

ENDCAP FOR INDIRECTLY HEATED CATHODE OF ION SOURCE

ABSTRACT

An ion source (12) embodying the present invention is for use in an ion implanter (10). The ion source (12) comprises a gas confinement chamber (76) having conductive chamber walls (130) that bound a gas ionization zone (R).
5 The gas confinement chamber (76) includes an exit opening (78) to allow ions to exit the chamber (76). A base (28) positions the gas confinement chamber (76) relative to structure for forming an ion beam (20) from ions exiting the gas confinement chamber (76). A portion of a cathode (124) extends into an opening (158) in the gas confinement chamber (76). The cathode (124) includes a
10 cathode body (300) defining an interior region (C) in which a filament (178) is disposed. The cathode body (300) comprises an inner tubular member (162) a coaxial outer tubular member (160) and an endcap (164) having a reduced cross section body portion (324) with a radially extending rim (326). The endcap (164) is pressed into the inner tubular member (162). The filament (178) is energized
15 to heat the endcap (164) which, in turn, emits electrons into the gas ionization zone (R). The filament (178) is protected from energized plasma in the gas ionization zone (R) by the cathode body (300).

(Fig. 1)

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REPLACED