UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

DIPARTIMENTO DI INGEGNERIA INDUSTRIALE

Dottorato di Ricerca in "Ingegneria Industriale"

DII Seminar Series

Energy storage systems for future mobility, from electrochemistry to system integration

Giorgio Rizzoni

The Ford Motor Company Chair in Electromechanical Systems,
Professor Mechanical and Aerospace and of Electrical and Computer Engineering
Director, Center for Automotive Research (CAR)

November 13 | 9: 30 – 17: 00 | Aula Magna – Leopoldo Massimilla

Seminar Description

Electrochemical energy storage systems are a key element of powertrain electrification for mobility. In this seminar, we present a broad overview of the physico-chemical characteristics of modern batteries, with focus on lithium chemistries, and then proceed to explain the development of battery systems, which require the electrical, mechanical and thermal integration of multiple cells, and their management and control. Topics related to safety and aging of batteries are also discussed. The seminar includes the presentation of some case studies, including the design and realization of a 2 MW battery pack for the Venturi Buckeye Bullet, the fastest electric vehicle in the world, holder of the FIA world land speed record at over 340 mi/h.

Giorgio Rizzoni, the Ford Motor Company Chair in Electro-Mechanical Systems, is a Professor of Mechanical and Aerospace Engineering and of Electrical and Computer Engineering at The Ohio State University (OSU). He received his B.S. (ECE) in 1980, his M.S. (ECE) in 1982, his Ph.D. (ECE) in 1986, all from the University of Michigan. Since 1999 he has been the director of the Ohio State University Center for Automotive Research (CAR), an interdisciplinary university research center in the OSU College of Engineering. His research activities are related to modeling, control and diagnosis of advanced propulsion systems, vehicle fault diagnosis and prognosis, electrified powertrains and energy storage systems, vehicle safety and intelligence, and sustainable mobility. He has contributed to the development of graduate curricula in these areas and served as the director of three U.S. Department of Energy Graduate Automotive Technology Education Centers of Excellence: Hybrid Drivetrains and Control Systems (1998-2004), Advanced Propulsion Systems (2005-2011, and Energy Efficient Vehicles for Sustainable Mobility (2011-2016). Between 2011 and 2016 he served as the OSU Site Director for the U.S. Department of Energy China-USA Clean Energy Research Center - Clean Vehicles. He is currently leading an ARPA-E project in the NEXTCAR program. Prof. Rizzoni is a Fellow of SAE (2005), a Fellow of IEEE (2004), a recipient of the 1991 National

Registrazione obbligatoria: Ing. Emma Frosina
Emma.frosina@unina.it

THE OHIO STATE UNIVERSITY
CENTER FOR AUTOMOTIVE RESEARCH

Center for Automotive Research
College of Engineering
930 Kinnear Road
Columbus, OH 43212
https://car.osu.edu