

Special Issue

Thermodynamic and Transport Properties of Plasmas

Message from the Guest Editors

Low-temperature plasmas are applied in different technological fields, from material processing to aerospace. A fundamental aspect in characterizing plasma is the determination of its thermodynamic and transport properties. This is relevant not only to the equilibrium but also to out-of-equilibrium regimes, especially when internal levels depart from the Maxwellian distribution, and the role of excited states needs to be investigated. Moderate, non-equilibrium conditions are modeled by the multi-temperature approach, a convenient alternative to state-to-state kinetics. It requires an accurate definition of the thermal properties of chemical species and of the characteristic temperatures to describe the internal degrees of freedom; these model parameters significantly affect rate coefficients due to the lowering of activation energy for reactive processes initiated from excited levels. This Special Issue is devoted to the discussion of these aspects and relevant open problems in the thermodynamic and transport characterization of equilibrium and non-equilibrium plasmas.

Guest Editors

Dr. Gianpiero Colonna
Dr. Annarita Laricchiuta
Prof. Dr. Elena Kustova

Deadline for manuscript submissions

15 April 2026



Entropy

an Open Access Journal
by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed



mdpi.com/si/234438

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

[mdpi.com/journal/
entropy](https://mdpi.com/journal/entropy)





Entropy

an Open Access Journal
by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed



[mdpi.com/journal/
entropy](https://mdpi.com/journal/entropy)



About the Journal

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.

Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

Editor-in-Chief

Prof. Dr. Kevin H. Knuth

Department of Physics, University at Albany, 1400 Washington Avenue,
Albany, NY 12222, USA

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, PubMed, PMC, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Physics, Multidisciplinary) / CiteScore - Q1 (Mathematical Physics)