IAF SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (2) (6)

Author: Dr. Hua Zhang
China

Mrs. Xun Wen
China
Mr. Zhiqiang Tang
China
Mr. Limin Zhang
China
Dr. Xiaoguang Wang
China
Mr. Xiang Ji
China

INFLUENCE OF PROPELLANT PROPERTIES ON THE PERFORMANCE OF PULSED PLASMA THRUSTERS

Abstract

Pulsed Plasma Thrusters (PPTs) have been widely utilized in space missions due to their advantages of high specific impulse, low power consumption, and simple propellant management. The propellant is one of the critical factors influencing the performance of PPTs, with polytetrafluoroethylene (Teflon) being the most commonly used propellant material. In this study, Teflon was modified by incorporating seeded additives to alter its ionization and thermal conduction characteristics. By measuring the performance parameters of PPTs employing different modified propellants, the influence of propellant properties on thruster performance was systematically investigated.