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Symmetry in Plasma Physics and Controlled Fusion—Dedicated to 100th Anniversary of Birth of N. G. Basov

Guest Editor:

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Deadline for manuscript submissions:
closed (31 December 2023)

Message from the Guest Editor

Dear Colleagues,

2022 marks the 100th anniversary of the birth of Academician Nikolai G. Basov, the Nobel Prize winner for the development of fundamental principles of masers and lasers. He was also the ideologue and inspirer of Inertial Confinement Fusion (ICF), based on a thermonuclear (TN) reaction in a mixture of deuterium and tritium (DT) in a spherical target irradiated by a high-power laser. He initiated ICF research in the Division of Quantum Radiophysics headed by him at the P.N. Lebedev Physical Institute and published pioneer results in this field 50 years ago.

The past year has been marked by an outstanding achievement: The NIF installation at the LLNL (USA) demonstrated thermonuclear burning and near breakeven microexplosion energy very close to the expended laser energy. The symmetry of a TN target itself, irradiation symmetry and a symmetric implosion with minimal hydrodynamic instabilities were the key topics of this success.

We are soliciting contributions in the form of research and review articles covering a broad range of topics on ICF (IFE) physics and technology.

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Editor-in-Chief

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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