

Abstract Submitted
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Transient heating experiments on C in a Be seeded plasma in PISCES B¹ JEREMY HANNA, UCSD, ROBERTO PUGNO, IPP, DAISUKE NISHIJIMA, RUSS DOERNER, MATTHEW BALDWIN, UCSD — A transient heating system has been installed on the PISCES-B experimental system. This heating system uses a pulsed positive bias to draw electrons from the plasma and transiently heat the surface of the plasma-exposed sample ohmically. This heating can be used to investigate the effects of transient heating in plasma facing components expected during ELMs in ITER-like devices. An experimental investigation of the effects of transient heating on Be films on C substrates in deuterium plasmas has been conducted in PISCES-B. It has been shown previously that Be film growth on C can form carbide layers that reduce the chemical erosion of C during deuterium ion bombardment. Results from transient heating on the chemical erosion and on deuterium retention in C targets will be presented. A scaling expression for chemical erosion suppression due to Be₂C formation developed previously will be extended to include transients with varying peak surface temperature and duty cycle of the thermal transients.

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