Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Impurity injection studies in NSTX H-modes using a tangential "optical" soft X-ray array L. DELGADO-APARICIO, D. STUTMAN, K. TRITZ, M. FINKENTHAL, The Johns Hopkins University, R. BELL, M. BELL, R. KAITA, S. KAYE, B. LEBLANC, S. PAUL, L. ROQUEMORE, Princeton Plasma Physics Laboratory, F. LEVINTON, H. YUH, Nova Photonics — First impurity transport experiments in high power and high density NSTX H-modes have been performed by puffing neon at the edge for several tens of ms and following the penetration of the injected ions with a newly developed, tangential multi-color optical soft X-ray array (OSXR). The neon penetrates the core on the hundred ms time scale, indicating low particle diffusivity. The peaking of the neon density late in the shot also indicates an inward convective velocity, while a field scan at fixed q-profile shows slower penetration at higher field. Two techniques for measuring the evolution of the impurity density with the OSXR array are compared, the Abel inversion and the forward modeling of the emission profiles. First results of determining the impurity transport coefficients will also be presented. Supported by DOE Grant DE-FG02-99ER5452 at JHU and Contract DE-AC02-76CH03073 at PPPL.

L. Delgado-Aparicio
The Johns Hopkins University

Date submitted: 24 Jul 2006 Electronic form version 1.4