Department of Electrical and Computer Engineering

TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College *of* Engineering™

Fall 2023 Seminar Series

Seminar Title: ***Research on Grid Battery Energy Storage at Sandia National Laboratories***

Time: 2:00-2:50 PM, Friday, Oct. 13, 2023
Location: Biology 101

Speaker:
Rodrigo Trevizan
Sandia National Laboratories

Abstract:
Sandia Grid Energy Storage Program dates back to 1989 with the launch of the DOE Utility Battery Program and the first MWh grid-tied battery demonstration project. We have continued to be a leading laboratory in grid energy storage ever since. We have a comprehensive R&D that focuses on solving critical problems to make energy storage safe, reliable, and cost effective across all markets. In this presentation, I will cover select topics of Sandia Grid Energy Storage program research portfolio, including: cyberphysical security of energy storage systems; control and optimization of grid energy storage systems; valuation of energy storage system projects; energy storage predictive maintenance; lifetime prediction of fielded systems based on laboratory testing results; machine learning for battery lifetime prediction/transferability of models across different cells; analytics and controls for integration of utility-class storage systems; improved BMS, EMS systems; and modular power electronics for hybrid battery energy storage systems.

Speaker Bio:
Dr. Rodrigo Trevizan is a research and development electrical engineer at Sandia National Laboratories. Rodrigo received a B.S. and M.Sc. degree in Electrical Engineering from the Federal University of Rio Grande do Sul, Brazil, in 2012 and 2014, respectively, a B.Sc. in Power Systems Engineering from the Grenoble Institute of Technology (ENSE3) in 2011 and a Ph.D in Electrical Engineering from the University of Florida in 2018. Rodrigo authored research papers on the subjects of cyberphysical security of battery energy storage systems, valuation of energy storage systems, control of energy storage systems and demand response for power grid stabilization, power system state estimation, and detection of nontechnical losses in power distribution systems. His current research interests are cyberphysical security, state estimation, control, and valuation of energy storage systems.