



Project: International Thermonuclear Experimental Reactor (ITER)

Dr. Shashank Chaturvedi, Director, IPR, Gandhinagar

India's Plasma Science & Technology Program and Spin-offs



Abstract:

- Institute for Plasma Research (IPR), at Gandhinagar has been actively engaged in developing programs related to plasma science and technology since 1986. These include various fields of theoretical science, materials and technologies related to superconducting magnets, cryogenics and RF and neutral beam systems. Experiments on indigenously built ADITYA Tokamak and its upgrade have shed light on several important aspects of plasmas behaviour in tokamaks. SST-1 has helped address several areas of material and technology developments. India's participation in ITER through ITER-India is further helping the Indian academia and industry to understand and develop several areas relevant to fusion technology. In addition, keeping societal benefits into consideration several spin offs have been/are being developed in the Facilitation Centre for Industrial Plasma Technologies (FCIPT). The proposed talk will highlight outcome from the above programs to showcase India's progress in the ultimate quest for fusion energy while continuing to reap societal benefits.

About the Speaker:

- Shashank Chaturvedi got his B.Tech. in Chemical Engineering from IIT Delhi and Ph.D. in Chemical Engineering from Princeton University, USA. His PhD work involved the computational study of a novel Nuclear Fusion reactor concept, and was part of the Plasma Science & Technology Programme supported by the Princeton Plasma Physics Lab. He is a Fellow of the Indian National Academy of Engineering and Senior Professor in the Homi Bhabha National Institute (HBNI). He is a recipient of the Homi Bhabha Science & Technology award of the Dept. of Atomic Energy. His research interests include modelling of pulsed-power & plasma systems, including Magneto-hydrodynamics, radiation-hydrodynamics, high-speed impact & shock waves, pulsed electromagnetics, High Performance Computing (HPC), Theoretical and experimental determination of materials properties under extreme conditions (equation of state, radiation opacity), and automated processing of signals, voice, image & video data.

