

SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

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A 20KW HIGH POWER HALL EFFECT THRUSTER FOR EXPLORATION

Abstract

The HiPER (“High Power Electric Propulsion: a Roadmap for the future”) project is funded by the European Union under the Space theme of the 7th Framework Programme. During these 3 years activities, the electric propulsion for space exploration will be addressed and high power Hall Effect thrusters will be evaluated among other propulsive solutions. This publication gives an overview of the work in progress for the Hall effect thrusters work package and describes the 20 kW prototype to be constructed and tested. A brief overview of the state of art in high power HET is given then the main technological and design issues are addressed as the scaling laws, the manufacturing of large size ceramic , the heat fluxes and thermal challenges of the thrusters, the modelling of the discharge, . . . The 20 kW prototype will be tested in the Pivoine facility of the CNRS / Icare laboratory, and the paper outlines the foreseen test conditions and instrumentation.