Title (en)

Fast atom beam source

Title (de)

Schnelle Atomstrahlquelle

Title (fr)

Source de faisceau atomique rapide

Publication

EP 0430081 B1 19960320 (EN)

Application

EP 90122336 A 19901122

Priority

JP 30183289 A 19891122

Abstract (en)

[origin: EP0430081A2] A fast atom beam source comprises a evacuated cylinder, an anode set at one end or an intermediate portion of the cylinder, a cathode with fast atom emission orifices on it, and set at the other end of the cylinder, and a DC high voltage power supply for generating gas discharge by applying a high voltage between the anode and the cathode. A slit is provided on inside wall of the cylinder and a reservoir for oil or low-melting point metal is connected to the slit. A heater is set on the reservoir for vapourizing the oil or low-melting point metal. It supplies vapor of oil or low-melting point metal into the cylinder. Many ions of oil or low melting point metal are generated in glow through gas (the oil, vapor or the metal vapor) discharge by high voltage applying. They are accelerated towards the cathode. Then, they are neutralized after collision with the vapor of oil or low-melting point metal remaining near the cathode and are emitted from the orifices on the cathode. They constitute a fast atom beam. During such operation, the vapor of oil or low-melting point metal enters the cylinder through the slit and maintains an equilibrium condition of gas density in the cylinder. Thus, an automatic supply of the gas consumed as a fast atom beam is effected without any gas feeding device or any gas adjusting device.

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IPC 8 full level

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CPC (source: EP)

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EP 0430081 A2 19910605; **EP 0430081 A3 19911030**; **EP 0430081 B1 19960320**; AT E135875 T1 19960415; DE 69026037 D1 19960425; DE 69026037 T2 19961031; JP H03163733 A 19910715; JP H0715839 B2 19950222

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