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Recent Developments in Fusion Plasma Diagnostics

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Deadline for manuscript submissions:
closed (30 September 2021)

Message from the Guest Editors

Thermonuclear plasmas are complex, open systems, kept well out of equilibrium by massive injection of energy and particles to achieve nuclear fusion conditions. The measurement of their properties is essential for both understanding of the physics and real time control and is performed by specifically designed devices, called diagnostics.

This Special Issue is aimed at collecting papers that describe new measurement solutions and developments. The contributions can be based on (but not limited to):

- Magnetic diagnostics
- Microwaves and millimeter waves diagnostics
- Infrared polarimetry/interferometry
- Spectroscopic and radiation measurements
- Neutron/gamma diagnostics
- Diagnostic for the plasma-wall interactions, erosion and migration
- Tomography and imaging
- Neutral beam and laser supported diagnostics
- Machine learning and data mining techniques

The construction of ITER and the design of DEMO are contributing to the recent emphasis on the diagnostics for the burning plasma. Control of instabilities has also become more central to the international programme. Papers related to these topics are particularly welcome.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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