



Episode 36 of 'Digital India - Ask Our Experts' Highlights India's Quantum Readiness and Future-Ready Cybersecurity

Organised in the backdrop of the International Year of Quantum Science and Technology

Senior Scientist from C-DAC Pune addresses citizens LIVE, busts key Quantum Security-related myths

Highlighted India's growing role in the global quantum ecosystem

New Delhi: As part of the ongoing Digital India - Ask Our Experts series, Episode 36 was conducted on '**Quantum Security for Every Citizen**', bringing complex concepts of quantum science and cybersecurity into simple, relatable language for the general public.

The episode was organised on December 19, 2025, in the backdrop of the **International Year of Quantum Science and Technology**, highlighting India's growing role in the global quantum ecosystem.

Dr. Anindita Banerjee, Senior Scientist, C-DAC Pune, was the expert who explained the fundamentals of quantum computing and how it differs from classical computers by leveraging quantum phenomena to perform certain computations significantly faster. While quantum computing holds immense potential for scientific advancement, the discussion also addressed concerns regarding its impact on existing encryption systems and why present-day cryptographic methods may become vulnerable in the future.

The session elaborated on fault-tolerant quantum computers, explaining how they are designed to function reliably despite errors inherent in quantum systems. A key highlight of the episode was the discussion on Quantum Key Distribution (QKD), a technology that enables secure communication by detecting any attempt at eavesdropping. Dr. Banerjee explained how QKD offers stronger security compared to traditional encryption methods. The importance of true randomness in cybersecurity was also discussed, along with an introduction to Quantum Random Number Generators (QRNGs), which generate randomness using quantum physical processes.

The episode also highlighted government initiatives in the quantum domain, including national programmes aimed at strengthening research, innovation, and indigenous technology

development. Key quantum technologies being developed by C-DAC were showcased through a video presentation, demonstrating India's growing technical capabilities in this strategic sector.

The session concluded with insights on industry readiness in India and how global industries are responding positively to the rapid progress of the Indian quantum ecosystem. The episode reinforced the message that quantum security is not just a future concept but a present-day preparation, essential for ensuring secure digital infrastructure for citizens, governments, and industries alike.

The live session saw active participation from citizens across the country, and the viewers appreciated the clarity and accessibility of the information shared by the experts. The full recording of Episode 36 is available at <https://youtube.com/live/DjfbUwKIkCw?feature=share>.

'Digital India - Ask Our Experts' is a flagship interactive initiative under Digital India that brings government specialists directly to citizens through live discussions, helping them understand and use digital public services with ease and confidence. It is streamed LIVE on Digital India's YouTube channel (<https://www.youtube.com/@DigitalIndiaofficial>).

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