



West Texas A&M  
University™



### **Anitha Subburaj, Ph.D.**

Assistant Professor of  
Electrical Engineering

#### **Research Areas and Expertise**

Renewable Energy  
Control Systems  
Battery Energy Storage Systems  
Battery Connected to Grid  
Applications

#### **Contact**

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## **Electrical Engineering**

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#### **Wind Turbine Research Interest**

Dr. Subburaj has her research focus on modeling the battery, grid integration with wind turbines, and economics analysis of the battery. Her research is also to understand the interactions of a battery and wind turbines tied to the grid. The research results led to the deployment of more battery energy storage systems on the grid, which, in turn, allows the high penetration of wind plants on the grid network. She conducted research to improve the battery model and its controls to respond to the wind intermittency and grid fluctuations, developed the system with battery connected to a wind farm, and observed the response of the system as function of strength of the grid.

The performance of the battery and analysis of the battery system tied to the distribution grid with heavy penetration of wind as a function of the strength of the grid holds great promise for creating higher efficiencies and greater reliability in electrical engineering. The challenges have become infinitely more acute and complex when understanding the optimization of the energy flow between the battery, the wind farm and the distribution grid at West Texas. Her research interests include observation of harmonics and sub synchronous control interaction of the battery with wind connected grid system, development of the economics algorithm with the online battery and wind data to obtain the optimal solution for the power flow management, performance comparison of operations of a synchronous, and DFIG wind turbines when connected to battery-grid system as function of strong/weak grid.

#### **Professional Profile**

Dr. Subburaj received her M.E. in Applied Electronics in 2007 from Anna University in India and her Ph.D. in Electrical Engineering at Texas Tech University in 2014. She was a post-doctoral research associate at Texas Tech University before coming to WTAMU. Dr. Subburaj teaches electrical circuits, control systems, signals & systems, and programming fundamentals. Dr. Subburaj is a Senior Member of the IEEE society.

#### **Academic Research**

Dr. Subburaj's research interests include renewable energy, control systems, battery energy storage system, and battery connected to grid applications.

#### **Education**

- M.E. in Applied Electronics, Anna University, India, 2007
- Ph.D. in Electrical Engineering, Texas Tech University, 2014

#### **Publications**

Dr. Subburaj has several publications in Elsevier's Journal on Renewable & Sustainable Energy Review, IEEE Transactions on Industry Applications and International Journal of Renewable Energy Research.

