

India bets big on quantum technology

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India's finance minister, Nirmala Sitharaman. Credit: Ramesh Pathania/Mint/Getty

Quantum technology has been given a massive boost in India's latest budget, receiving 80 billion rupees (US\$1.12 billion) over five years as part of a new national quantum mission.

India's considerable investment in the field places it alongside the United States, Europe and Russia. In December 2018, US President Donald Trump signed a bill to invest US\$1.2 billion over five years in a national quantum initiative, and in 2016, Europe pledged US\$1.13 billion for [quantum technologies](#). Russia is also spending the equivalent of [hundreds of millions of dollars on quantum technologies](#).

India's investment, to be administered by the ministry of science and technology, is a considerable increase on past commitments. In 2018, a quantum-technology research programme received US\$27.9 million over five years, as part of the National Mission on Interdisciplinary Cyber-Physical Systems.

Disruptive technologies

Ashutosh Sharma, secretary of the department of science and technology in Delhi, says India's quantum research is "solid on the theoretical side, but we need to build

infrastructure and experimental facilities, we need to build our capacity". The new mission will oversee the development of quantum technologies for communications, computing, materials development and cryptography. It will coordinate the work of scientists, industry leaders and government departments, says Sharma.

For a long time, the potential for quantum-related research was not really recognized in India, says Urbasi Sinha, a physicist at the Raman Research Institute, Bangalore, one of the earliest institutes in the country to undertake research in the field. "The funding boost now will ensure that India can make significant contributions in these disruptive technologies," she says.

Overall, India's science ministry, which oversees the department of science and technology; biotechnology; and scientific and industrial research, received 144 billion rupees in the 2020–21 budget, a 10.8% increase over promised funds in the 2019–20 budget.