Dr. Prajof Prabhakaran

The topic of presentation: Electric Vehicles Powertrain and Battery Management System – A Case Study

Abstract:

In this tutorial, a systematic approach to design and select EV powertrain components (which includes battery, inverter, motor, and on-board charger) will be discussed. Some of the commonly used powertrain configurations and power converter topologies shall be highlighted. Control methodologies and challenges associated with EV powertrain shall be presented. Some of the practical difficulties, architectures, and essential functionalities of BMS (like cell balancing, state of charge estimation, insulation measurement, etc.) shall be discussed. Finally, the tutorial shall conclude by highlighting the research scope and challenges associated with EV powertrain and BMS.

Biography:

Prajof Prabhakaran received the B.Tech. degree in Electrical & Electronics Engineering from Amrita Vishwa Vidyapeetham (Amrita University), Coimbatore, in 2009, followed by the M.Tech. degree in Power Electronics from the same university,

in 2011. He received the Ph.D. degree in Electrical Engineering from the Indian Institute of Technology Bombay, Mumbai, in 2018. His doctoral research was focused on DC microgrids, and he has published three IEEE transactions and five IEEE international conferences from his research work.

Currently, he is working as Assistant Professor in the Department of Electrical and Electronics Engineering, National Institute of Technology Karnataka, Surathkal. He mainly works in the field of power electronics with focus on renewable energy source-based systems, microgrids, and electric vehicles. Dr. Prajof is a reviewer for IEEE Transactions on Power Electronics, Industrial Electronics, Smart Grid and Industrial Applications.