

Current Status of 5A Lab6 Hollow Cathode Life Tests in Lanzhou Institute of Physics, China

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Abstract : The current statuses of lifetime test of LaB6 hollow cathode at the Lanzhou institute of physics (LIP), China, was described. 5A LaB6 hollow cathode was designed for LIPS-200 40mN Xenon ion thruster and it could be used for LHT-100 80 mN Hall thruster, too. Life test of the discharge and neutralizer modes of LHC-5 hollow cathode were started in October 2011, and cumulative operation time reached 17,300 and 16,100 hours in April 2015, respectively. The life of cathode was designed more than 11,000 hours. Parameters of discharge and key structure dimensions were monitored in different stage of life test indicated that cathodes were health enough. The test will continue until the cathode cannot work or operation parameter is not in normally. The result of the endurance test of cathode demonstrated that the LaB6 hollow cathode is satisfied for the required of thruster in life and performance.

Keywords : LaB6, hollow cathode, thruster, lifetime test, electric propulsion

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