

SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

Author: Mr. Hua Zhang

College of Aerospace Science and Engineering, National University of Defense Technology, China,
zhann10000@163.com

Dr. Jianjun Wu

National University of Defense Technology, China, jjwu@nudt.edu.cn

Dr. Zhen He

College of Aerospace and Materials Engineering, National University of Defense Technology, China,
hezhen_2012@sina.com

Mr. Daixian Zhang

College of Aerospace Science and Engineering, National University of Defense Technology, China,
zhangdaixian@163.com

Dr. Rui Zhang

College of Aerospace and Materials Engineering, National University of Defense Technology, China,
nudtzhang@163.comCHARACTERISTICS OF PLASMA PROPERTIES IN A PULSED PLASMA THRUSTER USING
DIFFERENT MODIFIED PROPELLANTS**Abstract**

Pulsed plasma thrusters(PPTs) have been used widely in space flight mission due to their high specific impulses, low power requirements, and simple propellant management. The process of movement of plasma bulk in discharge passage creates thrust. Plasma bulk properties have great influence on the performance of PPTs. In this study, optical emission spectroscopy was applied to investigate the plasma properties in variation of time, space and heat conduction coefficient of propellant. Electron density, electron temperature and components of plasma bulk were derived and discussed.