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**ELECTRICAL & COMPUTER  
ENGINEERING**  
TEXAS A & M UNIVERSITY

## SEMINAR

**Room 1035 ETB**

September 18, 2017, 1:50 – 2:50 P.M.

### **Power Electronics for Advanced Battery Management**

by

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**Abstract:** Electrochemical energy storage is critical for a range of applications spanning electrified transportation and grid energy storage, and there is a need to further improve both the active management and diagnostic capability of current battery management systems. Lithium-based battery chemistries have been favored for their high energy and power densities but require precise management to prevent premature degradation and failure. This seminar presents an efficient power converter topologies, instrumentation, and an embedded controls that can provide both active balancing and real-time diagnostic capability through electrochemical impedance spectroscopy (EIS). Cell-level diagnostics allow for noninvasive measurement of physical electrochemical battery properties that can be used to assess the state of charge and health of a battery.

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**Christopher Schaeff** received the B.S degree in 2010 and the M.S. degree in 2011 in Industrial Engineering both from Helmut-Schmidt University in Hamburg, Germany. He received his Ph.D. degree from Dartmouth College, Hanover, NH in 2016 where he worked on integrated power management for renewable energies, battery management and point-of-load power delivery. Currently, he is a Power Delivery Researcher in the Circuits Research Laboratory at Intel Corporation working on highly integrated dc-dc power conversion.