Electrical Storage Systems

This 8-hour self-paced seminar on DVD, covers electrical energy storage systems for automotive traction applications. Modeling is discussed from first principles to concepts of estimation and system identification using real data. The seminar is offered as a seminar option in the Advanced Propulsion certificate & the Powertrain certificate programs.

Several case studies are provided, including techniques for modeling complicated behavior for NiMH batteries over complete ranges of charge and discharge, with inclusion of temperature dependence.

Lectures will cover the following topics:

• Overview of battery & supercapacitor technology
• Comparative analysis of energy storage types
• Battery electrical and thermal characteristics and modeling
• State of charge estimation
• Aging diagnosis and prognosis
• Battery management systems and controller
• Power distribution units and architecture and fault diagnosis

Prerequisite: Basic undergraduate understanding in electrical systems, thermodynamics, and automotive systems.

Ohio State University’s automotive engineering certificates include international collaboration with European partners, Swiss Federal Institute, ETH, and University of Stuttgart, as well as with Asian partner, Korean Advanced Institute of Science and Technology.

For details on OSU automotive engineering certificates, visit our web site listed below.

Center for Automotive Research, The Ohio State University
930 Kinnear Rd., Room 118, Columbus, Ohio 43212
614-688-8574 ♦ englearn.osu.edu