

Title: Mass spectrometry improvement on an high current ion implanter

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Abstract: The development of accurate mass spectrometry, enabling the identification of all the ions extracted from the ion source in a high current implanter is described. The spectrometry system uses two signals (x-y graphic), one proportional to the magnetic field (x-axes), taken from the high-voltage potential with an optic fiber system, and the other proportional to the beam current intensity (y-axes), taken from a beam-stop. The ion beam mass register in a mass spectrum of all the elements magnetically analyzed with the same radius and defined by a pair of analyzing slits as a function of their beam intensity is presented. The developed system uses a PC to control the displaying of the extracted beam mass spectrum, and also recording of all data acquired for posterior analysis. The operator uses a LabView code that enables the interfacing between an I/O board and the ion implanter. The experimental results from an ion implantation experiment are shown. (C) 2011 Elsevier B.V. All rights reserved.

Author Keywords: High Current Ion Implanter; LabView; Mass Spectrum; Hyperfine Interactions

KeyWords Plus: Sapphire; Beam

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