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Proposal for IECON 2012 Special Session
Send your proposal to the SS chairs

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Special Session on: **Power Converters and Control for Distributed Generation**

Special Session Organizers (names and contact emails):

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Technical Outline of the Session (50 words) and Topics:

Distributed generation (DG) is expected to play vital role in future to improve the human living. DG and its integration to local AC grid provide options for economical, continuous, and two-directional power flow (utility interface). In addition, it provides a back-up to support during grid failure or blackouts. Low voltage DC grid derived from DG is safe and may cover significant portion of residential load, which is mostly DC load avoiding inefficient ac/dc power supply. Research is needed to push and commercialize these technologies to make the environment clean by replacing conventional generation system.

Topics of interest include, but are not limited to:

- Power factor corrected (PFC) converters
- Low scale residential inverters (off-grid and grid-tied) and micro-inverters: compact, low cost, and reliable
- Soft-switching High-frequency dc/dc converters (*voltage-fed and current-fed*)
- New dc/dc converter topologies
- Power quality improvement techniques (including modulation)
- Energy storage from distributed energy resources (DER) and transient issues
- Smart buildings and integration of DERs
- Hybrid residential micro-grid (AC+DC)
- Energy efficiency analysis in local micro-grids
- Intelligent control of grid-connected power converters or converters/inverters in micro-grid/smart-grid
- Power quality issues and new standards/trends