

Abstract Submitted  
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**Impact of Lithium-coated PFCs on the Edge Neutral Density on NSTX** E.T.R. ROSENMAN, Harvard University, D.J. BATTAGLIA, ORNL, H.W. KUGEL, B.P. LEBLANC, F. SCOTTI, PPPL, NSTX TEAM — Wall recycling of deuterium is reduced on NSTX by applying solid lithium coatings to the carbon composite plasma-facing components. The impact of the reduced recycling on the neutral density profile in the scrape-off layer (SOL) is inferred using a high-speed camera (268 Hz) with an H-beta filter and a chordal view of the SOL (0.2 cm resolution). The recorded intensity profile is converted to a radial profile of plasma emissivity using an absolute calibration of the camera and an Abel Inversion. The neutral density is computed by dividing the plasma emissivity by a function of the electron density and temperature, which are estimated using data from the Thomson scattering diagnostic. Initial calculations indicate that the neutral deuterium density decreases as the total amount of pre-shot lithium deposited in NSTX increases. The error in the profile measurement is quantified via Monte Carlo techniques. This work is supported by US DOE contracts DE-AC02-09CH11466 and DE-AC05-00OR22725.

Devon Battaglia  
ORNL

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