SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

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THE DEVELOPMENT OF LANTHANUM HEXABORIDE (LAB6) HOLLOW CATHODES FOR ION THRUSTER IN CHINA

Abstract

Hollow cathode is a core part of an ion thruster, because its lifetime and reliability are major limit restrict those of ion thruster. A lanthanum hexaboride (LaB6) hollow cathode has been developed for 20 cm ion thruster in china. This paper describes the design, performance, and life test of the LaB6 hollow cathodes, and the operation characteristics of 20 cm ion thruster with the LaB6 cathode is discussed as well. So farthe LaB6 cathode has been operated successfully for 3700 hours and 7000 times on/off, and its heaters has been tested about l4000 times on/off. The cathode life can be predicted to more than 40000 hours.