

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Ion Sources for Deep and Shallow Ion Implantation¹ ADY HERSHCOVITCH, BNL, V. BATALIN, ITEP, A. BUGAEV, HCEI, V. GUSHENETS, B. JOHNSON, A. KOLOMIETS, G. KROPACHEV, R. KUIBEDA, T. KULEVOY, I. LITOVKO, E. MASUNOV, E. OKS, V. PERSHIN, S. PETRENKO, S. POLOZOV, H. POOLE, PVI, Oxnard CA, I. RUDSKOY, D. SELEZNEV, P. STOROZHENKO, A. SVAROVSKI, G. YUSHKOV — Various ions, but mostly B, P, Sb, & As, are implanted, over a wide range of energies into materials used in the construction of semiconductors. These energies range from as low as 100 eV for shallow surface implantations, to as high as multi-MeV for deep implantation into the substrate. State of the art ion sources meet industry needs for the energy range of 10 keV to 300 keV. But at the two extremes (100's of eV and at multi-MeV), there is room for improvement due to space charge limitations at the low energy range and due to inefficiency in acceleration at the higher energy range. A joint R&D effort focusing on meeting industry needs has been in progress for the past four years. This endeavor has resulted in record steady state output currents of higher charge state Antimony and Phosphorous ions as well as Decaborane molecular ions. This talk is a synopsis of an extensive ion source R&D program designed to address industry needs.

¹Supported by DOE Contract No. DE-AC02-98CH1-886.

Ady Hershcovitch
Brookhaven National Laboratory

Date submitted: 20 Nov 2007

Electronic form version 1.4