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**Special Session on
Tidal Stream and Wave Energy Converters: Design,
Monitoring, Resilient Control, and Grid Interface**

Organized by

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Call for Papers

Theme

The world wide potential of electric power generation from marine tidal streams and waves is enormous. High load factors resulting from the fluid properties and the predictable resource characteristics make these energy resources attractive and advantageous compared to other renewable energies. While just a few small projects currently exist, the technology is advancing rapidly and has huge potential for generating bulk power. Several demonstrative projects have been scheduled to capture tidal stream and wave energies. A number of these projects have now reached a relatively mature stage and are close to completion. While research emphasis is more towards hydrodynamics and turbine design, very limited activities are witnessed in power conversion interface, control and power quality aspects, which are of vital importance for their successful integration to the grid or to a standalone microgrid. This special session is therefore aimed to promote fruitful experience interchanges and discussions on how to improve tidal stream and wave energy converters behavior.

Topics of interest include, but are not limited to:

- Multiphysics modeling of tidal stream and wave energy converters;
- Design of specific electric generators and drives for tidal stream and wave energy converters;
- Power electronics for tidal stream and wave energy converters;
- Energy storage systems for tidal stream and wave energy converters;
- Control strategies for tidal stream and wave energy converters;
- Failure monitoring in tidal stream and wave energy converters;
- Tidal stream and wave energy converters resilience or fault-tolerant control;
- Tidal and wave energy farms: Architecture optimization, reliability, and grid connection.

IES Technical Committee Sponsoring the Special Session: **Renewable Energy Systems**.