

India launches environment-friendly in-orbit propulsion system

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Online Desk: India has successfully tested an environment-friendly propulsion system demonstrating in-orbit functionality on a microsatellite launched by a rocket, aligning space missions with the environment.

The innovative technology has resulted in a non-toxic propulsion system for low orbit space, the Defence Ministry said in a statement adding the system consists of indigenously-developed propellant, fill and drain valves, latch valve, solenoid valve, catalyst bed and drive electronics. It is ideal for space missions with high thrust requirements.

The project 1N Class Green Monopropellant thruster for altitude control and orbit keeping of microsatellites was funded by the Technology Development Fund (TDF) and sanctioned to a Bengaluru-based startup Bellatrix Aerospace Pvt Ltd.

The complete project, carried out by the startup under the guidance of monitoring and mentoring by the state-owned Defence Research Development Organization (DRDO), has demonstrated pulsed mode and steady-state firing in a vacuum, passivation of residual propellant in outer space, propellant realisation and establishing of filling procedure, according to the statement.

The Telemetry Data from the Polar Satellite Launch Vehicle Orbital Experimental Module (POEM) at the Indian Space Research Organization Telemetry, Tracking and Command Network (ISTRAC) in Bengaluru has been validated with ground-level solutions and is found to have exceeded all performance parameters, the statement said.

The TDF is a flagship programme of the Ministry of Defence executed by DRDO under the 'Make-in-India' initiative for funding innovation in defence and aerospace, especially to startups and MSMEs.