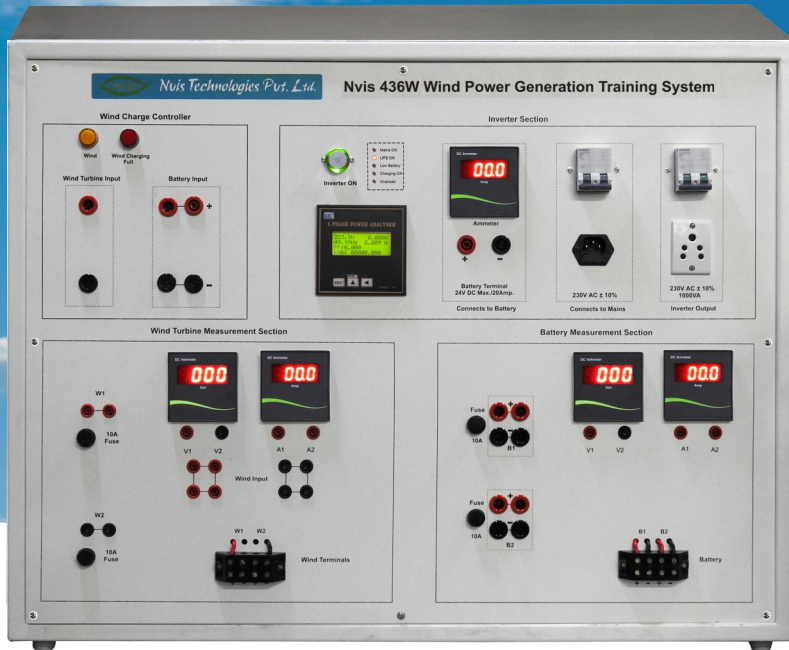




# Wind Power Generation Training System

## Nvis 436W



Wind Power is the energy obtained from the wind. It is one of the oldest exploited energy sources by humans and today is the second most seasoned and efficient energy of all renewable energies. Wind power is the most efficient technology to produce energy in a safe and environmentally sustainable manner: it is zero emissions, non pollutant, inexhaustible and contributes to sustainable development. Wind energy does not emit toxic substances or contaminants into the air, which can be very damaging to the environment and to human beings.

Wind power consists of converting the energy produced by the movement of wind turbine blades driven by the wind into electrical energy. Considering this, we have designed product which justify the significance of wind energy by study its operational working and how it converts electrical energy from the wind. We have tried to make the product as easiest as possible so that expertise can easily grasp the fundamentals of wind turbine. It includes inbuilt Inverter which can be operated in both mains and through batteries.

### Features

- A unique system for Electrical Generation through Wind Energy and its learning.
- Equipped with Wind Charge Controller with overload and low battery protection
- Diagrammatic representation of different blocks of board.
- Designed by considering all the safety measures
- Special design patch cords for additional safety
- Highly accurate microcontroller based measuring instruments.
- Equipped with multifunction meter to analyse output capacity
- System is flexible to operate in mains as well as UPS mode
- Provided with 40AH Battery

### Scope of Learning

- To study wind power generation system



### Technical Specifications

#### Wind Turbine

|                     |   |  |
|---------------------|---|--|
| Wind Turbine        | : | 300 watt( Design specification)                      |
| Charging Current    | : | 0.3 - 0.4A   |
| Generator voltage   | : | 24V approx.  |
| Actual Output Power | : | 10W - 15W  |
| Blades              | : | 3nos.  |
| Rotor               | : | Three FRP blades along with standard steel nut-bolts |
| Structure           | : | 5ft, with floor stand                                |

#### Wind charge controller

|            |   |                                     |
|------------|---|-------------------------------------|
| Voltage    | : | 24V                                 |
| Protection | : | Overload and low-battery protection |

#### Storage battery (2nos)

|          |   |      |
|----------|---|------|
| Capacity | : | 40AH |
|----------|---|------|

#### Inverter

|                         |   |                                    |
|-------------------------|---|------------------------------------|
| Capacity                | : | 750VA                              |
| Input voltage           | : | 190~260V                           |
| AC output voltage       | : | Same as input (mains mode)         |
| Output voltage          | : | 210~245V (Inverter Inverter)       |
| Output frequency        | : | 50Hz $\pm$ 0.1Hz (Inverter mode)   |
| Output waveform         | : | Modified Sine wave (Inverter mode) |
| Efficiency at full load | : | >80%                               |
| Technology              | : | Microcontroller based design       |

#### Digital meters

|                         |   |                  |
|-------------------------|---|------------------|
| AC voltmeter            | : | 500V             |
| AC ammeter              | : | 10A              |
| DC voltmeter            | : | 300V             |
| DC ammeter              | : | 20A              |
| AC Multi Function Meter | : | Voltage-10-230V  |
|                         | : | Current-100mA-5A |
|                         | : | Watt-10-1200W    |
|                         | : | Frequency-50Hz   |

|                  |   |                              |
|------------------|---|------------------------------|
| <b>Terminals</b> | : | BS10 type for safety purpose |
|------------------|---|------------------------------|

|                             |   |   |
|-----------------------------|---|---|
| <b>Optional accessories</b> | : | AC/DC Load, Blower for wind turbine (Nvis BI01) |
|-----------------------------|---|---|