CALL FOR PAPERS

Special Session on "Application of Power Electronic Converters in Decarbonized Power System"

The 2023 IEEE Green Technologies conference will be held on 19-21 April 2021, in Denver, Colorado, USA, and is Sponsored by IEEE PES, IEEE PELS, IEEE IAS, and IEEE RS.IEEE Denver Section, and IEEE Region 5.

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SPECIAL SESSION DESCRIPTION (no more than 150 words)

Modern power electronic converters have an unprecedented impact on our world's decarbonizations, especially in the electricity sector. The applications of these devices range from large scales, such as renewable energies (photovoltaic panels, fuel cells, wind turbines, batteries), electric vehicles, and power transmission, to small scales like piezoelectrics. There are two ways to improve these converters. Firstly, try to invent high-tech components to decrease size and losses. A cluster of these high-tech products is renowned as Wide Band Gap power semiconductors, such as GaN and SiC, which have become popular because of their high efficiency, low losses, high power density, and performance at high temperatures. Secondly, designing new topologies, mathematical analysis, and control strategies are improving continuously. Today, various methods are proposed to control power electronic converters, which are more accurate and reliable. Increasingly stringent Net-Zero requirements have increased the role of power electronic converters, resulting in ever more significant decarbonization.

TOPICS COVERED (no more than 5)

- Designing power electronic converters (DC/DC, DC/AC, AC/AC, and AC/DC) for smart grid (decarbonized power system) applications.
- Application of power electronic converters in harsh environments to decrease carbon emissions (obtaining decarbonized power network).
- Application of the power electronic converters (Electric vehicles, switching converters, data centers, traction inverters, piezoelectric and …)
- Control of power electronic converters (MPC, SMC, and …) in renewable energy-

dominated smart grid

- Control of grid-forming power electronic converters in renewable energy-dominated scenarios

Schedule:

Deadline for submission of the paper (s) by selecting the desired special session- November 13, 2022

Notification of acceptance –February 1, 2023

Deadline for submission of final manuscripts- March 1, 2023