

## SpectraQuest Introduces the Wind Turbine Simulator (WTS)

- *A perfect platform for teaching the fundamental principles – from power generation to operation & maintenance*
- *An Ideal Apparatus for Wind Turbine reliability studies*
- *Fully integrated system with blade pitch and yaw control, Sensors, Data Acquisition and Analysis Software*
- *Planetary and parallel shaft gearbox, wind speed/direction sensors, monitoring/control console, and power measurement system*
- *Advanced Signal Processing Algorithms*
- *Robust, modular, and easy to configure for a variety of experimentation*
- *Can be operated with and without wind such as laboratory settings*
- *Complete system consisting of a nacelle, turbine hub, three independently actuated blades, a vertical tower, wind speed/direction sensors, and a control console*



**Press Release, May 19, 2010, Richmond, VA**

SpectraQuest introduces a full featured Wind Turbine Simulator (WTS) for education in wind turbine technology from power generation to operation. The device provides an ideal platform for teaching the fundamental principles of wind energy conversion to electricity, energy storage, control system, instrumentation, operation, and maintenance of a wind turbine. The innovative design allows for the WTS to be used with and without the presence of wind such as in laboratory settings. This integrated package includes a hands-on experimentation device, curriculum, sensors and data acquisition and software along with a full set of instrumentation to expedite learning. The system consists of three independently actuated blades with ability to control the pitch, a 360 degree turning yaw control mechanism, a nacelle, a turbine hub, a vertical tower, and complete control system.

The WTS is robust and versatile designed for a variety of applications to optimize benefits on your investment. It can be used to demonstrate several concepts and perform different experiments related to electric power generation from wind energy. The system gives a hands-on experience to students and can be integrated with a standard curriculum. It comes with a training book to assist with exercises and learning. Sensors for wind speed and direction are provided so that the nacelle yaw and the pitch angles of each blade can be altered to optimize



the power. The unit can be operated with and without wind. The unit is equipped to install several dc generators and the power produced by them can be combined. An inverter is used to generate AC power. WTS is also a perfect tool for assembly and maintenance procedures in a controlled environment.

### ***About SpectraQuest***

SpectraQuest, Inc. is dedicated to providing state-of-the-art systems for enhancing product reliability and quality assurance. The company develops and manufactures training, diagnostics, and prognostics systems for industrial maintenance and vibration analysis. SpectraQuest's complete product line is ideal for the study of balancing, alignment, resonance, rotor dynamics, pump, compressor, bearing, gearbox, drivetrain, and motor defects. The flagship Machinery Fault Simulator has been sold in over 40 countries to the leading universities, research and development institutions, and engineering/maintenance departments of a wide spectrum of corporations. Further information is available at [www.spectraquest.com](http://www.spectraquest.com).

### ***Contact info:***

*SpectraQuest Inc.  
8201 Hermitage Road,  
Richmond, VA 23228  
<http://www.spectraquest.com>  
Tel: 804-261-3300 Fax: 804-261-3303  
Email: [info@spectraquest.com](mailto:info@spectraquest.com)*