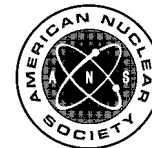


COMMENTS



In this issue of *Fusion Science and Technology (FS&T)*, we are pleased to bring you the contributions from the Tore Supra tokamak, located at the nuclear research center of Cadarache, France, one of the sites of the French Atomic Energy Commission [Commissariat à l'Énergie Atomique (CEA)]. For the past 8 yr, *FS&T* has been working with international tokamak groups to contribute to series of special issues to recognize and highlight the science and technology contributions to a next-step burning plasma experiment (ITER). All major tokamaks around the world have been participating, and the series will have a long-lasting value to the fusion community, from desktops to classrooms. With ITER (the way to new energy) now under construction at Cadarache, France, by its seven international partners (China, European Union, India, Japan, Korea, Russian Federation, and the United States), this series of tokamak special issues has proven to be more timely than ever to help attract and educate a new generation of scientists and engineers who will be the ones to build, run, and scientifically exploit

ITER—reaping the benefits of all that has been achieved in the international fusion program.

We are deeply indebted to the Tore Supra Team and to the contributing authors for their efforts in preparing this special issue for the readers of *FS&T*. The 19 papers included in this issue survived the rigors of the peer review process, courtesy of 50-plus international reviewers. The papers cover the period of 20 yr of Tore Supra operation from mid-1988 to early 2009. They are either original contributions or informative reviews of the Tore Supra physics results and technological developments, with relevance to ITER. Certainly, this issue could not have been possible without the support and encouragement from the Tore Supra/CEA leadership. Our special thanks are due Dr. Claudio De Michelis for his help with the coordination of the issue and for serving as the guest editor.

The Tore Supra issue is the ninth in the *FS&T* special issue series of tokamak experiments. The first eight in the series are as follows:

“Special Issue on JT-60,” *FS&T*, Vol. 42, Nos. 2/3, September/November 2002;

“Special Issue on ASDEX-Upgrade,” *FS&T*, Vol. 44, No. 3, November 2003;

“Special Issue on Frascati Tokamak Upgrade (FTU),” *FS&T*, Vol. 45, No. 3, May 2004;

“Special Issue on TEXTOR,” *FS&T*, Vol. 47, No. 2, February 2005;

“Special Issue on DIII-D Tokamak,” *FS&T*, Vol. 48, No. 2, October 2005;

“Special Issue on JFT-2M Tokamak,” *FS&T*, Vol. 49, No. 2, February 2006;

“Special Issue on Alcator C-Mod Tokamak,” *FS&T*, Vol. 51, No. 3, April 2007;

“Special Issue on Joint European Torus (JET),” *FS&T*, Vol. 53, No. 4, May 2008.

Tore Supra started operation in 1988 and is one of the largest tokamaks in the world. Its unique features are its superconducting toroidal magnets and its actively cooled first wall, allowing one to address critical physics and technology issues of high-power, long plasma duration discharges. At the time of its design and construction (in the early 1980s), integration of a set of superconducting magnets in a significantly sized tokamak represented a great challenge. Practically uninterrupted operation since 1988 of the Tore Supra superconducting magnet is in itself a great technological success for the fusion program and other industries. During its 20 yr of operation, Tore Supra has been carrying out a number of innovative research techniques and technologies (most of which are covered in this issue) that are important for burning plasmas (ITER). It holds the record of the longest plasma duration time for a tokamak (6 min, 30 s, and >1 GJ of energy injected and extracted in 2003). The breadth and depth of the Tore Supra research program and its contributions to ITER are clearly evident in the papers contained in this issue. We wish all researchers continued success and look forward to their future contributions.

This special issue is dedicated to the outstanding team of scientists, engineers, and support staff that contributed to the success of the Tore Supra program.

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