



Project: International Thermonuclear Experimental Reactor (ITER)

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ITER and fusion technology development in India



Abstract:

- ITER is a 'first of its kind' experimental reactor with an aim of demonstrating fusion as an alternate source of energy with the construction being shared by seven members. The machine under construction in south of France aims at demonstrating nuclear fusion with $Q \geq 10$. India is contributing nine packages like the cryostat, in-wall shields, cooling water systems, cryogenics, IC and EC RF heating systems, diagnostic neutral beam and diagnostics. Each of this package has special requirements related to materials, precision machining, jointing technologies for similar and dissimilar materials and RF technologies. Enormous experience has been gained during the course of ensuring these deliverables to ITER with the Indian industry and to bring the industry to the state of industrial readiness for future needs. The present status of the ITER and the technologies developed shall be presented and discussed.

About the Speaker:

- Prof. P. I. John held the Meghnad Saha Chair in Plasma Science and Technology at the Institute for Plasma Research, Gandhinagar. He joined the Physical Research Laboratory in Ahmedabad in 1972 to establish a modern Plasma Physics Laboratory. He helped establish the Plasma Physics Programme in 1982, which evolved into the Institute for Plasma Research in 1986. In 1997, Prof. John set up the Facilitation Centre for Industrial Plasma Technologies, to link IPR with industries. Prof. John was a member of the Science and Technology Advisory Committee of ITER and represented India on the ITER Council. In 2008, he developed the National Fusion Programme for funding universities and educational institutions in research in Fusion Sciences. His book "Plasma Sciences and the Creation of Wealth", was published by Tata McGraw-Hill in 2005. Another, "Plasma Processes for Energy and Environment" was published by Lambert Publishers in November 2017.
- Prof. John is a Fellow of the Indian Academy of Sciences. The Government of India honoured him with Padma Shri in 2010.

