Special Issue

Smart Transformers and Their Role in Smart Grids

Message from the Guest Editors

The increasing connection of renewables and new loads is challenging distribution grids. In order to overcome current and foreseen challenges, a new concept with the capability of forming intelligent grid nodes is proposed: the “smart transformer”. A smart transformer (ST) is a power-electronics-based transformer, adopting advanced control and communication technologies aiming not only to adapt the voltage level from MV to LV grids, but also to provide ancillary services to the grid. In order to exploit their capabilities, STs need to combine power system aspects and power electronics constraints, and thus there are increasing research efforts being made on their topology, modelling, control, stability, and protection, and their ancillary services to grids. This Special Issue focuses on the fundamental technical issues of smart transformers and their advanced functionalities to facilitate smart grids. Prospective authors are invited to submit original contributions or survey papers for review and publication in this Special Issue on Smart Transformers and Their Role in Smart Grids.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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