

Title (en)

Wave guide-type electron cyclotron resonance ion source producing multicharged ions

Title (de)

Elektroncyclotronresonanz-Ionenquelle vom Wellenleiter-Typ zur Erzeugung mehrfachgeladenen Ionen

Title (fr)

Source d'ions multichargés à résonance cyclotronique électronique de type guide d'ondes

Publication

EP 0527082 B1 19960508 (FR)

Application

EP 92402219 A 19920803

Priority

FR 9109945 A 19910805

Abstract (en)

[origin: EP0527082A1] Waveguide-type electron cyclotron resonance ion source producing multicharged ions. This source comprises a leaktight enclosure (2) surrounding a gaseous medium capable of being ionised to form a plasma containing electrons accelerated by electron cyclotron resonance, this enclosure including a longitudinal axis (4), a first (6) and a second (8) end along this axis; means (12) of injecting an electromagnetic field of frequency greater than or equal to 6GHz into the enclosure, in the region of its first end, in order to ionise the gaseous medium; means (32, 34, 36, 38) for creating, in the enclosure, an axially symmetric magnetic field whose value of induction B is a minimum in a midplane of the enclosure, perpendicular to the axis; permanent magnets (40, 42, 44) for creating a radially symmetric magnetic field; an ion extraction system (28) situated in the region of the second end, and is characterised in that the enclosure is a waveguide having a width (l) along the midplane (P) such that $0.5 \leq l/g \leq 1.5$ where g represents the wavelength of the electromagnetic field satisfying the resonance condition and in that the means for creating the axially symmetric field consist of permanent magnets. <IMAGE>

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CPC (source: EP)

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Cited by

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