



*atoms*



an Open Access Journal by MDPI

## Physics of Impurities in Quantum Gases

Guest Editors:

**Dr. Simeon Mistakidis**

ITAMP, Center for Astrophysics |  
Harvard & Smithsonian,  
Cambridge, MA 02138, USA

**Dr. Artem Volosniev**

IST Austria, am Campus 1, 3400  
Klosterneuburg, Austria

Deadline for manuscript  
submissions:

**closed (31 March 2022)**

### Message from the Guest Editors

Dear Colleagues,

The aim of this Special Issue of *Atoms* is to contribute to this discussion by highlighting recent advances regarding the physics of impurities in quantum gases. The Special Issue will collect theoretical and experimental works dedicated to fundamental properties and universal aspects of quasiparticles, as well as to applications of the quasiparticle concept in different contexts such as trapped mixtures of bosons or fermions, Rydberg systems, cavity settings, etc. The Special Issue will contain studies of multicomponent setups and quantum mixtures, ranging from the many-body correlated dynamics to ground state properties of few particles, and few-body processes that play a role in many-body systems with impurities. We invite authors to submit original research as well as short pedagogical reviews and communications with technical details that can lead to a substantially improved understanding of the existing theoretical and experimental results.

Dr. Simeon Mistakidis

Dr. Artem Volosniev

*Guest Editors*



[mdpi.com/si/48630](https://mdpi.com/si/48630)

# Special Issue



*atoms*



an Open Access Journal by MDPI

## 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

## 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.

## 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)

## Contact Us

---

*Atoms* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/atoms  
atoms@mdpi.com  
X@Atoms\_MDPI