



UI-ASSIST STUDENT WEBINAR SERIES

Wednesday, 11th November, 2020, Virtual Meeting

Time: 8:00 pm (IST) / 9:30 am (EST)

“DC Bus Voltage Regulation and Droop Control of Parallel Inverters in an Islanded Hybrid Microgrid”

**Presenter: Mr. Pruthvi Chaithanya Nakka, PhD Scholar
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About the Presenter: Pruthvi Chaithanya Nakka received the Bachelor's degree in Electrical and Electronics Engineering from the Jawaharlal Nehru Technological University, Hyderabad, India, in 2012 and the Master's degree in Power Electronics and Drives from the National Institute of Technology, Rourkela, India, in 2015. He is currently working towards the Ph.D. degree in Electrical Engineering at the Indian Institute of Technology Madras, Chennai, India. His research interests include power electronic converter applications in ac/dc microgrid and energy-storage systems.

Abstract: Depletion of primary reserves, lower per unit cost of the wind and photovoltaic (PV) systems, necessity of rural electrification and subsidies given by the governments are driving the world to utilize renewable energy sources (RESs). Small scale generating units like RESs, diesel generators along with the distributed loads form a microgrid, which can be operated in an islanded mode or grid connected mode. In this webinar, design and control of bidirectional DC-DC converter, decentralized control of voltage source inverter in an islanded hybrid microgrid application will be presented. A proportionate power sharing among the parallel inverters operating in an islanded hybrid microgrid is achieved using droop control. The frequency changes arising due to the droop characteristics are used to regulate the DC bus voltage using battery and supercapacitor-based hybrid energy storage system.