



YEDITEPE UNIVERSITY
Faculty of Engineering
Electrical and Electronics Engineering Seminars

Development of Efficient Power Electronics Converters for Photovoltaic Systems and Grid Voltage Regulation

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Abstract: Power electronics converters are key components for interface of renewable energy sources, storage devices, loads and utility grid with different voltage profiles (amplitude and/or frequency), and to process and convert electric power in any desired form. In this talk, I would discuss my research experience of developing new efficient power electronics converter systems for applications in hybrid electric vehicles, photovoltaic inverter system, power supplies for commercial appliances, and grid power quality improvements.

The growing amount of photovoltaic power generation, its wide voltage/power variations, dependence on environmental conditions, and penetration to utility grid have created significant opportunities for development of new power electronics converters for photovoltaic systems and grid voltage regulation. The talk would also include the limitations of existing power electronics converter for photovoltaic systems and grid voltage regulation, and my current contributions and future plans for development of new highly efficient power electronics converters for these applications.

Biography: Dr. Hafiz Furqan Ahmed received his B.E. (with Hons.) degree in Electronics Engineering from National University of Sciences and Technology (NUST), Islamabad, Pakistan, in 2012, and M.S. combined Ph.D. degree in Energy Engineering (Majoring in Power Electronics) from Kyungpook National University, Korea in 2017. He is currently working as a postdoctoral research fellow in Khalifa University, UAE. He has also worked as Assistant Professor for two semesters at NFC-Institute of Engineering and Technology, Pakistan, in 2018. His current research interests include development of new efficient power electronics converters for grid-integration of photovoltaics and grid power quality improvement. He has published 16 IEEE Transaction papers, one IET Journal paper, and 16 Intl. peer reviewed conference papers. He received best paper award in IEEE ECCE-ASIA, 2015, and best research contribution awards from BK-21 in 2015. He also received scholarships and awards from NICT R&D Fund Pakistan, NUST and Kyungpook National University.

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