GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 2205
ANSWERED ON 12/03/2025

NATIONAL QUANTUM MISSION

2205. SHRI SRIBHARAT MATHUKUMILLI:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the progress achieved under the National Quantum Mission (NQM) since its approval including the details of funds released along with their utilization, State-wise;

(b) the total number of research papers published under the NQM in the field of Quantum Technology and the manner in which this compares with similar publications from the U.S., U.K. and China;

(c) whether the Government has signed any Memorandums of Understanding (MoUs) with other countries for collaboration in Quantum Technology research and development and if so, the details thereof; and

(d) whether the Government has any plans to ensure that India's critical database systems become quantum-safe and if so, the specific steps being undertaken to develop quantum-resilient encryption and cybersecurity frameworks?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES

(DR. JITENDRA SINGH)

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)

(डॉ. जितेंद्र सिंह)

(a) Department of Science and Technology is implementing the National Quantum Mission (NQM) approved by the Union Cabinet at an outlay of Rs. 6003.65 Crore for a period of 8 years. Under the Mission, four Thematic Hubs (T-Hubs), have been established in key technology

verticals of Quantum Computing, Quantum Communication, Quantum Sensing & Metrology and Quantum Materials & Devices. These Thematic Hubs consist of 14 Technical Groups, covering 17 states and 2 Union Territories. The activities undertaken by these hubs include, Technology Development, Human Resource Development, Entrepreneurship Development & Industry Collaborations and International Collaborations. State wise funds released during 2024-2025 is placed below:

S.no	State	Fund Released
1	Andhra Pradesh	Rs. 7,51,000
2	Assam	Rs. 6,92,800
3	Bihar	Rs. 14,61,240
4	Chhattisgarh	Rs. 14,16,000
5	Delhi	Rs. 2,48,43,970
6	Goa	Rs. 1,25,000
7	Gujarat	Rs. 3,82,560
8	Jammu & Kashmir	Rs. 1,00,000
9	Karnataka	Rs. 3,73,69,120
10	Kerala	Rs. 20,20,000
11	Madhya Pradesh	Rs. 38,09,090
12	Maharashtra	Rs. 3,34,21,220
13	Odisha	Rs. 11,57,600
14	Punjab	Rs. 24,25,000
15	Tamil Nadu	Rs. 1,73,74,980
16	Telangana	Rs. 39,18,900
17	Uttar Pradesh	Rs. 28,76,82,086
18	Uttarakhand	Rs. 38,19,300
19	West Bengal	Rs. 79,54,600

(b) As per the data received from Web of Science, the number of research papers published in the area of Quantum Science and Technology for the last five years is given below:

Publication Year	India	USA	United Kingdom	China
2019	222	755	465	750
2020	272	821	274	781
2021	378	931	452	822
2022	418	836	283	771
2023	596	755	305	889

(c) No Sir.

(d) Yes Sir, under NQM, dedicated efforts are being made to develop quantum-resilient encryption techniques and post-quantum cryptographic (PQC) frameworks to ensure India's critical database systems become quantum-safe. Some of these initiatives include:

i. **Development of a concept paper outlining the framework for establishing a Quantum-Safe Ecosystem in India. This paper focusses on defining the strategic roadmap for ensuring the security and resilience of digital infrastructure in the quantum era.**
ii. **The Defence Research and Development Organization (DRDO) is undertaking various projects on the design and security testing of quantum-resilient schemes, as well as quantum-safe symmetric and asymmetric key cryptographic algorithms.**
iii. **The Society for Electronic Transactions and Security (SETS) under the Office of Principal Scientific Adviser (PSA) has accelerated the work in Post Quantum Cryptography (PQC) by implementing PQC algorithms for various applications such as Fast IDentity Online (FIDO) token for authentication and Internet of Things applications.**
iv. **Centre for Development of Telematics (C-DoT) under Department of Telecommunication (DoT) has developed solutions for Quantum Key Distribution (QKD), Post Quantum Cryptography (PQC) and Quantum Secure Video IP Phone.**

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