



## Proposal for IECON 2012 Special Session

### Send your proposal to the SS chairs

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Special Session on: **Advanced Topologies and Control for Wind Energy Conversion Systems**

Special Session Organizers (names and contact emails):

- Dr. Mario Durán ([mjduran@uma.es](mailto:mjduran@uma.es))
- Dr. Samir Kouro ([samir.kouro@ieee.org](mailto:samir.kouro@ieee.org))
- Prof. Emil Levi ([E.Levi@ljmu.ac.uk](mailto:E.Levi@ljmu.ac.uk))
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Technical Outline of the Session (50 words) and Topics:

There is currently a great interest in the research community (both academic and industry) in developing multi-megawatt generator-converter configurations and their control for large wind energy conversion systems (WECS). This can be observed by the trend in the latest developed commercial wind turbines, which reach up to 7.5MW and are interfaced through full capacity power converters. The permanent magnet synchronous generator (PMSG) with high-pole-number rotor and gearless drive train, or the PMSG with a medium-pole-number rotor and a reduced gearbox drive train, are common in these developments. Paralleled converters operating at low voltage (690V) dominate the generator-grid interface, although some recent medium voltage converters have found practical application. The wide variety of generator-converter combinations available on the market reflects the challenging task to design a system capable to meet power capacity, performance, efficiency, cost, power density, reliability and grid code requirements.

The aim of this special session is to concentrate all related contributions submitted to IECON 2012, and to provide a fertile environment for presentation and discussion of emerging technology, while promoting academic and industrial interaction and cooperation. The scope of this special section includes, but is not limited to:

- Generator-converter configurations for WECS.
- Generator side and grid side converter control methods.
- Multi-phase generators for WECS.
- Multilevel converters for WECS.
- Grid synchronization
- Technically issues: power quality, efficiency, low voltage ride through, grid code compliance, etc.