Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Lab Deployment

Name of Faculty: Mr Rajkumar Soni	Subject Code: 8EE4-21
Subject Name: Energy Systems Lab	SEM: VIII
Department: Department of Electrical Engineering	
Total No. of Labs Planned: 12	

COURSE OUTCOMES

At the end of this course students will be able to:

CO1:To teach the fundamentals of Energy systems.

CO2: To clarify Experiment of solar Charge controller, PWM, MPPT with boost converter and algorithms.

CO3: To make the Student understand study of wind turbine generators with DC generators, DFIG, PMSG etc.

CO4: To design and simulate hybrid wind-solar power generation system using simulation software.

Labs No.	Name of Experiment
1	V-I characteristics of solar panels at various levels of insolation.

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पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)

2	Experiment of solar Charge controller, PWM, MPPT with boost converter and algorithms.
3	Experiment on Shadowing effect and diode based solution in1kWpSolar PV System.
4	Study of wind turbine generators with DC generators, DFIG, PMSG etc.
5	Performance Study of Solar Flat Plate Thermal Collector Operation with Variation in Mass Flow Rate and Level of Radiation.
6	Characterization of Various PV Modules Using large area Sun Simulator.
7	Study of micro-hydel pumped storage system.
8	Study different components of Micro Grid.
9	Study of 100 kW or higher solar PV plant.
10	To design and simulate hybrid wind-solar power generation system using simulation software.
11	Experiment on Performance Assessment of Hybrid (Solar-Wind- Battery) Power System.
12	Simulation study on Intelligent Controllers for on-grid and off-grid Hybrid Power Systems.

TEXT/REFERENCE BOOKS

1. Kankar Bhattacharya, Math H.J. Boller, JaapE. Daalder, 'Operation of Restructured Power System' Klumer Academic Publisher – 2001.

2. Mohammad Shahidehpour, and Muwaffaqalomoush, - "Restructured electrical Power systems" Marcel Dekker, Inc. 2001.

3. Loi Lei Lai; "Power system Restructuring and Deregulation", John Wiley & Sons Ltd., England.