

## A mega quantum technology mission is in the offing

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### **It is significant to satellites, military and cyber security as it promises fast computing and safe, unhackable communication**

India is set to enter the hotly pursued domain of quantum technologies in a big way with a new National Mission on Quantum Technologies, according to a senior official of the Department of Science and Technology.

This area is significant to satellites, military and cyber security among others as it promises unimaginably fast computing and safe, unhackable satellite communication to its users.

Worldwide, governments, information technology giants and scientists have made this their thrust area and have invested big money and efforts into it, said K.R. Murali Mohan, Head of DST's Interdisciplinary Cyber Physical Systems, New Delhi, in a recorded speech at an international scientific gathering at the Raman Research Institute here on Saturday.

Quantum technologies, he said, are strategically important and the inter-ministerial mission would involve 'sensitive' departments. China, the US and a few European countries are in the lead and India wants to join the scene in an era of highly damaging cyber attacks.

"The Government of India is also very much committed to developing these technologies. It is contemplating a National Mission on Quantum Technologies [by providing] huge investments through DST," he said, inviting Indian scientists to provide insights to a detailed project report that is being prepared.

About 18 months back, the government initiated serious discussions in quantum technologies and kick started research projects across 51 organisations under QUEST – Quantum Enabled Science and Technology.

### **'Not just research'**

Dr. Murali Mohan said, "The NMQT will be a bigger mission than that with huge investments and widespread applications. We are in the stage of developing a DPR and [issuing] a memo on

expenditure, finance and funding.” QT, he said, would not be just about research but aim to translate it into products and useful technologies.

The six-day meeting on ‘Quantum frontiers and fundamentals’ was hosted by the RRI’s Quantum lab, whose head Urbasi Sinha is leading highend work in quantum communication.

One of the world’s leading QT exponents, Jian-Wei Pan of the University of Science and Technology of China, told this newspaper that companies such as Google, Microsoft, Intel and IBM are intensely working on a ‘quantum computer’ that can crunch big data with ease: such a computer can crack 300-digit problems in seconds – while it would take today’s computers several thousand years to figure it out.

Other possibilities, he said, are precise time, position and magnetic field that will allow us to navigate without the GPS one day. “In future, this emerging area of QT can change information science as also our lives,” beyond what we can imagine now, he said.