

India successfully tests hypersonic testing capability

February 11, 2024

Online Desk: In a major boost to India's space and defence sectors, the country's first Hypervelocity Expansion Tunnel Test Facility was successfully established and tested by the Indian Institute of Technology in Kanpur. With this, India joined a handful of countries possessing advanced hypersonic testing capability, the Science and Technology Ministry said in a recent statement.

The facility was developed by the Hypersonic Experimental Aerodynamics Laboratory at the Department of Aerospace Engineering of IIT, Kanpur, and is capable of generating flight speeds between 3-10 km/s, simulating the hypersonic condition.

Named S2, it was indigenously designed and developed and is a valuable test facility for ongoing missions of the Indian Space Research Organization and Defence Research Development Organization including human space programme Gaganyaan and hypersonic cruise missiles.

The facility consists of 4 major sections—free-piston driver, compression tube, shock /acceleration tube, and test section with a high vacuum system for generating and sustaining the hypersonic flow.

The establishment of such a facility will position India globally for advanced experimental hypersonic research, according to the Ministry statement. It is a major capacity boost for India's space and defence sectors and puts the country in a better position to develop advanced hypersonic technologies and systems fast-forwarding.