MAX PLANCK INSTITUTE
FOR PLASMA PHYSICS

Press release

Garching, October 11, 2022 PI 04/2022

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Figure 1: from left to right: Georg Harrer (TU Wien), Lidija Radovanovic (TU Wien), Elisabeth Wolfrum (IPP Garching), Friedrich Aumayr (TU Wien) holding a 3D printed 1:100 model of ITER (Photo: David Rath, TU Wien)

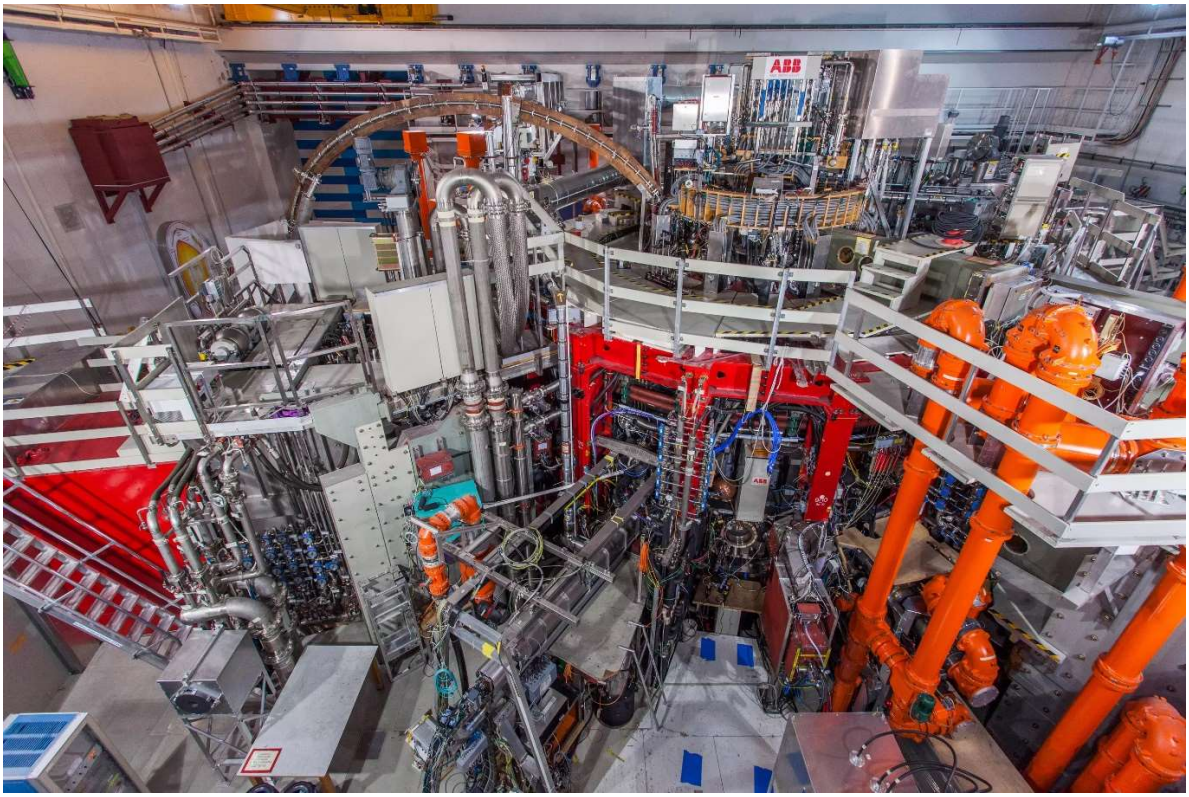

Figure 2: The ASDEX Upgrade research facility at the Max Planck Institute for Plasma Physics in Garching near Munich, where the experiments have been carried out (Photo: IPP, Helmut Faugel).

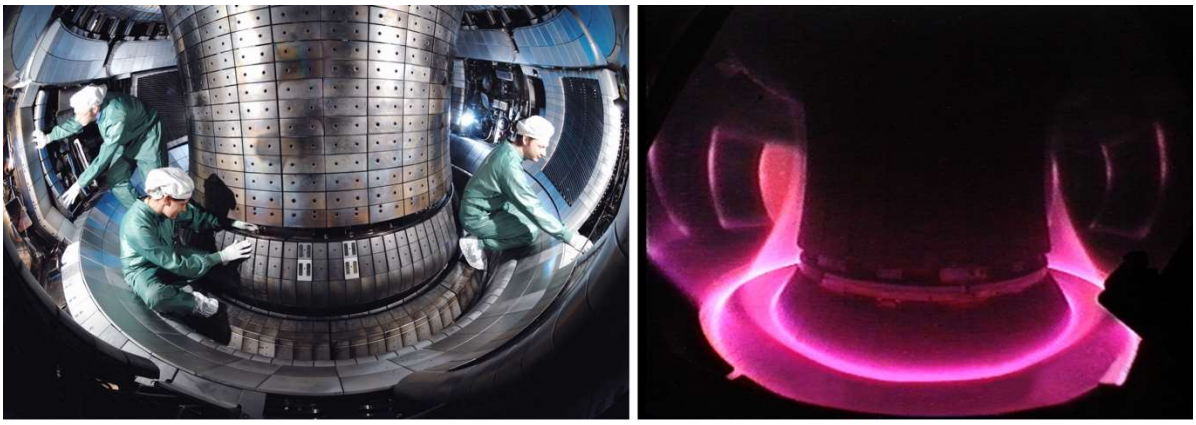

Figure 3: Left: View inside the plasma vessel of the ASDEX Upgrade fusion reactor. The first wall is made of the element tungsten, a metal with an extremely high melting point, which withstands the high heat fluxes and the constant particle bombardment from the plasma. Right: View into the reactor interior of ASDEX Upgrade during a plasma discharge. (Photo: IPP).

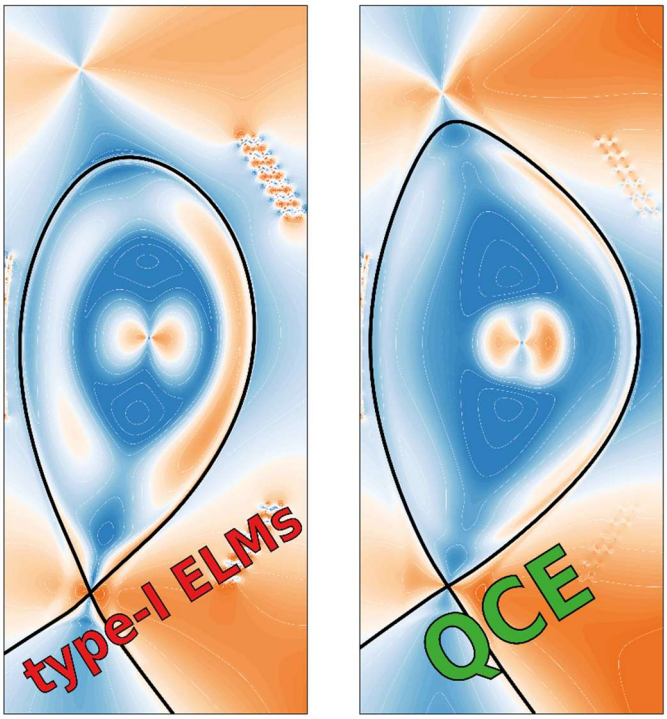

Figure 4: Cross-section of the toroidal tokamak plasma in ASDEX Upgrade; The left picture shows the usual operation regime, where strong instabilities (called Type-I ELMs) occur; right, the new regime of operation, with its more triangular cross section. If at the same time the density of the plasma at the edge is increased, the dangerous Type-I ELMs can be prevented and a quasi-continuous exhaust (QCE) operational regime can be achieved. (Figure: G. Harrer & L. Radovanovic, TU Wien).