

SPACE PROPULSION SYMPOSIUM (C4)

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STUDY ON THE PLUME CHARACTERISTICS OF PULSED PLASMA THRUSTER

Abstract

In order to study the characteristics of the plasma in the plume of APPT, a current-model Triple Langmuir probe was applied. To decreasing the errors in measurement, Probe , collection circuit and glow cleaning devices were elaborately designed. A FIR digital filter based on Matlab was designed and the software for date processing was developed by Labview. The plasma characteristics in differnt positions in the plume in two planes which was perpendicular and parrallel to the electrode of the thruster were studied. The results show that electron temperature and electron density of the plasma having non-symmetrical characteristics in the perpendicular plane. Plasma property in perpendicular plane and parallel plane show different change trend.