Foreword

Special issue on Wide-Ranging and Exotic Applications of Fusion Technology, Part 2

Guest Editors

Sergei V. Ryzhkov[a] and Arkady Serikov[b]

[a]*Bauman Moscow State Technical University, Moscow, Russia*
[b]*Karlsruhe Institute of Technology, Karlsruhe, Germany*

This second volume of the *Fusion Science and Technology* special issue on wide-ranging and exotic applications of fusion technology is devoted to new achievements reached in the field of alternative fusion systems and advanced fuels as well as their applications. This issue contains 11 papers, thematically covering methodology and modeling advances in new concepts and achievements in experimental and computational analysis of fusion machines.

Topics include plasma confinement in the L2-M stellarator at high microwave heating powers, nanostructured layer growth on plasma-facing materials irradiated with helium plasma, an optimized neural network for a robotic patient positioning system used in a proton therapy system, nature-inspired concepts of high-power electric propulsion systems, challenges and future prospects in hydrogen separation membranes, interaction of the substance of the Tsarev meteorite with the radiation from a powerful gyrotron, microdispersed Ti/B/N materials synthesized in chain reactions in a process initiated by microwaves from a high-power gyrotron, prospects for the use of atmospheric optical communication at nuclear and fusion facilities, a new approach to nuclear fusion based on muon catalysis by means of high-energy ball lightning and accelerative mechanisms, facile synthesis of stable nanosized silver clusters in plasma discharge under ultrasonic cavitation, and application of adaptive channeling of low-energy particles in above-target graphene film to optimize accelerator nuclear fusion in unstructured targets.

The papers in this issue provide a snapshot of interesting fusion-related work that is underway. We wish you good reading and hope you enjoy this special issue of *Fusion Science and Technology*!

ORCID

Sergei V. Ryzhkov http://orcid.org/0000-0003-0351-718X
Arkady Serikov http://orcid.org/0000-0003-2053-7879