



Laser Cooling and Trapping of Atoms, Molecules, and Nanoparticles

Guest Editor:

Dr. Galina Nemova

Department of Engineering
Physics, Polytechnique Montréal,
P.O. Box 6079, Station Centre-
ville, Montréal, QC H3C 3A7,
Canada

Deadline for manuscript
submissions:

closed (30 June 2023)

Message from the Guest Editor

Dear Colleagues,

In 1970, Arthur Ashkin showed that the use of optical forces to alter the motion of microparticles and neutral atoms could have applications in the manipulation of microscopic particles and of single atoms. These pioneering works have formed the basis for two very successful research areas: laser cooling of atoms and optical trapping. Today, these well-developed techniques are common tools for the manipulation of atoms, molecules and particles.

The aim of this Special Issue is to attract publications devoted to experimental and/or theoretical works on the latest achievements, trends and developments, including applications of laser cooling and trapping of atoms, molecules and nanoparticles. In this Special Issue, original research articles and reviews are welcome. Research areas may include (but are not limited to) the following:

- laser cooling of atoms, molecules, nanoparticles;
- optical tweezers;
- optical forces;
- optical lattices;
- structured light for optical tweezers;
- Bose–Einstein condensate;
- atomic fountains;
- application of laser cooling in quantum science;
- Raman cooling;
- exotic laser cooling schemes.





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica,
Politecnico di Milano, Piazza L.
da Vinci 32, 20133 Milano, Italy

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q1 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)

Contact Us

Applied Sciences Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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

mdpi.com/journal/applsci
applsci@mdpi.com
[X@Applsci](#)