-P, current range 5-10 A, Accuracy class 1.0, mains frequency 50 Hz ±5%.	**1**
10.	4-Phase SRM Motor, 4-phase IGBT based Inverter Stack	4-phase, 2.2KW, 3000 rpm, 8/6 SRM drive with asymmetric half bridge converter.	**1**
11.	Solar PV operated DC water pumps with accessories		**3**
12.	Automatic weather station	Weather station logger with weather proof enclosure, Air temperature and Relative humidity sensor, Rainfall sensor, Wind direction sensor, Wind speed sensor: at two same vertical heights, Solar radiation sensor, Application software CDData shuttle, Solar panel with mounting clamp, Batteries (SMF)	**2**
13.	Solar photo voltaic training kit[75 W, 150 W]	75 W SPV with display panel showing all parameters (voltage, Current, Power) online and compatible test loads.150 W SPV with display panel showing all parameters (voltage, Current, Power) online and compatible test loads.	**1**
14.	Wind turbine generator (Vertical axis) Training kit		**1**

II. Software's Available

Sl.No.	Name	Version	Type System/ Application
1.	Mi Power	MiPower V10.1 15 user license Graphical User Interfaces Load Flow Analysis-Power LFA Short-Circuit Study-Power SCS Transient Stability Study-Power TRS Relay Co-ordination-ORCD& DRCD Renewables, 3 Phase Load Flow Analysis, Economic Dispatch Harmonic analysis, Electromagnetic Transient Stability(EMT), Ground Grid Design, Dynamic Stability Analysis, Voltage Instability Analysis Load Forecasting, Sub Synchronous Resonance, MiPower Tools, Upgradation of existing MiPower licenses (5 Users) to latest version	15 users
2.	Software Package for wind data analysis	Origin software	01 user

- Currently Working Only