

EXTREME HEAT LOAD IRRADIATION INDUCED DAMAGES INSIDE DOUBLE FORGED TUNGSTEN

Jana Paju¹, Berit Väli¹, Tõnu Laas¹, Veronika Shirokova^{1,2}, Katrin Laas¹

¹School of Natural Sciences and Health, Tallinn University, Narva Road 25, Tallinn, 10120 Estonia

²Center for Science and Engineering, Virumaa College of Tallinn University of Technology, Järveküla Road 75, Kohtla-Järve, 30322, Estonia

e-mail of presenting author: janapaju@tlu.ee

As the world is facing energy crisis, new methods for producing energy is considered. One of the future solutions could be fusion energy. In current research the suitability of double forged tungsten (DFW) is considered as an armour material in future tokamak's divertors. The armor materials, especially in divertor region, are continuously exposed to heavy heat and particle loads. During a work session, several off-normal events can occur, that affect the material. Calculations indicate that plasma and heat can, in case of such events, lead to cracking, erosion and detachment of material. The influence of plasma can lead to either amplification or mitigation of damages.

The combined effects of different plasma fluxes are investigated on tungsten samples. Research is conducted by analysing the conductivity measurements and obtained SEM images of sample's cross-sections.

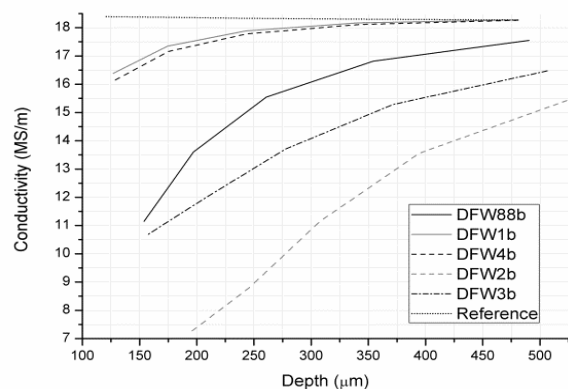


Fig.1 Comparison of the final results of conductivity all the studied samples after the second irradiation.

References

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