

Special Issue

Calculations and Measurements of Atomic and Molecular Collisions

Message from the Guest Editors

Progress in theoretical modeling and laboratory measurements of reaction rates at atomic and molecular scales has recently led to breakthroughs in spectroscopy with astrophysical, astrochemical, and fusion targets. Cross-disciplinary efforts are needed to ensure that the calculations and laboratory measurements are carried out on aspects that are relevant to the target sources, and that these new results can be validated and further improved through comparisons. Papers in this Special Issue provide insight into the current activities in the creation of atomic and molecular rates, identifying challenges with respect to the demands from the user community, and highlighting solutions that bridge the theoretical and laboratory efforts. theoretical calculations of collisional, photoionized, recombination, or charge exchange spectra and reaction rates; calculations of molecular formation and transitions; laboratory spectroscopy of atomic and molecular collisions and interactions...

Guest Editors

Dr. Liyi Gu

Dr. Junjie Mao

Dr. Chintan Shah

Prof. Dr. Floris Van der Tak

Deadline for manuscript submissions

closed (28 February 2025)

Atoms

an Open Access Journal
by MDPI

Impact Factor 1.5
CiteScore 3.1



mdpi.com/si/128874

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

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



Atoms

an Open Access Journal
by MDPI

Impact Factor 1.5
CiteScore 3.1



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



About the Journal

Message from the Editor-in-Chief

The scope of *Atoms* is deliberately wide and encompasses a large part of theoretical and experimental atomic, molecular, nuclear, and chemical physics in order to encourage cross-disciplinary connections, while supporting the more traditional idea of individual subfields. The journal is also interested in papers concerning the computation and compilation of data related to applications in the above areas. Details of experimental methods and codes are welcome. Your research is taken seriously and peer-reviewed with care. I encourage you to contact me or any of the Editorial Board Members for further information.

Editor-in-Chief

Prof. Dr. Pascal Quinet

1. Physique Atomique et Astrophysique, Université de Mons, B-7000 Mons, Belgium
2. IPNAS, Université de Liège, B-4000 Liège, Belgium

Author Benefits

Open Access

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

High Visibility:

indexed within Scopus, ESCI (Web of Science), Astrophysics Data System, Inspec, CAPlus / SciFinder, INSPIRE, and other databases.

Journal Rank:

CiteScore - Q2 (Nuclear and High Energy Physics)