

THE IMPACT OF COMBINED REGIMES OF EXTREME HEAT LOAD IRRADIATION ON THE SURFACE OF DOUBLE FORGED TUNGSTEN

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In the current research double forged tungsten (DFW) is investigated as a potential candidate for armour material of future tokamak's divertor. In fusion devices armour materials, especially in the region of divertor, are exposed to continuous heat and particle load. Also, several off-normal events can affect the material during each work session. Calculations show that effect of plasma and the heat can lead to cracking, erosion and detachment of the material. Mutual and combined influence of different kinds of heat and particle loads can lead to amplification of defects or *vice versa*, to the mitigation of damages. The combined effects of different plasma fluxes are investigated on tungsten samples. Research is conducted by analyzing SEM images and measurements of 3D micro-topography.

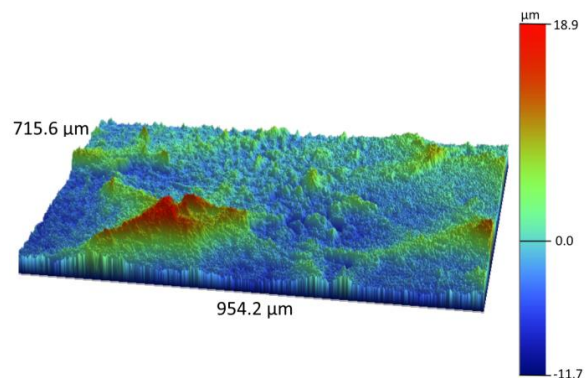


Fig.1 3D micro-topography of sample DFW-1 (after being irradiated twice: a. 50 pulses at PF-6 and b. 50 pulses at PF-12) measured with Bruker 3D white light Optical Microscope Contour GT-K.

References

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