Special Issue

Energy Efficiency Improvement of Electric Machines without Rare-Earth Magnets

Message from the Guest Editors

Electric motors consume about 70% of industrial electricity and about 40%–45% of produced electricity in the world. This reveals that using high-efficiency electric motors will reduce energy consumption and the environmental impact, resulting in saving a lot of money and reducing the emissions of CO2. In addition, it will significantly reduce the need for new power plants, thus reducing the invested resources to do so. Electric machines with rare-earth magnets have the highest efficiency and power density. However, rare-earth magnets are expensive, and their manufacturing process, as well as mining rare-earth raw materials, is harmful for the environment. Therefore, developing energy-efficient electric machines without rare-earth magnets is of great interest. Topics of interest for this Special Issue include but are not limited to: - Modeling and design of electric machines without rare-earth magnets; - Synchronous and PM assisted reluctance machines; - Switched reluctance machines; - Flux-switching machines; - Synchronous machines; - Line start motors; - Induction machines; - Electric generators for wind turbines; - Control techniques for electric machines.

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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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