

Oxfordshire: leading the way to a quantum future

Quantum is the next big tech
revolution, and Oxfordshire
is at the heart of it

- One of the world's largest centres for quantum science
- Home of the National Quantum Computing Centre
- Growing Quantum Cluster
- More than £150 million in quantum-related funding

Oxfordshire's quantum landscape

Quantum in the UK

The UK's £2.5 billion national quantum strategy will fund new frontiers of quantum research, and support and develop the growing quantum sector. The UK government has pledged to make this country the home for cutting-edge scientific breakthroughs, and the best place in the world to start and grow a quantum business.

In a market estimated to be worth \$10 billion globally within a few years:

- Oxford is one of the world's largest centres for quantum science, putting it on a par with other emerging ecosystems such as Quantum Valley in Canada, Munich Quantum Valley, Quantum Delft, and Chicago Quantum Exchange.
- The quantum sector in the UK has a turnover of £13 billion.

- The University of Oxford leads the Quantum Computing and Simulation Hub (QCS Hub), a collaboration of 17 universities supported by over 25 national and international commercial and governmental organisations.

UK National Quantum Computing Centre

The UK National Quantum Computing Centre (NQCC) at Harwell Campus is a £93 million project to create a flagship facility for harnessing the exciting potential of this technology.

Currently operational and due to fully open later in 2024, the Centre will provide space for over 120 researchers from academia, industry, government, quantum partner organisations and start-ups.

The NQCC is investing £30 million to commission the development of quantum computing testbeds (prototype quantum computers) in the UK, partnering with Innovate UK.

Oxford

Oxford University has a distinguished history in the field of quantum technology and quantum computing. There are 38 research groups and over 200 researchers involved in [Oxford Quantum](#) — the largest number of quantum science research group of all UK universities. This carries out work on fundamentals, materials and quantum technology, as well as initial work on applications of quantum computing to areas such as climate change, quantum chemistry and computational biology.

Harwell Campus

The growth of interest in Harwell's Quantum Cluster is making the campus the UK's top location for cultivating quantum-related enterprises with key organisations such as at [RAL Space](#), [STFC Cryogenics](#) and the [Central Laser Facility](#).

Quantum companies

There have already been several exciting spinouts from the University of Oxford:

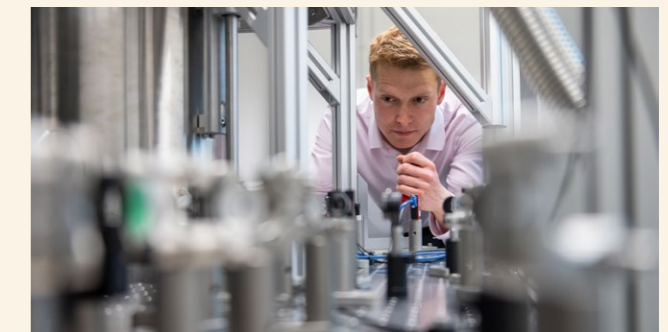


©Oxford Quantum Circuits

[Oxford Quantum Circuits](#) has delivered the UK's most advanced quantum computer. In 2023 it raised \$100 million Series B investment, the largest Series B investment so far achieved in the UK for a quantum company.

In 2023 [Quantum Dice](#), a spinout from the University of Oxford's quantum optics laboratory, unveiled the world's

fastest PCIe Quantum Random Number Generator. It also secured £2.09 million Innovate UK project funding to accelerate its development. It is based at the Oxford Centre for Innovation.



Oxford Ionics: John Cairns

[Oxford Ionics](#) aims to create the most powerful, accurate and reliable quantum computers that will transform the world of medicine, finance and much more. The start-up secured £2 million in funding from the UK's [National Security Strategic Investment Fund](#). In 2023 it raised £30 million in a Series A funding. In 2024 it won a £6 million contract to supply a quantum computer to the NQCC.

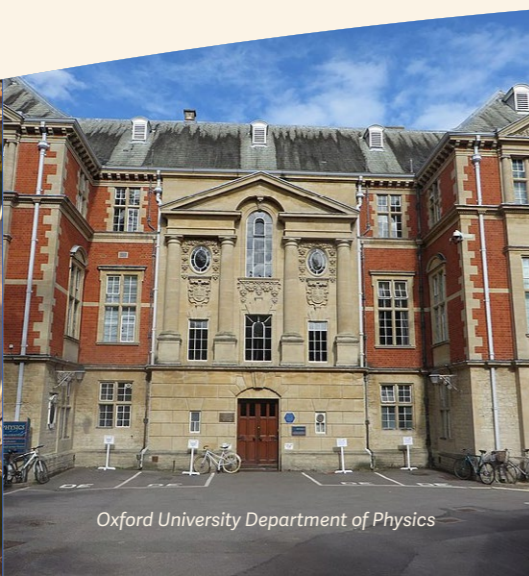
[ORCA Computing](#) spun out from the University of Oxford in 2019. Now with offices in Toronto, Krakow and Seattle, it develops full-stack photonic quantum computing systems for scientific and economic applications. It received a record £11.6 million Quantum Data Centre of the Future grant from the UK government.

A number of international quantum companies have an Oxford base:

[ColdQuanta](#) which is part of inflektion, a US firm, is bringing quantum closer to the user, enabling smaller, scalable devices. Its Oxfordshire base is at the [Oxford Technology Park](#) which is also the home of [Quantum Advanced Solutions](#) and [Oxford Ionics](#).

[Quantum Motion Technologies](#) is leveraging silicon to deliver scalable quantum computing. Based in Oxford and London, it raised £42 million in equity funding in 2023 from investors including Bosch Ventures and Porsche.

Diamond Light Source at Harwell Campus



Oxford University Department of Physics



UK National Quantum Computing Centre, Harwell

RIGETTI COMPUTING

The Californian-based tech company chose Abingdon as its base to build a UK-based quantum computer. Rigetti is leading a £10 million consortium comprising Oxford Instruments, quantum software start-up Phasecraft, the University of Edinburgh and Standard Chartered.

"By providing access to quantum hardware, the collaboration aims to unlock new capabilities within the thriving UK ecosystem of quantum information science researchers, start-ups, and enterprises." – Chad Rigetti, founder and CEO.



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Quantum's potential

The new generation of quantum computers could transform complex tasks and dramatically increase capabilities in fields from drug development to autonomous vehicles, space, robotics and climate change.

Quantum in numbers

\$2 trillion*

Gain that four sectors—chemicals, life sciences, finance, and mobility—are likely to see by 2035.

\$1.71 billion*

Amount invested in quantum start-ups globally in 2023.

\$18.3 billion**

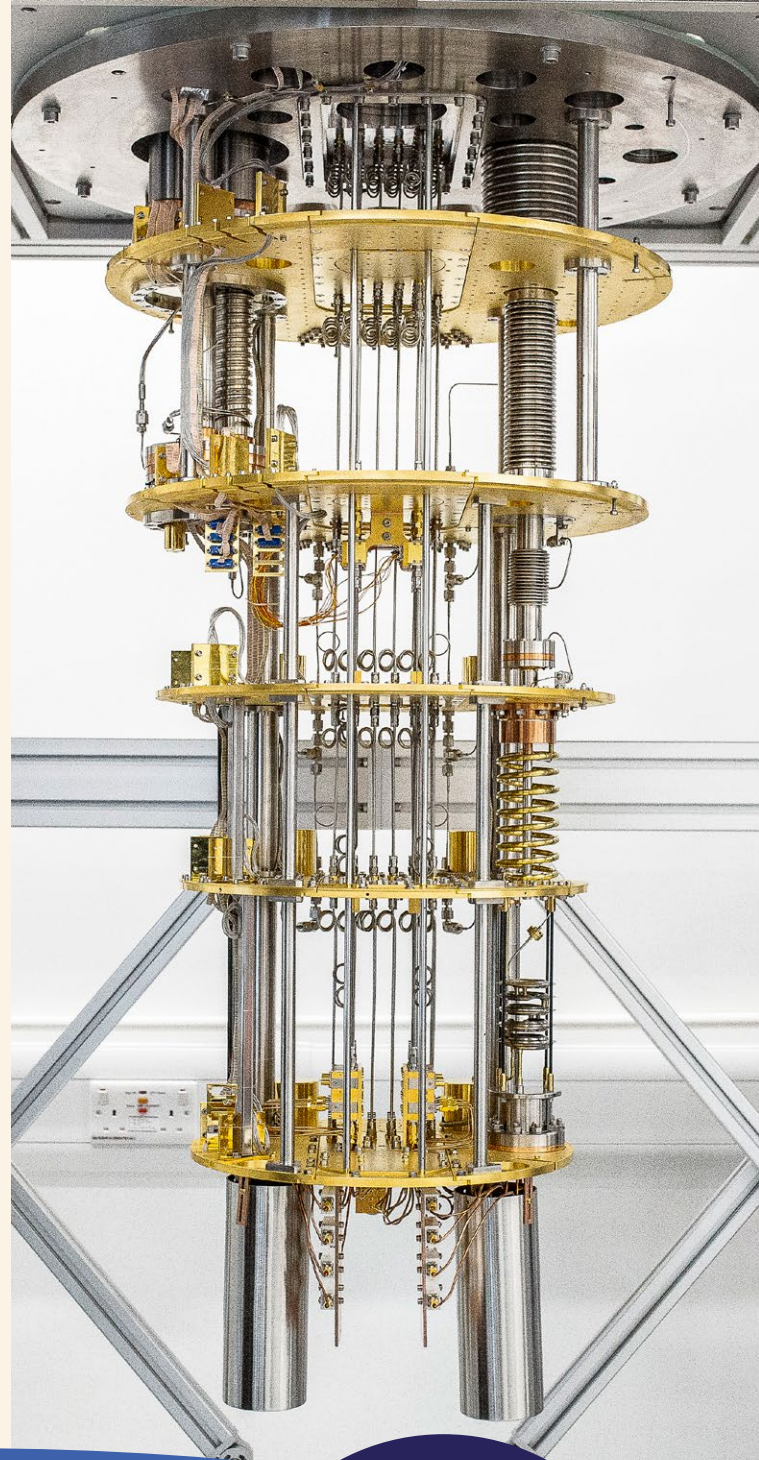
Total public investment committed to date by the US, the EU and China. The UK government is investing £2.5 billion in the sector over the next decade.

*Source: McKinsey

**Source: The Times

“Through our National Quantum Strategy, we have more than doubled our investment in quantum to £2.5bn over the next 10 years. This will ensure the UK’s lead in quantum translates through to a thriving, world-leading quantum industry.”

Michelle Donelan, Secretary of State for Science, Innovation and Technology, 2023.



Investor support

Learn more about investment opportunities in Oxfordshire

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