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Professor Kamal Al-Haddad

Department of Electrical Engineering École de technologie supérieure



Abstract

Title: New Challenge in Power Electronics for Electric Energy Supply

The constant growth of electric energy demand is pushing to the critical operation limit of the existing electric grid. The presentation will focus on the new challenges to ensure a safe and reliable electric energy supply in the coming era of high electrification and high percentage of intermittent renewable energy supply injected into the grid. Environmentally friendly design of the power stages will be highlighted with the focus on the power electronics converters that are called to play a major role in adapting and controlling the flow of energy between different sources, energy storage components and the loads. Moreover, the quality of power as well as decoupling the growing number of microgrids in order to be controlled efficiently as to ensure stable and reliable energy supply.