

Title (en)
Plasma mass selector

Title (de)
Plasmamassenfilter

Title (fr)
Filtre de masse à plasma

Publication
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Application
EP 01202936 A 20010802

Priority
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Abstract (en)
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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