

Entering into Space and New Energy and Propulsion Technology (7)

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ON-ORBIT FLIGHT PERFORMANCE ANALYSIS OF THE LHT-100 HALL ELECTRIC PROPULSION SYSTEM ON SJ-17 SATELLITE

Abstract

To obtain the space flight experiment data to verify the space environmental adaptability, compatibility with the spacecraft, space working characteristic, and the difference of space flight performance and ground data of hall electric propulsion system, the flight test of Chinese first LHT-100 hall electric propulsion system was conducted on SJ-17 satellite launched on November 3, 2016. This paper introduces the design scheme and primary performance index of the LHT-100 hall electric propulsion system. The on-orbit test contents are as follows, the system pretreatment, thrust calibration on orbit, the single long time ignition test and the switch times verification. The first firing operation has been implemented successfully on November 21, 2016. The whole test plan was completed until December 5, 2016. The on-orbit test results of the LHT-100 hall electric propulsion system on SJ-17 satellite are described emphatically. In the end,

the on-orbit flight test conclusions are brought out, the results indicate that the each operation parameter satisfies the corresponding design requirements of the LHT-100 hall electric propulsion system in the entire flight test period.