

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Impurity Content of Compact Toroid Plasmas in CTIX<sup>1</sup>** D. BUCHENAUER, W.M. CLIFT, Sandia National Laboratories, S.J. HOWARD, R. KLAUSER, S.J. BROCKINGTON, R.W. EVANS, D.Q. HWANG, R.D. HORTON, University of California Davis — The Compact Toroid Injection Experiment (CTIX) produces a high density, high velocity hydrogen plasma which maintains its configuration in free space on a MHD resistive time scale. Repetitive injection of CT plasmas is being considered as a deep fueling technique for tokamaks such as ITER. In order to study the importance of impurities, several sets of silicon collector probes were exposed to the high velocity CT plasmas. Elemental analysis by Auger Electron Spectroscopy indicated the presence of oxygen, aluminum, iron, and copper in films up to 20 nm thickness (1000 CT interactions). Using a smaller number of CT interactions (10), implantation of the impurities was measured with depth profiling. The ordering of the range of the impurities (oxygen, aluminum, iron, copper) agreed roughly with TRIM calculations, however, the depth of the implants was less than that predicted for impurities moving with the CT velocity. Analysis of artificially introduced impurities and a discussion of the source of the intrinsic impurities will be discussed.

<sup>1</sup>Work supported by US DOE Contract DE-AC04-94AL85000 and U.S. DOE Grant DE-FG02-03ER54732.

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Date submitted: 19 Jul 2007

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