



Laser Cooling of Solids: Novel Advances and Applications

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 (20 November 2021)

Message from the Guest Editor

Dear Colleagues,

The laser cooling of solids, also known as optical refrigeration, is one of the most interesting and promising areas of laser physics. This area of laser physics has attracted widespread attention from researchers because of the wide range of its applications including optical cryocoolers for airborne and space-based applications, heat suppression in high-power lasers, and the cooling of nanoparticles for biological and mesoscopic physics.

The purpose of this Special Issue is to provide an overview of recent experimental and theoretical achievements in the laser cooling of solids and its applications. Potential topics include, but are not limited to:

- Laser cooling rare-earth-doped solids;
- Laser cooling of semiconductors;
- Radiation-balanced lasers and amplifiers;
- New materials for laser cooling;
- New methods of laser cooling;
- Thermodynamics of laser cooling of solids;
- Optical cryocoolers;
- Laser cooling of rare-earth-doped photonic crystals;
- Laser cooling of nanoparticles;
- Thermometry techniques for laser cooling.





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](#)