METHOD FOR EXTENDING LIFETIME OF AN ION SOURCE

Abstract

This invention relates in part to a method for preventing or reducing the formation and/or accumulation of deposits in an ion source component of an ion implanter used in semiconductor and microelectronic manufacturing. The ion source component includes an ionization chamber and one or more components contained within the ionization chamber. The method involves introducing into the ionization chamber a dopant gas, wherein the dopant gas has a composition sufficient to prevent or reduce the formation of fluorine ions/radicals during ionization. The dopant gas is then ionized under conditions sufficient to prevent or reduce the formation and/or accumulation of deposits on the interior of the ionization chamber and/or on the one or more components contained within the ionization chamber. The deposits adversely impact the normal operation of the ion implanter causing frequent down time and reducing tool utilization.

Fig. 1