

GRIDDED ION THRUSTER WITH INTEGRATED SOLID PROPELLANT

ABSTRACT OF THE DISCLOSURE

The invention relates to an ion thruster (100), comprising:

- a chamber (10),
 - a reservoir (20), comprising a solid propellant (PS), housed in the chamber (10) and comprising a conductive jacket (21) provided with an orifice (22);
 - means (30, 40) for forming an ion-electron plasma in the chamber (10), which means are able to sublime the solid propellant in the reservoir (20), then to generate said plasma in the chamber (10) from the sublimed propellant coming from the reservoir (20) through the orifice (22);
 - a means (50) for extracting and accelerating the ions and electrons of the plasma out of the chamber (10), which means comprises at least two grids (52', 51) at one end (E) of the chamber (10);
 - a radiofrequency AC voltage source (30) for generating a radiofrequency signal comprised between the plasma frequencies of the ions and of the electrons, arranged in series with a capacitor (53) and connected, by one of its outputs and via this capacitor (53), to one (52') of the grids, with the other grid (51) being connected to the other output of said voltage source (30);
- said means (50) for extracting and accelerating and said voltage source (30) making it possible to form, at the output of the chamber (10), an ion-electron beam (70).

[FIGURE 4.]