SPACE PROPULSION SYMPOSIUM (C4)
New Missions Enabled by New Propulsion Technology and Systems (6)

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RESEARCH ON ADN GREEN PROPULSION TECHNOLOGY FOR FAST-RESPONDING SATELLITE APPLICATIONS

Abstract

The novel technology of satellite propulsion with green propellant has been widely drawing our attention and widely studied since it was put forward. The advantage of liquid Ammonium Dinitramide(ADN) based propellant for fast-responding satellites, compared with the common propellant used for satellites at present, is presented in this paper. According to the character of green propellant, the scheme of satellite propulsion system with liquid-state ADN as monopropellant is advanced, and the preliminary modularization design is carried out. Also, we have the green propulsion system design with ADN as propellant, which is of the same as the working principle of common small satellite platform's propulsion system, and we have some calculations for fast-responding satellites. The calculation shows that because of the high density-specific impulsion and consistency of ADN based propellant, the green propulsion system can be used in fast-responding satellites.