

Abstract Submitted
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Characterization of impurity deposition on the first wall of EAST tokamak using LIBS HONGBIN DING, Dalian University of Technology — Our recent investigations have indicated a potential of laser-induced breakdown spectroscopy (LIBS) for analysis of the co-deposited layers on the first wall in the Experimental Advanced Superconducting Tokamak (EAST) in a vacuum environment. Detailed information of compositions at the superficial and in-depth positions of the first wall of divertor tiles can be obtained by analyzing the spectra from 200-980 nm. The decrease in concentrations of the depositional elements (such as Li) was clearly observed in the depth from 0 to 100 μm , but the concentrations of the substrate elements were found to be relatively uniform in the depth after dozens of laser pulses. The linear correlation approach has been applied for improving the depth profile accuracy and identifying the interface boundary between the deposition layer and the substrate for the first time. This would help us to develop LIBS method to monitor the fuel retention and impurity.

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