Talk information

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Title of the talk:

Energy Efficiency Optimized Energy Management Strategy for Fuel Cell Hybrid Microgrid System

Abstract:

This research proposed a three-level efficiency optimized EMS based on the improved Q-learning algorithm to optimize the energy efficiency of the fuel cell microgrid system. The overall efficiency model of the fuel cell microgrid system was built first. Then a dual reward function based on system charging mode and discharging mode was designed. A three-level EMS was designed finally to optimize the overall efficiency of the system. Both the Hardware-in-the-Loop tests and vehicle driving tests were designed to validate that the proposed dual reward Q-learning based EMS can effectively improve the system energy utilization rate and slow down the aging of fuel cell.

Bio:

Dr. Yuxiang Zhang received his Ph.D. degree in control science and engineering from Northwestern Polytechnical University (NPU), Xi an, China, 2023. He has been appointed as a Postdoctoral Researcher at the Tecnun School of Engineering, University of Navarra, Spain. His main research interests include renewable energy technologies, energy management strategies for hybrid power supply system, and microgrids.