

Horizons of Fusion Science and Technology Explored by the ITER Project

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The ITER project is exploring many important horizons of the Fusion Science and Technology; ITER is a necessary step on the way to a commercial fusion reactor. ITER will demonstrate the availability and integration of science and technologies, and safety features for a fusion reactor. The self-sustained D-T (fuel of fusion) burning plasma in ITER will generate 500 MW which is 10 times more power than it receives.

The ITER Project is an international megaproject, which is in the process of creating a new collaborative culture and pioneering standards for solving the world's energy and environmental problems, and for contributing to world peace. Since no show stopper has appeared up to now, such as the case of the difficult CS cable issue which was solved successfully in 2012, it is possible to mention that the ITER Project has passed the point of no return. The in-kind manufacturing is making progress all over the world, and the first large component already arrived at the ITER site on 4 September 2014. This is also highlighted by the ITER Organization (IO) and EU-DA's joint achievement of the concrete pouring of the B2 slab, which was successfully started on 10 July 2014 immediately after receiving the letter from the Nuclear Safety Authority (ASN) to release the hold-point, and it was completed on 27 August. Therefore the only way is to go forward together. This fact should be understood and shared by all the stakeholders.

Now a day, the seven domestic agencies (DAs) of the ITER Organization (IO) from China, EU, India, Japan, South Korea, Russia, and the United States have committed to in-kind procurement of more than 90% of the total credit value and to more than 70% of the number of Procurement Arrangements. Construction is accelerating and the appearance of the site is changing on a daily basis. As the ITER project advances in the construction phase, there is increased coordination of plant systems engineering, tokamak construction, and building and site infrastructure.

The recent progress and recent contribution to the horizons of fusion research are reported.