

Abstract Submitted
for the GEC18 Meeting of
The American Physical Society

Laser Induced Fluorescence Measurements of Ion Beamlets in REVAN¹ DAVID CARON, THOMAS STEINBERGER, JOHN MCKEE, West Virginia Univ, COSTEL BILOIU, Applied Materials, EARL SCIME, West Virginia Univ — Plasma doping and etching has become increasingly important for production of three-dimensional semiconductors. To increase the packing density of transistors beyond the levels achievable with ~ 10 nm feature lithography, industries are moving to three-dimensional structures. Here we present the initial measurements of ion beamlet structure and energy in the Ribbon Experiment for Velocity and Angular distributioN (REVAN). REVAN employs a commercial-style plasma source with an extraction geometry designed to create beams of high energy ions to dope and etch silicon wafers. We will present laser induced fluorescence (LIF) measurements of ion beamlet angle and energy distribution in an argon plasma. The dependence of beam parameters on source RF power, gas pressure, and extraction voltage are investigated.

¹Work supported by NSF Grant PHYS- 1617880

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Date submitted: 15 Jun 2018

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