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Special Session on

"Control Algorithm and Converter Topologies for Energy Efficient Control of AC drives"

organized by

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Call for Papers

Energy efficient control of ac drives is having increase emphasis in the drive industry due to their inherent advantages such as lower life time cost and green energy solutions. The main focus of research is in different type of electrical machines, different power converter topologies and optimal control of drive system. On one hand the work horse of industry Induction Motor is finding its suitability in IE3 and IE4 variants. On the otherhand the rare earth magnets based different variant of Permanent Magnet Synchronous Motor as well as PMaSynRM are also gaining momentum in the different industrial applications. The Maximum Torque Per Ampere (MTPA) and Maximum Efficiency(ME) control are common choice to get best energy efficiency in these drives. And due to lower losses in power circuit with advanced modulation techniques Multilevel Inverter (MLI) technologies proved as substantial global attention by the researchers and front-end industries in various medium- and high-power applications. Specific to the renewable energy system integration (PV/Wind/Fuel Cell), ac motor drives and the grid power quality. Furthermore, the features of these converters are expanded to other applications such as concept of 'more-electric' aircraft, electric ship propulsion, multiphase drives and traction (including electric and hybrid electric vehicles) system. Modular structure provides feasibility to synthesis high voltages by multiple dc sources

and multiple semiconductor switches (IGBT/MOSFET) relatively with limited rating device configurations. Moreover, low expense of redundancy and fault tolerant capabilities, transformerless operation and reduced filter requirements. Irrespective of abundant advantageous still multilevel inverters requires control scheme with complex topology and need to control more degree of freedom requires large signal PWM methodologies. This special session focused on the challenges set to achieve energy efficient control of IM, PMSM, IPMSM, InvSalIPMSM, SynRM, PMaSynRM through advanced control algorithms, multilevel converters topologies, modulation strategies, control schemes for different applications.

Topics of interest include, but are not limited to:

- Energy Efficient Control of IE3, IE4 Induction Motor Drives
- Different Types of Permanent Magnet Motors and their energy efficient control.
- Parameter Independent control of AC drives
- PMaSynRM, SynRM motors and their energy efficient control.
- Novel topologies for the multilevel inverters and its modeling issues.
- Modified and new modulation strategies and closed control techniques.
- Multilevel inverter application to ac motor and multiphase ac motor applications.
- Fault-tolerant control strategies for multilevel inverters.

Submission procedure, deadlines, and author instructions:

A manuscript submitted to the Special Session of ISIE 2017 must be in the IEEE double format with single space 10p fonts and figures included in the text, so the length of the manuscript of 8 pages long in PDF format can be evaluated. For your convenience you may download the WORD template.doc from the conference website: http://www.ISIE2017.org

Deadlines:
- Reception of full paper: December 15th 2016
- Paper acceptance notification: March 1st 2017
- Camera ready paper reception: April 10th 2017