

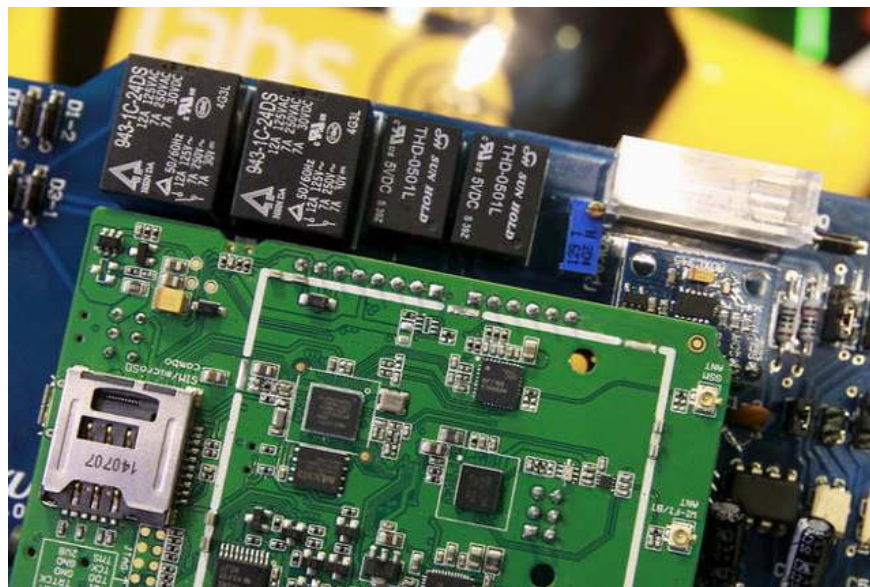
# New chip technology can enhance quantum computing

An international research group, including Chinese researchers, has demonstrated a large-scale integrated quantum optical circuit, which could pave the way for the production of giant components for a quantum computer. optics.

An international research group, including Chinese researchers, has demonstrated that it is possible to create a large-scale integrated quantum optical circuit that could pave the way for the production of giant components of a computer. Quantum optics.

According to a Bristol University study, integrated quantum optics allow routing and control of single light particles with extremely high stability and accuracy. However so far it has been limited to small-scale models, in which only a few components are integrated on one chip.

Xinhua said, scaling up these quantum circuits is an important optimization to increase the complexity and computational power of modern quantum information processing technologies. In this study, published in Science, the researchers integrated 550 optical components in a chip, allowing the integrated photonic chip to mount photons with incredible precision. This chip is made using silicon photonic technology, like modern electronic circuits.



The main author, Dr. Jianwei Wang, University of Bristol, said: *"Our quantum chips allow us to achieve unprecedented accuracy and control multidimensional entanglement (multidimensional entanglement), the key factor. in many quantum information tasks of computing and communications, the chip has set a new standard*

*for the complexity and accuracy of quantum optics, with immediate applications for quantum technology . "*

Qihuang Gong, a leading researcher at Peking University, said: *"The development of large-scale integrated quantum optical chips will provide an effective roadmap for future applications in the field of transmission, quantum information, quantum computing and many other fields "*.

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