

Special Issue

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

Message from the Guest Editor

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.

Guest Editor

Dr. Vladimir D. Zvorykin

P. N. Lebedev Physical Institute, Leninskii Prospekt, 53, 119991 Moscow, Russia

Deadline for manuscript submissions

closed (31 December 2023)



Symmetry

an Open Access Journal
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Impact Factor 2.2
CiteScore 5.3



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Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

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About the Journal

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.

Editor-in-Chief

Prof. Dr. Sergei Odintsov

1. ICREA, 08010 Barcelona, Spain

2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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