

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Removal of Deposits from Diagnostic Mirrors employing an Nd:YAG Laser¹ DREW CARDWELL, Pacific Lutheran University, C.A. GENTILE, C.H. SKINNER, S. LANGISH, Princeton Plasma Physics Laboratory — A noninvasive laser ablation process for the removal of deposited carbon and beryllium particles on diagnostic mirrors is investigated in support of ITER and other similar fusion devices. The need to maintain in-vessel mirrors in a clean and reflective condition is critical when such surfaces are required to reflect plasma light to appropriate diagnostic systems. A configuration including a q-switched 1064nm Nd:YAG laser coupled to a quartz fiber optic, laser scanning system, and lens will be employed to determine optimal conditions for the ablation of deposited particles, while mitigating physical effects on the mirror surface. The effectiveness of this in situ cleaning method will be evaluated while varying such parameters as the laser focus, scanning speed, pulse frequency, and surface temperature.

¹This work supported by DOE Contract Number DE-AC02-76CH03073.

Drew Cardwell
Pacific Lutheran University

Date submitted: 21 Jul 2006

Electronic form version 1.4