

Abstract Submitted
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Evaporation studies of lithiated ATJ graphite KENZO IBANO, VI-JAY SURLA, DAVID RUZIC, Center for Plasma-Material Interactions, University of Illinois at Urbana-Champaign, Urbana, IL 61801 — Lithium evaporation conditioning of ATJ graphite tiles at the diverter region of the National Spherical Torus Experiment (NSTX) occasionally showed remarkable improvements to the plasma performance. [1] To obtain these effects consistently, a deeper understanding of the lithium behavior in the ATJ graphite is required. In particular, the evaporation as a function of temperature of the intercalated lithium from the graphite surface is an important concern. Therefore ATJ graphite samples were examined in the Ion-Surface Interaction Experiment (IIAX) at the University of Illinois. After a certain amount of lithium was evaporated to the ATJ graphite by an in-situ lithium heater, the amount of evaporation from the sample surface as a function of temperature was observed using a dual quartz crystal microbalance system. The experiments are repeated with similar samples that have been saturated by D. These results are modeled and compared to lithiated graphite sputtering studies. Chemical sputtering effects are also considered. [1] H. W. Kugel et al., 18th PSI conference, submitted to J. Nucl. Mater. (2008)

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