THE 28TH IEEE INTERNATIONAL SYMPOSIUM ON INDUSTRIAL ELECTRONICS IEEE-ISIE 2019

12-15 JUNE 2019, VANCOUVER, CANADA

Special Session on

"Advanced Multilevel Converters with DC Capacitors: Topology, Modulation, Voltage Balancing, and Control Strategies"

Organized by

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Prof. Al-Haddad *is with the Electrical Engineering Department, École de Technologie Supérieure, Montreal, Canada, where he has been the holder of the Canada Research Chair in Electric Energy Conversion and Power Electronics since 2002. His fields of interest are in high efficient static power converters, harmonics and reactive power control using hybrid filters, switch mode and resonant converters including the modelling, control, and development of prototypes for various industrial applications.*

Accepted papers will be published in an IEEE proceedings volume and will be also submitted for the International Publication in *IEEExplore*

Call for Papers

Multilevel converters have received significant attention for improved power quality. Moreover, replacing isolated DC sources with voltage-controlled capacitors makes this technology much more appealing for the industries due to reduced cost and size. Designing auxiliary circuit to make necessary paths for capacitors' currents has been investigated. However, advanced balancing techniques with interesting feature of redundant switching states are preferred to generate same voltage level, using different current paths, and balance the capacitors voltages without requiring external controllers. Thus, the voltage balancing of the DC capacitors in Multilevel Converters is a matter of importance especially in rectifiers and grid-connected inverter applications such as battery chargers, active filters, STATCOM, DVR, etc.

Topics of interest include, but are not limited to:

- *Innovative capacitors based Multilevel Inverter topologies*
- *Novel Multilevel Rectifier Topologies with Voltage Balancing Techniques*
- *Emerging modulation techniques for Voltage Balancing of auxiliary Capacitors in Multilevel Converters*
- *Advanced controllers for Voltage Balancing of auxiliary Capacitors in Multilevel Converters*
- *Auxiliary circuits for voltage balancing of capacitors in multilevel converters*
- *New Applications of Multilevel Converters*
- *Emerging Multilevel Converters for Electrified Transportations*
- *Voltage/Current decoupling techniques for Multilevel Converter control*

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