Special Issue

Fault Diagnosis and Simulations for Power Transformers, Converter Transformers, and High-Frequency Transformers

Message from the Guest Editors

This Special Issue seeks to compile cutting-edge research and practical advancements in fault detection, diagnostic techniques, and simulation-driven approaches tailored to power transformers, converter transformers, and high-frequency transformers. Topics of interest include, but are not limited to:

- Advanced fault detection and localization methods for transformers in grid and power electronic applications.
- Artificial intelligence (AI)/machine learning (ML)-driven prognostic frameworks for insulation aging, partial discharge, and winding deformation.
- High-frequency transformer modeling for wide-bandgap semiconductor applications and renewable energy systems.
- Reliability assessment, failure mode analysis, and life prediction techniques under extreme operating conditions (e.g., overload, harmonics).
- Digital twin development for predictive maintenance of converter transformers in HVDC and FACTS systems.
- Comparative studies of diagnostic tools and modeling techniques for power, converter, and high-frequency transformers.
- Case studies on industrial, renewable energy, and transportation fault mitigation.

Guest Editors

Dr. Fuqiang Ren

Shandong Provincial Key Laboratory of UHV Transmission Technology and Equipment, Shandong University, Jinan 250100, China

Prof. Dr. Qingquan Li

Shandong Provincial Key Laboratory of UHV Transmission Technology and Equipment, Shandong University, Jinan 250100, China

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Energies
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
energies@mdpi.com

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Message from the Editor-in-Chief

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.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

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