Special Issue

Collective Atomic and Free-Electron Lasing

Message from the Guest Editors

Collective or cooperative behaviors and interactions are abundant in nature. In physics, collective interactions mediated by light are of importance both for fundamental studies of phenomena such as spontaneous self-organization in classical and quantum systems as well as for their technological application. Recent examples of ground-breaking applications include new laser sources with extraordinary spectral capabilities, e.g., coherent X-ray generation by electron beams in free-electron lasers (FELs) and ultranarrow linewidth optical radiation generation by atoms in superradiant lasers. We invite contributions to this Special Issue on any topic relating to collective effects involving the interaction between light and matter, including, but not limited to:

- Collective atomic recoil lasing1/collective Rayleigh scattering2
- Free-electron lasing3
- Cooperative emission or scattering of light4
- Superradiant and subradiant emission or scattering of light5
- Spontaneous self-organization mediated by light

This Special Issue is dedicated to the memory of Rodolfo Bonifacio, who was a pioneer in this field.

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Deadline for manuscript submissions

closed (31 May 2021)

Atoms

an Open Access Journal by MDPI

Impact Factor 1.5
CiteScore 3.1

mdpi.com/si/46920

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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.

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