

DIAMOND-LIKE COATED COMPONENTS IN AN ION IMPLANTER FOR REDUCING X-RAY EMISSIONS

Abstract

A component of an ion implanter (10), and a method of operating same, are provided for reducing the amount of x-rays generated when an ion beam (15) passes therethrough. In one embodiment, the component comprises an electrode (72) in an ion implanter radio frequency (RF) linear accelerator (linac) (18) that is coated with a material coating (114) having as lesser atomic mass that that of the underlying electrode, such that electrons impacting said coating produce less x-rays than electrons impacting said electrode. The electrode (72) may be made of aluminum, and the coating (114) may be made of a carbon-based material, such as a synthetic diamond or a diamond-like coating (DLC) material. The coating (114) has a thickness of approximately two to ten (2-10) microns (μm), and is applied by a chemical vapor deposition (CVD) process.

Fig. 1