

# Benchmark experiments with ITER materials irradiated in the JET tokamak – cross-check of the neutron-induced activity results obtained by Laboratories.

Due to the lack of the existing material irradiation facility with an intense neutron source characterized by a broad energy spectrum peaked at around 14 MeV, experiments performed at the JET tokamak provide a unique opportunity to check the activation behaviour of the materials used as construction materials of fusion reactors in the real fusion environment. The D-T campaign at JET is planned to take place in 2021 with a total neutron budget of  $1.3E21$ . During the 2019 D-D campaign first irradiation experiments with samples of real ITER materials were performed to optimize procedures and check the level of the neutron-induced activity and capabilities of predicting it via calculations. The selected materials and dosimetry foils that were irradiated in the specially designed long-term irradiation sample holder assembly were installed in the redundant Be evaporator in octant 7. Over a 147-day period of irradiation, a total neutron yield of  $3.151E19$  neutrons was observed. Following irradiation, the ITER samples were distributed across the five EU gamma-spectrometry laboratories, a.o. to IFJ PAN and IPPLM, for analysis. The poster presents the results of the gamma spectrometry measurements performed at IPPLM.