Special Issue

Experimental and Numerical Study of Heat Pump and Heat Exchanger

Message from the Guest Editors

Heat pumps have attracted significant attention in recent years because of their advantages: (a) high operating efficiency, (b) high energy-saving potential, and (c) low greenhouse gas emission. Heat pumps including geothermal heat pumps, air-source heat pumps, and water-source heat pumps are applied to replace the heat and cold generation systems that are not neutral for the environment. Heat exchangers are significant components to extract and convert thermal energy for the heat pump, and they include the evaporator, condenser, horizontal heat exchanger, vertical heat exchanger, and direct contact heat exchanger. The evaporator heat transfer efficiency is susceptible to frost and dirt, and the horizontal and vertical heat exchangers are easily influenced by the heat exchanger layout. Therefore, it is important to improve the heat exchanger efficiency and heat pump performances by experimental and numerical methods. Topics to be covered in this Special Issue include, but are not limited to the following:

- Novel heat pump system
- Heat pump thermodynamic optimization
- Heat pump applications
- New heat exchanger design
- Heat exchanger enhancement
- Other related topics

Guest Editors

Dr. Wenke Zhao
Dr. Lei Shi
Dr. Zhaohui Ruan

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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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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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