CALL FOR PAPERS

Special Session on Impedance Source Converter Topologies and Applications

IECON 2018 – The 44th Annual Conference of the IEEE Industrial Electronics Society
October 21-23, 2018, Washington D.C, USA

TOPIC OF THE SPECIAL SESSION
Impedance Source Converter Topologies and Applications

Outline of the session
Research in the field of Impedance Source Converters was initiated in 2002 by the invention of the Z-Source inverter. Z-Source inverters are able to provide buck-boost functionality by the single switching stage and improved reliability due to the inherent short-circuit immunity. These advantages urge active research in the field of Impedance Source Inverters. The impedance source technology was applied to all four basic converter types: DC-AC, DC-DC, AC-AC, and AC-DC. Impedance source converters are applied in a very broad area: from modern energy generation systems (renewable and alternative) to DC circuit breakers and electronic loads. To promote further research and development of impedance source converters and to provide a common environment for presentation and discussion on their emerging research, development, and applications, we propose a special session on the impedance source converter topologies and their applications.

Topics of interest include, but are not limited, to the following:

- *New topologies of impedance source networks*
- *Multilevel and multiphase impedance source converters*
- *Impedance source DC-DC converters*
- *Impedance source DC-AC, AC-DC converters*
- *Impedance source matrix converters*
- *Control strategies of impedance source converters*
- *Design considerations for power and control stages*
- *Loss analysis and losses minimization methods*
- *Reliability issues*
- *Review and challenges on impedance source converters*
- *Applications of impedance source converters in electric drives*
- *Applications of impedance source converters in renewable energy and grid connected systems, such as in:*
  - *a. Photovoltaic systems*
  - *b. Fuel cell systems*
  - *c. Wind turbine systems*
  - *d. Energy storage systems*
  - *e. Hybrid systems*

IEEE IES Technical Committee Sponsoring the Special Session:
Power Electronics Technical Committee, Inverters/Rectifiers subcommittee, Impedance Source Converters subcommittee, Electric Machines and Drives subcommittee

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Author's schedule:

- Deadline for submission of special session papers: **May1, 2018**
- Notification of acceptance: **July 15, 2018**
- Deadline for submission of final manuscripts: **August 1, 2018**