

Abstract Submitted
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The design and status of a ChERS diagnostic for LTX¹ T.M. BIEWER, ORNL, D. BOYLE, Princeton University, T.K. GRAY, ORISE, R. KAITA, PPPL, R. MAINGI, ORNL, R. MAJESKI, PPPL — There has been a long-standing collaboration between ORNL and PPPL in the area of edge and boundary layer plasma physics. As part of this collaboration, ORNL has a large role in the instrumentation and interpretation of the edge physics in the Lithium Tokamak Experiment (LTX). In particular, a charge-exchange recombination spectroscopy (ChERS) diagnostic is being designed and is undergoing a staged implementation on LTX. This year passive spectroscopy measurements have been made on LTX, in anticipation of active spectroscopy measurements, which will be enabled by the installation of a diagnostic neutral beam in FY2012. The LTX ChERS diagnostic will consist of both toroidal and poloidal lines of sight, allowing for profile measurement of all the plasma parameters (T_i , n_{Li} , v_P , v_T) required for the calculation via force balance of the radial electric field profile (E_r), when combined with the magnetic field profile from equilibrium reconstructions. The effect of lithium on the E_r profile, as well as the fundamental plasma parameters, is a major topic of interest for LTX and the plasma physics community. Preliminary data will be presented.

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