Prof. Drazen Dujic
Power Electronics Laboratory
Ecole polytechnique fédérale de Lausanne
EPFL STI IEL PEL
ELH 111, Station 11
CH-1015, Lausanne, Switzerland

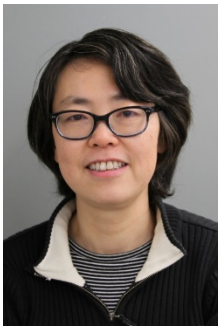
Tel: +41 21 693 3656
Fax: + 41 21 693 2600
E-mail: drazen.dujic@epfl.ch
Web: http://epfl.ch/labs/pel

SiC Power Electronics for Grid and Transportation Applications

Speaker: Prof. Hui "Helen" Li, Florida State University

Abstract: Power electronics is one of the key enabling technologies to achieve the goals of "Zero-Emission" transportation and high penetration renewables in the power grid. The wide bandgap (WBG) devices, and in particular SiC MOSFET devices, are transforming medium-voltage (MV) power conversion and control, presenting significant research opportunities. For example, the application of SiC devices can reduce or eliminate the need for interface harmonics filter in grid-tied inverters, however, leads to control challenges and worsens EMI. The SiC motor drives, while achieving higher efficiency and power density, can result in more serious reflective wave phenomena leading to machine insulation failure. Additionally, driving SiC devices, especially MV SiC devices, remains a challenge. In this presentation, the speaker will introduce her group's research work to address these challenges in the last decade using different approaches compared to state-of-the-art methods. An overview of the Center for Advanced Power System at Florida State University will also be introduced in this presentation.

Biography:



Dr. Hui "Helen" Li received her Ph.D. degree from the University of Tennessee, Knoxville, TN, USA, in 2000. From 1999 to 2000, she worked at Power Electronics and Electric Machinery Research Center of Oak Ridge National Laboratory. Currently she is a professor of Electrical and Computer Engineering Department and leads power electronics research at Center for Advanced Power Systems (CAPS), Florida State University. Her research interests include solid-state transformers, multilevel converters, and WBG power electronics for transportation and grid applications. She is co-editor-in-chief of IEEE Transaction on Power Electronics from 2019-2021. She is a PELS Distinguished Lecturer of 2018-2019 and 2020-2021. She is the elected member at large of Administrative Committee of PELS from 2011-2013, 2015-2017, 2018-2020. She is a Fellow of the IEEE.

The lecture is open to the public. The event takes place within the scope of the Swiss Chapter of IEEE Power Electronics Society, https://pels.ieee.ch