

Title (en)
Plasma mass selector

Title (de)
Plasmamassenfilter

Title (fr)
Filtre de masse à plasma

Publication
EP 1220289 A3 20030514 (EN)

Application
EP 01202936 A 20010802

Priority
US 63466500 A 20000808

Abstract (en)
[origin: EP1220289A2] A plasma mass selector for processing a partially ionized multi-species plasma includes magnetic coils that are mounted on a cylindrical chamber to establish an axially oriented uniform magnetic field in the chamber. A segmented quadrupole electrode creates a non-uniform cyclotron electric field in the chamber that is oriented perpendicular to the chamber axis to cross with the magnetic field. With the plasma in the chamber, a controller is activated to operate the non-uniform cyclotron electric field at a predetermined cyclotron frequency (ω). The electric field thus resonates with selected charged particles having the predetermined cyclotron frequency (ω) to restrain the selected particles in orbits around the central axis during their transit through the chamber. On the other hand, non-selected particles are allowed to drift radially outward from the central axis for collision with the wall and subsequent removal therefrom. <IMAGE>

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H01J 49/42; **H01J 49/30**

IPC 8 full level
H01J 49/42 (2006.01); **H01J 49/28** (2006.01); **H01J 49/38** (2006.01)

CPC (source: EP)
H01J 49/288 (2013.01)

Citation (search report)

- [A] EP 1001450 A2 20000517 - ARCHIMEDES TECH GROUP INC [US]
- [A] US 4093856 A 19780606 - STENZEL REINER L

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EP 1220289 A2 20020703; **EP 1220289 A3 20030514**; JP 2002150994 A 20020524

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EP 01202936 A 20010802; JP 2001240480 A 20010808