

FOURIER SPECTRUM OF THE STOCHASTIC RELIEF OF PLASMA IRRADIATED TUNGSTEN SAMPLES

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Tungsten specimens with good wear and thermal resistance properties have been irradiated in this study with 20, 40, 60, 80 and 100 plasma shots, respectively, to investigate the dependence of the Fourier spectra of stochastic relief (an example of which input data is shown in Fig.1) and multifractal (MF) parameters on the irradiation time series. MF methods have been used successfully in the past to analyze the damaged surface and determine the degree of damage [1]. Budaev has found that Fourier stochastic relief has a law of ascension that correlates with MF parameters [2], and the aim of this study is to determine whether this regularity is valid within single substance when considering the time series of irradiation.

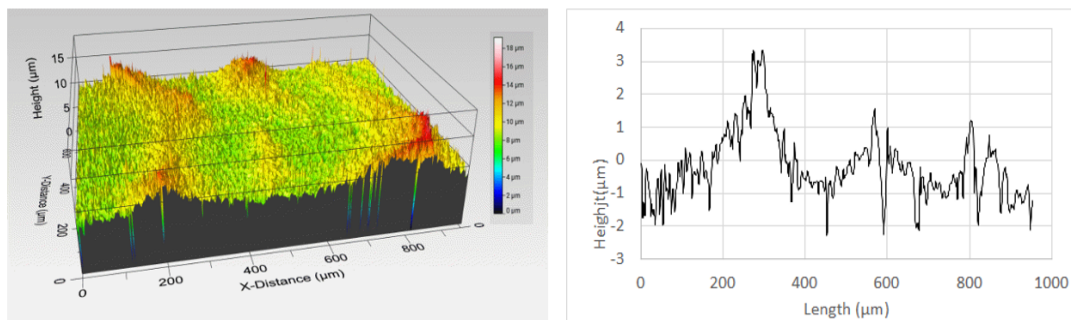


Fig.1 3D and 2D profiles over the surface of plasma-irradiated tungsten sample W20.

References

1. M. Martsepp, T. Laas, K. Laas, *et al* (2019). Multifractal analysis of plasma irradiated tungsten alloy samples. AIP Conf. Proc., 2164, 100005.
2. V.P Budaev. (2017) Stochastic clustering of material surface under high-heat plasma load. Phys. Lett. A. 281, 3706-3713.



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