DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Power Converters for Microgrids and Electric Vehicles

Energy Storage Power Converters

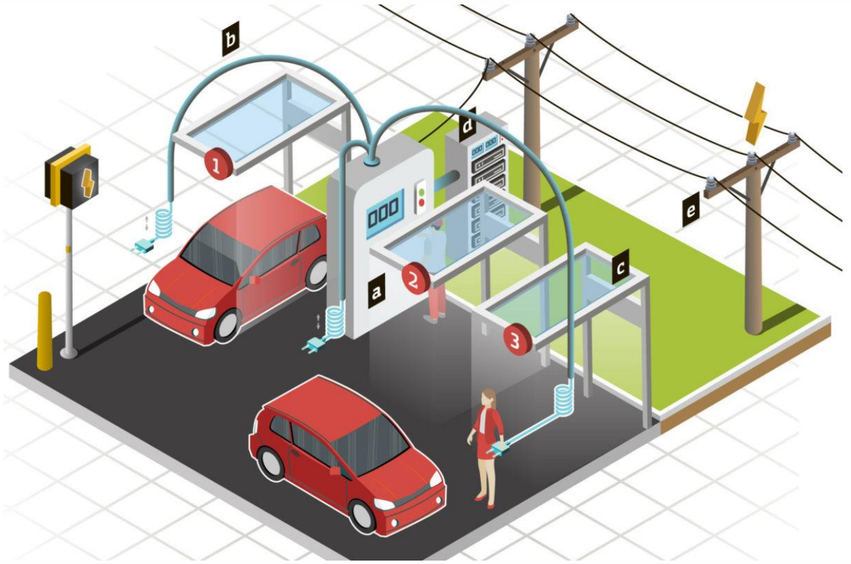
- Innovative converter topologies for improved integration of energy storage in grids and microgrids
- Advanced modeling techniques

Microgrid Stability Analysis

- Microgrids have limited resources, so they are fragile
- New modeling and analysis methods using stochastic hybrid systems framework

Extreme Fast Charging of Electric Vehicles

- Charge an EV as fast as filling a gas tank—requires new power conversion approaches, new energy storage systems, and grid support algorithms



Conceptual extreme fast charging station to charge an electric vehicle in under 10 minutes.

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Keywords

- #PowerElectronics, #Microgrids, #Solar, #XFC, #EnergyStorage

Recognitions

- Awards: Faculty Excellence Award, February 2015; Faculty Research Award, December 2018
- General chair, IEEE Applied Power Electronics Conference 2017, www.apec-conf.org
- Dean's Scholar of the College of Engineering and Computing, AY17-18

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