

DRDO inaugurates Quantum Technology Research Centre to further bolster indigenous quantum capabilities for strategic & defence applications

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Defence Research and Development Organisation (DRDO) inaugurated the Quantum Technology Research Centre (QTRC) at Metcalfe House, Delhi on May 27, 2025. The facility was inaugurated by Secretary, Department of Defence R&D and Chairman, DRDO Dr Samir V Kamat with the aim to further strengthen indigenous quantum capabilities for strategic and defence applications.

QTRC is equipped with state-of-the-art experimental set-ups designed to propel research and development in critical quantum domains. The key capabilities of this centre include Characterisation of Vertical-Cavity Surface-Emitting Lasers and Distributed Feedback Lasers; Test-beds for evaluating single-photon sources; Set-up for characterisation of Micro Fabricated Alkali Vapor Cell; and Experimental platforms for developing and validating Quantum Key Distribution techniques to enable ultra-secure communication and safeguard national security in the post-quantum era, spearheaded by Scientific Analysis Group (SAG), DRDO.

Spearheaded by Solid State Physics Laboratory (SSPL), QTRC also focuses on foundational technologies including an Ultra-Small Atomic Clock based on Coherent Population Trapping for highly precise timekeeping in Global Navigation Satellite System-denied environments, an Atomic Magnetometer using optically pumped magnetometry for ultra-sensitive magnetic field detection, and Cutting-edge solid-state quantum devices and materials.

DRDO continues to lead India's quantum initiatives across verticals such as quantum sensing, secure communications, and post-quantum cryptography. As a key stakeholder in the National Quantum Mission, DRDO is committed to fostering indigenous innovation and developing sovereign quantum technologies to secure India's strategic future.

The inauguration ceremony was graced by Director General (Micro Electronic Devices, Computational Systems & Cyber Systems) Smt Suma Varughese whose vision and leadership were instrumental in conceptualising this cutting-edge facility. DG (Resource & Management) Dr Manu Korulla and Directors of SSPL and SAG, senior scientists, and other dignitaries attended the function.

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