

## Special Issue

# Statistical Mechanics of Lattice Gases

### Message from the Guest Editors

Lattice gases in classical statistical mechanics is a fascinating and powerful tool for modeling physical systems. Its underlying simplicity presents major theoretical challenges in developing analytical solutions for the thermodynamic functions when particles are structured because their size, form, and composition and differ from ideal. Entropy dependence on density plays a determinant role in the phase behavior of complex lattice gases. The aim of this Special Issue is to present a number of reviewing and inspiring papers on these issues concerning the analytical treatment and simulation of equilibrium, phase behavior and kinetics of complex classical lattice gases either in classical as well as in quantum model systems. The topics of interest for this Special Issue include but are not limited to the following:

- Fundamentals of Lattice Gases
- Equilibrium Thermodynamics, Phase Transitions, and Critical Phenomena
- Transport Phenomena and Kinetics
- Complex Lattice Gases
- Quantum Lattice Gases

### Guest Editors

Prof. Dr. Antonio J. Ramirez-Pastor

Departamento de Física, Instituto de Física Aplicada, Universidad Nacional de San Luis-CONICET, Ejército de Los Andes 950, San Luis D5700BWS, Argentina

Prof. Dr. Jose Luis Riccardo

Departamento de Física, Instituto de Física Aplicada, Universidad Nacional de San Luis-CONICET, Ejército de Los Andes 950, San Luis D5700BWS, Argentina

### Deadline for manuscript submissions

31 March 2026



## Entropy

an Open Access Journal  
by MDPI

Impact Factor 2.0  
CiteScore 5.2  
Indexed in PubMed



[mdpi.com/si/200292](https://mdpi.com/si/200292)

*Entropy*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[entropy@mdpi.com](mailto: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)