

Preface

The International Toki Conference (since 1989) is a topical meeting dedicated to the future of fusion and plasma science. Under the title of “Expanding academic world emerging from fusion science”, the 31st International Toki Conference on Plasma and Fusion Research (ITC31) was held from November 8 to 11, 2022, as a world-wide forum for international and interdisciplinary discussions towards the universalization of fusion and plasma science. The conference was organized by eleven special sessions to present the academic plans and prospects for a new phase of the National Institute for Fusion Science (NIFS), as well as related plenary/invited talks and contributed poster sessions. Focusing on the universal questions raised in the conference, each organized session will contribute to lay the foundation for sustainable future science and technology by integrating academics. It is our hope that the values and importance will be shared with all participants.

The conference topics cover a wide range of plasma and fusion science research. The topics selected for the ITC31 were as follows:

Fusion Plasma Science
Basic and Applied Plasma Science
Space and Astrophysical Science
Quantum Process and Quantum Beam-Matter Interactions
Fusion Engineering and Superconductivity & Cryogenic Technology
Simulation, Diagnostics, Visualization, and Data-driven Science
Interdisciplinary Prospects

This special issue of Plasma and Fusion Research (PFR) contains 51 regular articles, 4 overview articles and 2 review articles presented at the conference. These papers have been accepted for publication after being peer-reviewed through the processes administrated by the editors listed below:

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Ryutaro Kanno
Guest Editor-in-Chief
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