METHOD AND SYSTEM FOR OPERATING A VARIABLE APERTURE IN AN ION IMPLANTER

Abstract

A system and method are provided for operating a variable aperture (30) for adjusting the amount of ion beam current passing therethrough in an ion implantation system (10). The system and method comprise means or steps for (i) measuring ion beam current at an implanter location using a current detector (35); (ii) comparing the measured ion beam current with a desired ion beam current; (iii) outputting a control signal (126, 128) based on the comparison of the measured ion beam current with the desired ion beam current; and (iv) adjusting a gap (50), through which through ion beam passes and which is defined by opposing first and second aperture plates (44A, 44B), in response to the control signal to control the amount of ion beam current passing therethrough. The current detector (35) provides ion beam current feedback, and a position sensor (116, 118) may be utilized to provide aperture plate (44A, 44B) position feedback. The system and method provide a quick, direct, and precise mechanism for effecting significant changes in ion beam current without requiring re-tuning of the source. The gap (50) of the aperture (44) is adjustable in increments of about 5 microns (μm).

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