



World Renewable
Energy Congress

**Mediterranean Green
Energy Forum
MGEF-13
Fes, Morocco
16 - 21 June 2013**



Sustainability in
Energy and Building

INVITED SESSION SUMMARY

Title of Session:

Application of Power Electronics converters in Renewable Energy sources and their Hybrid Systems

Special Session Chairs:

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Details of Session (including aim and scope):

Renewable sources of energy such as photovoltaic, wind power, fuel cells, thermoelectric, etc. have experienced lastly considerable developments due to the increase in global energy production and needs, the high cost and the decline in fossil fuel resources and the world concerns on environmental impacts and climate change. This has facilitated the move towards large scale integration as a major alternative to the conventional energy sources in the national grid, micro-grid, and to the autonomous stand-alone systems.

Moreover, these renewable sources require convenient power electronic interfacing to overcome their critical behaviors issues. Such interfaces are based on power electronic converters which are intended to ensure high level of system's performance like: stability, high efficiency, high reliability and security of the supply, voltage control, active and reactive power flow control, high protection, low electromagnetic emission, low cost and low volume. Altogether, these issues present significant challenges to the best design and efficient control of the power electronic interface. Thus, this special session aims to focus on the recent research and trends for the development and application of different power electronic converters used as an interface with renewable energy sources.

Aims and Scopes (include but not limited to):

- 1- PV grid connected converters;*
- 2- Wind Generator grid connected converters;*
- 3- Hybrid systems grid connected converters;*
- 4- New converter topologies dedicated to renewable energy systems;*
- 5- New converters control methods dedicated to renewable energy interfaces;*
- 6- Converters application for electricity energy storage facilities and their management.*

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