Activities for fusion energy functional and plasma facing material research at the University of Latvia

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Investigations on tritium generating materials:

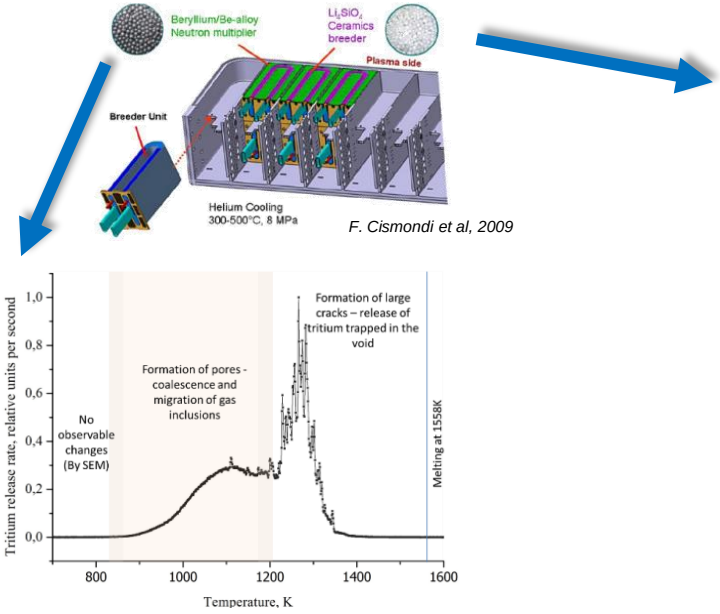

Fig.1. Tritium release and structure evolution of neutron irradiated beryllium pebble (PBA experiment) during thermal treatment (heating rate 5K/min)

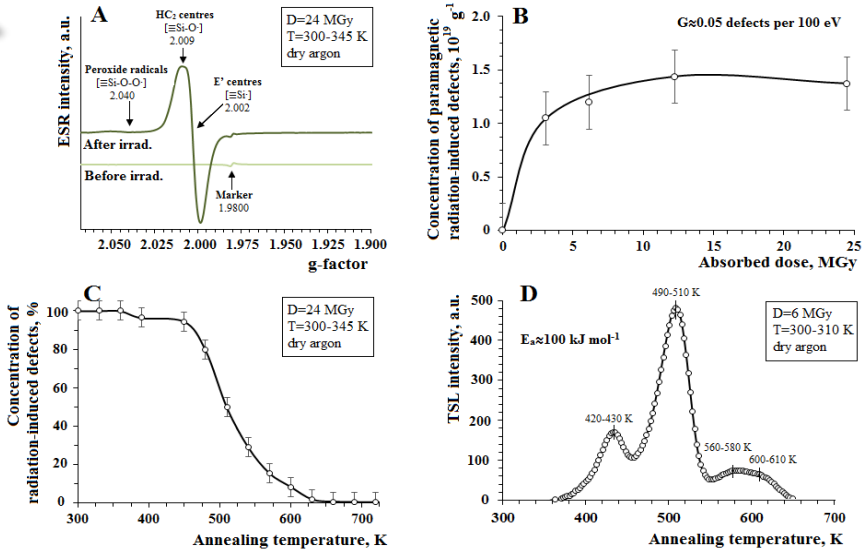

Fig. 2. Characterization of accumulated radiation defects in Li_4SiO_4 with excess of SiO_2 (A) before and after irradiation with accelerated electrons, (B) the total concentration of the accumulated paramagnetic RD depending on absorbed dose, (C) thermal stability of RD, and (D) the TSL glow curve of recombination processes

Analysis of plasma facing materials:

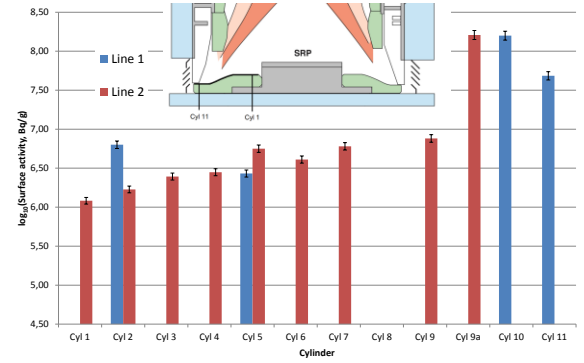

Fig. 3. Surface activity of top slice of Cylinders 1-11, Lines 1 and 2; JET 2001-2004, Tile 14 BW G4B

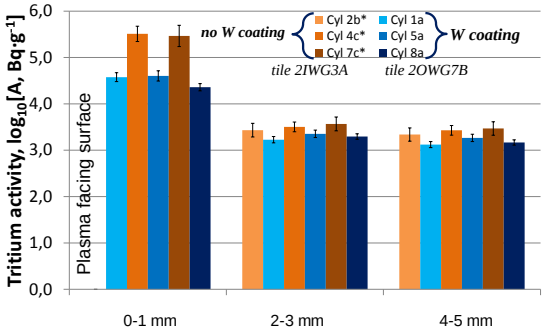

Fig. 4. Comparison of tritium mass activity W-coated and non-coated tiles

Main conclusions:

Analysis of the functional materials of the JET and for ITER gives contribution to the improvement of the materials and understanding of plasma-wall interactions as well as tritium release processes for next step fusion devices.