

Title (en)
ELECTRON CYCLOTRON RESONANCE ION SOURCE

Publication
EP 0252845 B1 19900425 (FR)

Application
EP 87401608 A 19870708

Priority
FR 8610066 A 19860710

Abstract (en)
[origin: EP0252845A1] 1. Electron cyclotron resonance ion source comprising : - a sealed enclosure (2) having a longitudinal axis of symmetry (4) a first end and a second end (8, 10) which are oriented along this axis, this enclosure (2) containing a gas intended to form by electron cyclotron resonance a plasma confined in the said enclosure, - a device (12, 14) for injecting a high-frequency electromagnetic field at the first end (8) of the enclosure, - a system (30, 32) for extracting the ions formed from the enclosure, which system is situated at the second end of the enclosure, and - a magnetic structure, disposed about the enclosure (2) and exhibiting an axis of symmetry coincident with that of the enclosure, generating local, axial and radial magnetic fields defining at least one equimagnetic surface (28) on which the condition of electron cyclotron resonance is satisfy, the magnetic structure comprising, in order to create a cusped or crescent magnetic bottle : - a first coil and a second coil (20, 22) which are disposed on either side of and at equal distance from a median plane (III-III), perpendicular to the longitudinal axis (4) of the enclosure and passing through the centre (6) of the cavity, currents of opposite directions of circulation flowing through these two coils (20, 22), and - means (36, 42, 50) for concentrating the magnetic force lines (38), surrounding the enclosure in the median plane (III-III) and locally reinforcing the radial magnetic fields in this plane, at the location of the enclosure.

IPC 1-7
H01J 27/18

IPC 8 full level
H01J 27/18 (2006.01)

CPC (source: EP)
H01J 27/18 (2013.01)

Citation (examination)
• EP 0232651 A1 19870819 - COMMISSARIAT ENERGIE ATOMIQUE [FR]
• EP 0130907 A1 19850109 - COMMISSARIAT ENERGIE ATOMIQUE [FR]

Cited by
FR2756097A1; FR2705584A1; US5422481A; FR2701797A1; US5726412A; DE19933762A1; DE19933762C2; DE4419970A1; WO9822970A1; WO9403919A1; WO9419921A1

Designated contracting state (EPC)
BE DE GB NL

DOCDB simple family (publication)
EP 0252845 A1 19880113; EP 0252845 B1 19900425; DE 3762470 D1 19900531; FR 2601498 A1 19880115; FR 2601498 B1 19881007

DOCDB simple family (application)
EP 87401608 A 19870708; DE 3762470 T 19870708; FR 8610066 A 19860710