

Abstract Submitted  
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**Study of whole channel discharge characteristics of Hall Thruster under different voltages** DUAN PING, Dalian Maritime University — We used the method of Particle-in-Cell to simulate the distribution of electron density, ion density and electron temperature with different discharge voltages in a Hall thruster channel. The variation of specific impulse with the discharge voltage was also discussed. It was found that maximum electron and ion densities are gained at the axial 15mm when the discharge voltage is ranging from 250V to 650V and the electron temperature peak emerges near the channel outlet of small axial distance. Under the condition of 700V or higher discharge voltages, highest electron temperature expands in the axial direction and the maximum densities are located in the anode vicinity where the ionization region is limited to. It also revealed that specific impulse increases with the increase of discharge voltage.

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