



TDB-DST signs agreement with Manastu Space for ₹116 crore RDI support to advance indigenous green propulsion technology

Project to develop scalable, high-performance and cost-effective propulsion systems for satellites and launch vehicles, advancing technology from TRL-6 to TRL-9

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In a significant step towards strengthening India's indigenous space technology capabilities and promoting sustainable access to space, the Technology Development Board (TDB), Department of Science & Technology (DST), Government of India, has signed an agreement with M/s Manastu Space Technologies Private Limited, Navi Mumbai, Maharashtra for financial support of ₹116 crore under the Research Development and Innovation (RDI) Fund.

The project, with a total project cost of ₹277.63 crore, focuses on developing a scalable, integrated green propulsion system for satellites and launch vehicles across the 5 mN to 300 N thrust class. The programme aims to advance the technology from Technology Readiness Level (TRL)-6 to TRL-9, supporting further development, validation and deployment of the propulsion system. The financial support will be provided through Optionally Convertible Debt (OCD).

Manastu Space is developing an indigenous green propulsion system designed to provide a complete propulsion solution for satellites and launch vehicles. The technology uses a hydrogen peroxide-based green propellant with additives, supported by an integrated engine and catalyst system. The system offers improved performance and cost efficiency while reducing the operational challenges associated with conventional propellants.

A key feature of the technology is its scalable architecture, serving propulsion requirements ranging from small satellite applications to higher-thrust systems. The project encompasses the development of propulsion engines and propellant feed systems, including an ultra-high-temperature ceramic catalyst designed for reliable operation under demanding conditions.

The propulsion system has already been demonstrated in space. The programme will build on this technology base through further engineering, system integration, testing and validation, advancing its performance, reliability and readiness for wider deployment across satellite and launch vehicle applications. The project addresses an important requirement in the evolving space economy: propulsion systems that can support more efficient satellite operations while improving the safety and economics of space missions.

The project falls under the Deep Technology sector, with Space Technology as the sub-sector. By supporting indigenous propulsion development, the initiative aims to strengthen domestic capabilities in a critical component of the space value chain and reduce reliance on externally sourced technologies.

Shri Rajesh Kumar Pathak, Secretary, TDB, said, *“Indigenous propulsion technologies are important for strengthening India’s capabilities across the space value chain. As the country’s space ecosystem continues to expand, there is a growing need for propulsion systems that combine performance, reliability, operational safety and cost efficiency. Through the RDI Fund, TDB is supporting technology-intensive programmes that require sustained investment to progress from advanced development towards deployment. The project with Manastu Space reflects this commitment to advancing indigenous space technologies and enabling more sustainable approaches to access to space.”*

Co-Founder & CTO, Manastu Space Technologies Private Limited, said, *“The support from TDB under the RDI Fund will help us advance our green propulsion technology through further development, integration and validation. Our objective is to develop a scalable propulsion platform that combines performance, reliability and cost efficiency while addressing the need for safer and more sustainable propellant systems. This partnership will support our efforts to take the technology towards TRL-9 and strengthen India’s indigenous space propulsion capabilities.”*



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