

CALL FOR PAPERS

Special Session on “**Advances in Power Conversion Technologies for Net Zero Energy Buildings**”

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, IEEE RS.IEEE Denver Section, and IEEE Region 5.

Special Session ORGANIZED AND CHAIRED by

Dr. Muhammad Khalid (King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia)

mkhalid@kfupm.edu.sa

Dr. Mohammad Ali (King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia)

mohammad.ali@kfupm.edu.sa

Dr. Atif Iqbal (Qatar University, Qatar)

Atif.iqbal@qu.edu.qa

SPECIAL SESSION DESCRIPTION (no more than 150 words)

Power electronics (PE) and its process of power conversion are the driving factors towards renewable energy (RE) integration. The global efforts to achieve net zero carbon emission by 2050 initiated industrious attention toward utilizing RE for electric power generation. The viability of RE integration at each voltage level brings potential opportunities and challenges that will redefine the existent electric power grid, enabling customers to upgrade to renewable-based prosumers. Seemingly, more than 50% of the energy consumption in buildings is in the form of electrical energy with a high prospect of steady increment in conjunction to each newly introduced loads, such as electric vehicles. To maintain clean energy, commercial and residential buildings are targeted for transformation to net-zero energy buildings (NZEB) with the help of localized power generation from RE and energy storage systems. Therefore, resilient PE conversion efficacy and control will enable grid-coordinated and effective utilization of RE sources.

TOPICS COVERED (no more than 5)

- Advancement in DC-DC and DC-AC converter technology for NZEBs
- Use of wide-bandgap devices-based power electronic converters
- Power conversion in energy storage systems
- Application of AI in NZEB power conversion systems
- Energy management for NZEB

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