



Thermodynamics in Cryogenics

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Message from the Guest Editors

The use of cryogenic technology has been growing gradually in recent decades, mainly due to the continuous increase in demand in the fields of energy, medicine, and science, including superconductivity technology. As cryogenics is characterized by temperature levels that are thermodynamically far from ambient temperatures, all energy losses at a cryogenic temperature require very high energy at an ambient temperature level to compensate. Therefore, the processes and elements of cryogenic systems must be optimized, considering, e.g., the amount of entropy generated at a given temperature level.

This Special Issue, titled "Thermodynamics in Cryogenics", aims to collect the scientific paper that are related, but not limited to, the following:

- cryogenic heat exchanger entropy generation optimization
- cryogenic cycle optimization
- efficiency of thermal insulation materials and optimization of the thermal insulation systems
- thermodynamic efficiency of the cryogenic devices: expanders, circulator, and cold and warm compressors
- thermodynamic efficiency of cryogenic systems
- cold exergy recovery system thermodynamic analysis
- low temperature thermodynamics





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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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