

# THE QUANTUM QUARTERLY

## Q3 2021

Welcome to the Quantum  
Quarterly Review.

Here we cover the biggest  
commercial news in the  
Quantum Computing industry  
over the last 3 months.

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THE QUANTUM QUARTERLY

# Q3 2021 IN BRIEF

There were no summer doldrums for quantum computing and quantum technology. The increased apprehension surrounding news about the Delta variant did not seem to slow down progress either.

Investor interest in quantum has continued unabated during Q3 2021. Funding from governments and other organizations has accelerated. And interesting quantum studies and papers continue to pour out of both university and corporate research centers.

One of the issues bubbling up in the quantum zeitgeist is the need for quantum technology to manage problems and seize opportunities that classical computers -- even supercomputers -- struggle to handle. We partnered on a documentary -- [Quantum Technology: Our Sustainable Future](#) -- that made the case for how quantum could play a role in creating solutions for climate change. Other voices in the community have raised concern that the promises of quantum computing and quantum technology, in general, are being overblown.



*Click this icon throughout this pres to see the full stories behind the brief*



THE QUANUM QUARTERLY

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# THE BIG NEWS



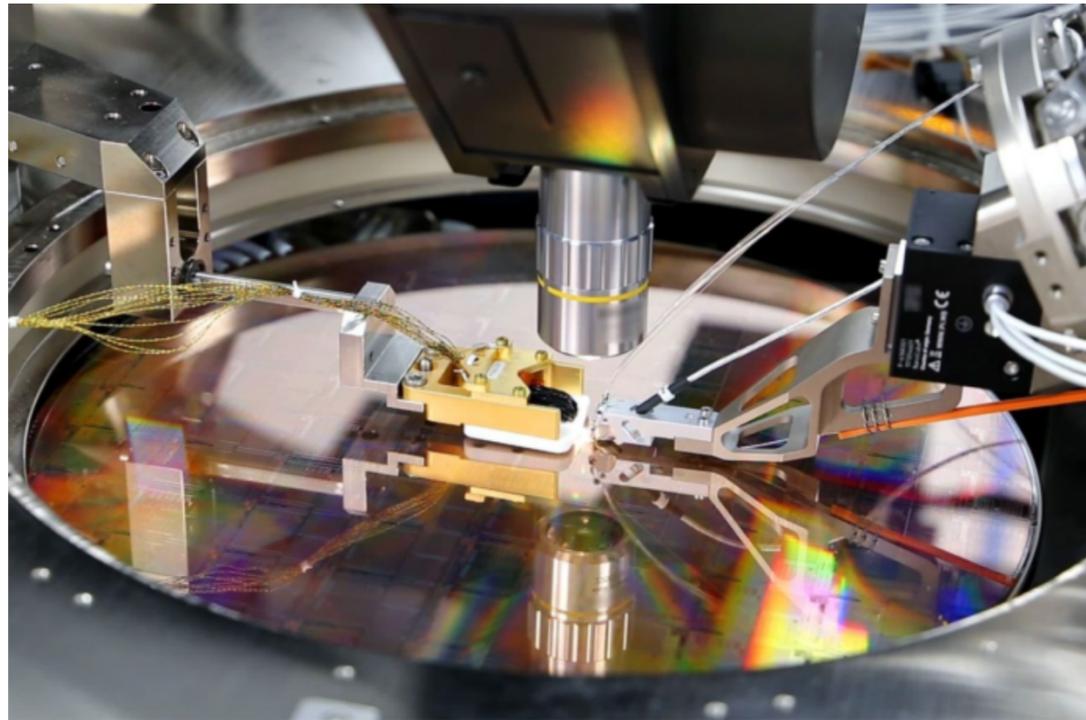
**QUANTUM MACHINES RAISES \$50  
MILLION IN SERIES B, PLANS TO  
MAKE QUANTUM COMPUTING  
"MORE ACCESSIBLE, MORE  
DISRUPTIVE"**



Quantum Machines, creator of the Quantum Orchestration Platform, announced that it has secured \$50 million in Series B funding to expand its growth into quantum cloud computing and drive its worldwide distribution. Red Dot Capital Partners led the round with the participation of Exor, Claridge Israel, Samsung NEXT, Valor Equity Partners, Atreides Management LP, and joined by TLV Partners, Battery Ventures, Altshuler Shaham as well as other existing investors.



## **BLACKROCK BACKS PSIQUANTUM IN \$450 MILLION SERIES D**



PsiQuantum raised \$450m in Series D funding in its latest round to build its commercial quantum computer. PsiQuantum, the Palo Alto, California-based company, uses a photonic approach to quantum computing. BlackRock led the latest financing round, with participation from insiders including Baillie Gifford, Quantum1 Group and M12 - Microsoft's venture fund - and new investors including Blackbird Ventures and Temasek.



## LONDON'S QUANTUM EXPONENTIAL LIMITED SET TO GO PUBLIC



Quantum Exponential Limited, a company formed to identify investment opportunities in the quantum technology sector, applied for admission of its ordinary shares to trading on the Aquis Stock Exchange Growth Market. The company is proposing to raise up to £5 million. Quantum Exponential recently completed a pre-IPO fund raising of £2.5 million and has already secured firm commitments of c £2.3 million, according to the company.



# ATOM COMPUTING TRIFECTA: PRODUCT LAUNCH, NEW CEO, NEW FUNDING



Atom Computing announced it closed \$15 million in Series A funding. The company also unveiled its first-generation quantum computing system, Phoenix, a 100-atom system showcasing its stability. The company announced that Rob Hays was appointed CEO, President and member of Atom Computing's Board of Directors.



## XANADU AWARDED DARPA GRANT TO DEVELOP QUANTUM COMPILER



Xanadu was awarded a Defense Advanced Research Projects Agency (DARPA) grant. The grant will enable Xanadu to develop a unique general-purpose “circuit-cutting” compiler which can automatically break down a circuit into a multi-circuit hybrid model—leveraging both classical and quantum computing—which will be ideal for near-term quantum computers.



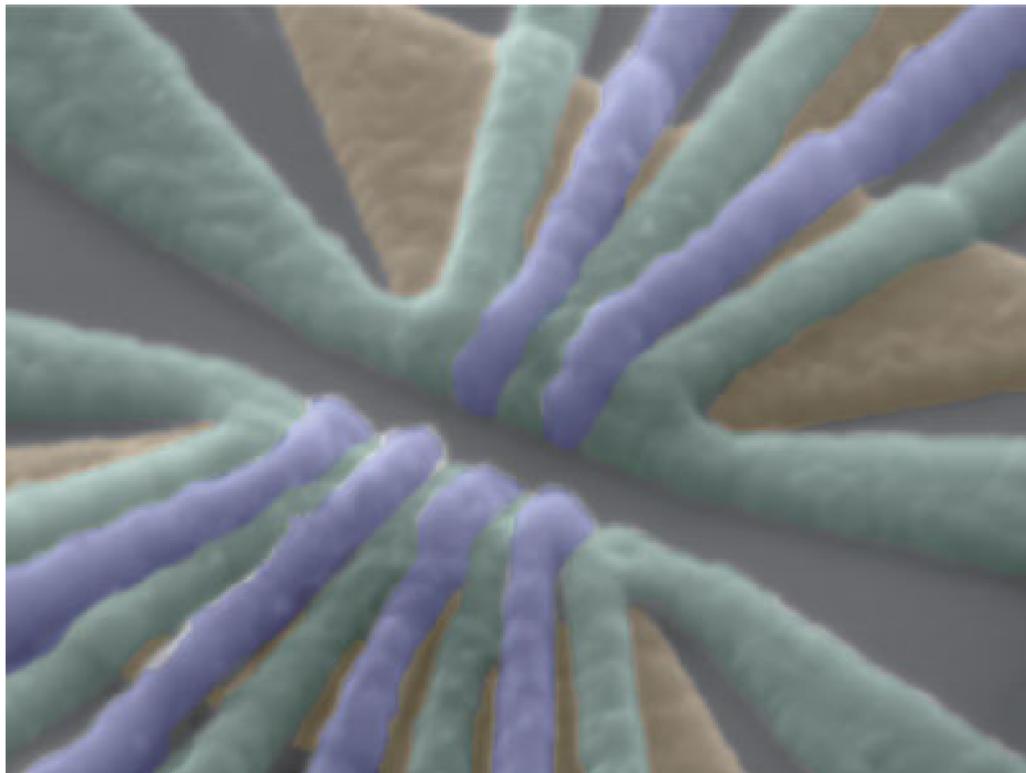
## **OQC DELIVERS THE UK'S FIRST QUANTUM COMPUTING AS-A-SERVICE**



Oxford Quantum Circuits (OQC) announced that the company has launched the nation's first commercially available Quantum Computing-as-a-Service built entirely using its proprietary technology. The announcement was considered a boost for the UK's quantum ambitions, as well as for businesses looking to explore the increasing commercial and technical benefits of quantum computing.



## RESEARCH: RIKEN SCIENTISTS ENTANGLE THREE SPIN QUBITS IN SILICON



An all-RIKEN team has increased the number of silicon-based spin qubits that can be entangled from two to three, highlighting the potential of spin qubits for realizing multi-qubit quantum algorithms. This demonstration is a first step toward extending the capabilities of quantum systems based on spin qubits.



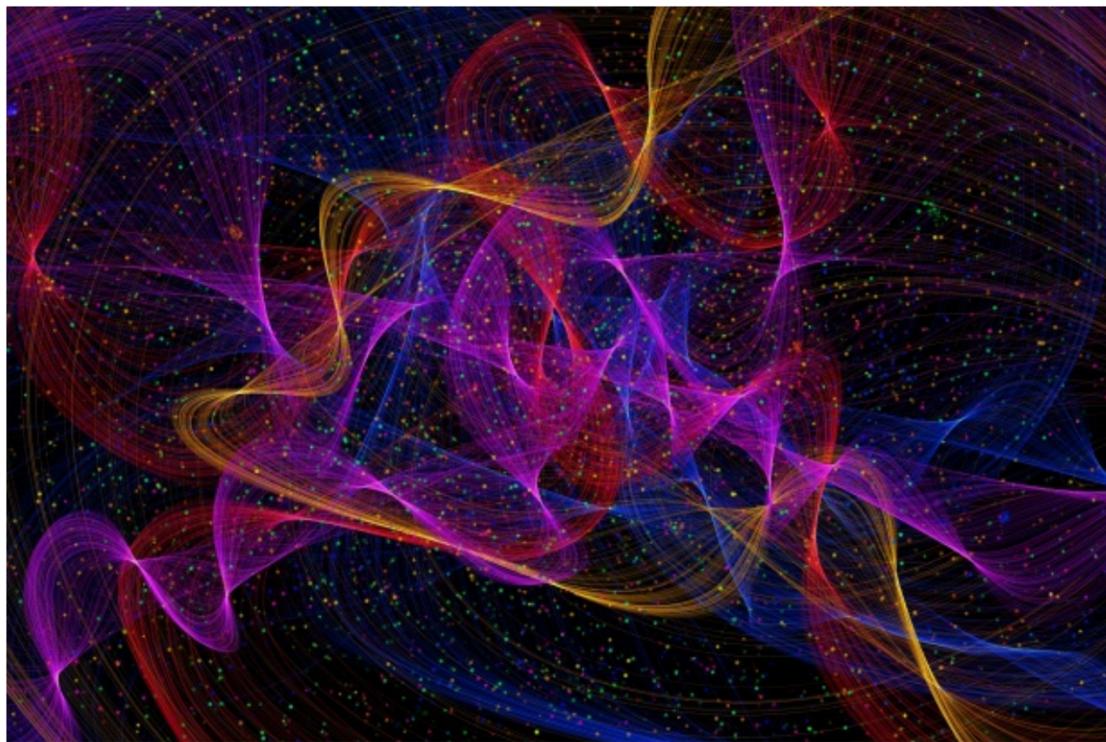
## RESEARCH: QUANTUM RADAR COULD END STEALTH ADVANTAGE



A new quantum radar technology developed by a team of Chinese researchers would be able to detect stealth planes. The radar technology generates a mini electromagnetic storm to detect objects. While traditional radars have on a fixed or rotating dish, the quantum design features a gun-shaped instrument that accelerates electrons.



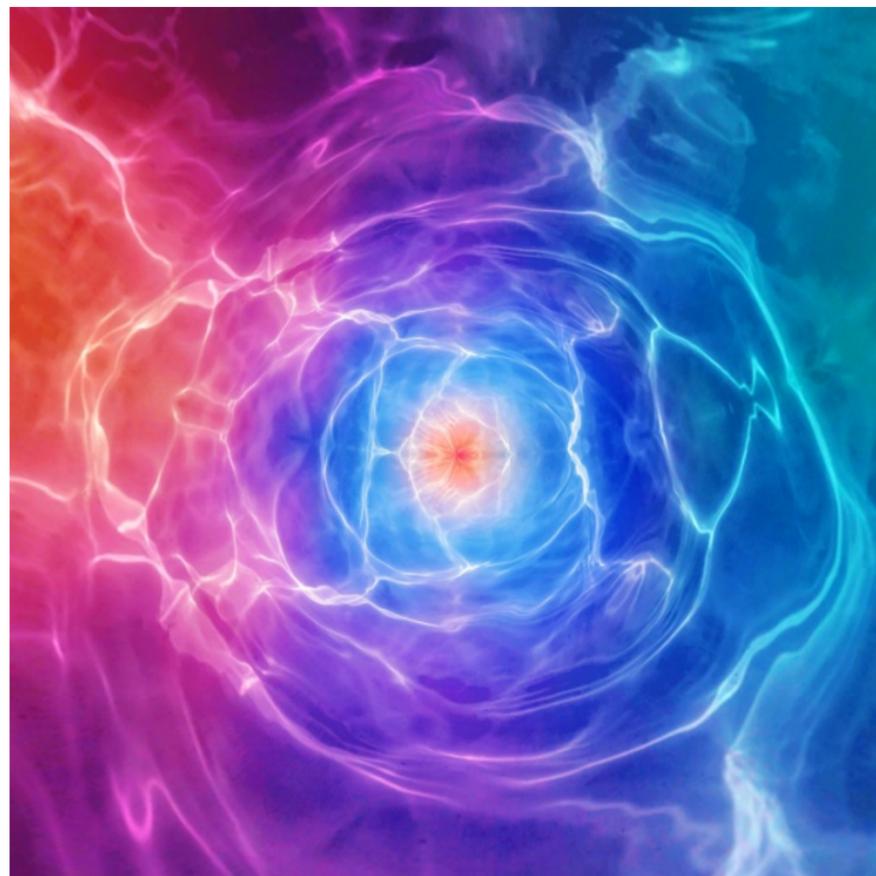
## RESEARCH: CQ SCIENTISTS LOOK TO SOLVE REAL- WORLD PROBLEMS



Cambridge Quantum continues to drive research toward bringing quantum computers into mainstream usage, this time publishing two studies aimed at allowing quantum computers in their current stage be used to solve difficult problems and complex calculations. One study focuses on Quantum Monte Carlo integration (QMCI) and the other looks at Quantum Amplitude Estimation (QAE).



## RESEARCH: DO AMD PATENTS SIGNAL A QUANTUM PROJECT?



Advanced Micro Devices — or AMD — is a Santa Clara, Calif.-based semiconductor company, that is a global leader in computer processors and related technologies. If recent patent applications are any indication, it's becoming more interested in applying that research and business acumen toward quantum technology. The company recently applied for two quantum related patents.

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# CAPITAL MARKETS

# \$1.0BN

of new private capital flowing into  
Quantum Technology companies in Q3

21

# \$2.4BN

Total private capital announced  
(including SPACs in 2021 YTD to Q3

21)

# FUNDRAISES IN THE QUARTER

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Companies	Latest Funded Date	Country	Total Disclosed Funding (USD)	More Info
 QC Ware	2021-09-21	United States	25,000,000	<a href="#">More Info</a>
 Quantum Machines	2021-09-11	Israel	50,000,000	<a href="#">More Info</a>
 Quantum Brilliance	2021-08-25	Australia	9,700,000	<a href="#">More Info</a>
 XtalPi	2021-08-13	United States	400,000,000	<a href="#">More Info</a>
 PolarisQb	2021-08-11	United States	2,000,000	<a href="#">More Info</a>
 KeeQuant	2021-08-01	Germany	1,760,355	<a href="#">More Info</a>
 PsiQuantum	2021-07-27	United States	450,000,000	<a href="#">More Info</a>
 Atom Computing	2021-07-21	United States	15,000,000	<a href="#">More Info</a>
 QuSecure	2021-07-21	United States	1,200,000	<a href="#">More Info</a>
 QuantWare	2021-07-15	Netherlands	1,150,000	<a href="#">More Info</a>
 Qu & Co	2021-07-01	Netherlands	-	<a href="#">More Info</a>

Extracts from  
The Quantum  
Insider



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Notes: All fundraises shown in \$m and converted at spot rate on the day of announcement \*Total Disclosed Funding is latest round

ABOUT TQD

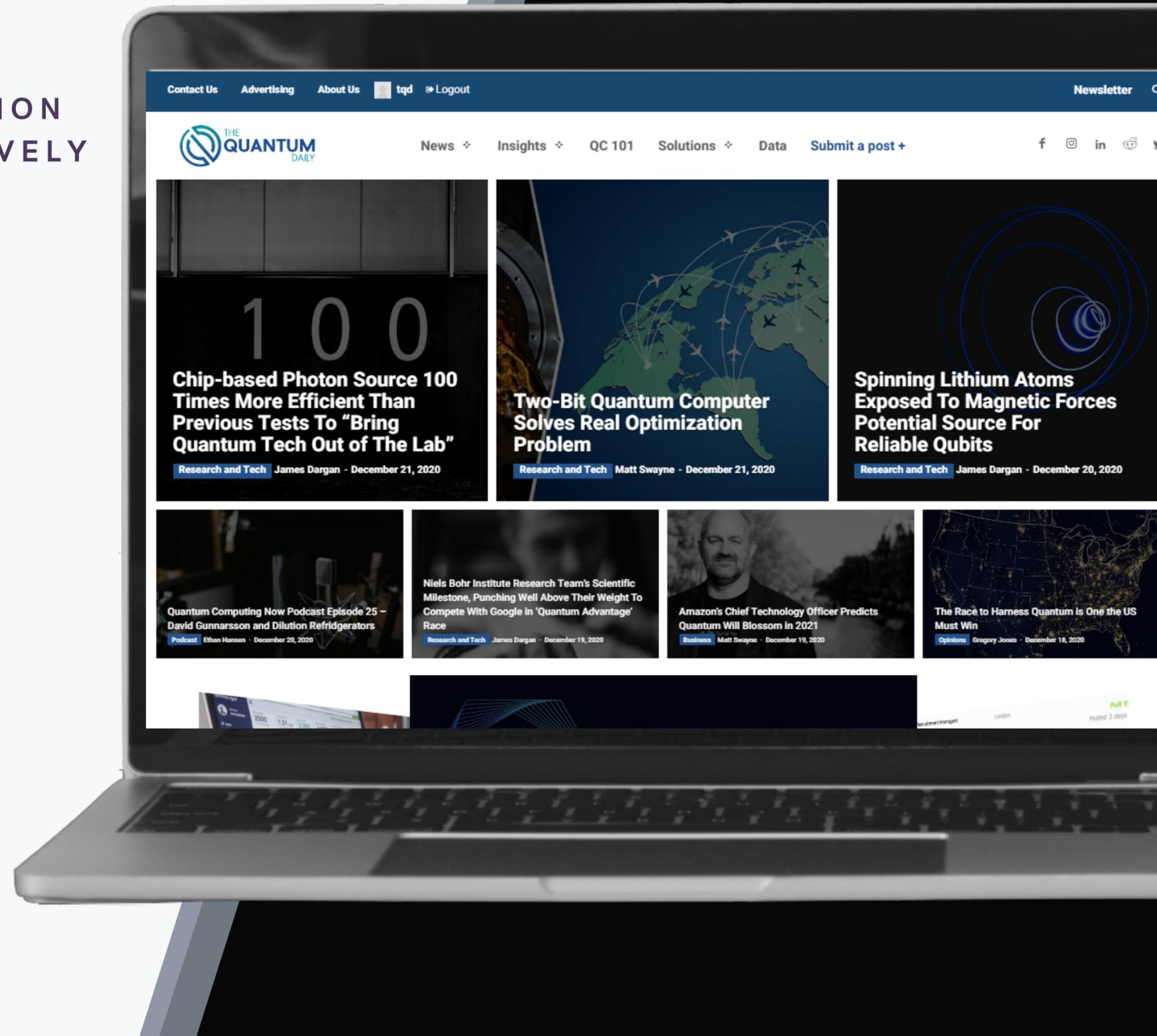


THE  
**QUANTUM**  
DAILY

# THE QUANTUM DAILY

IS THE WORLD'S FIRST DIGITAL INFORMATION AND DATA PLATFORM DEDICATED EXCLUSIVELY TO QUANTUM COMPUTING

- Leading provider of content and information on the Quantum Computing industry
- Focus on the commercial applications of the technology
- News, analysis, exclusive interviews, long-form reviews and data (see next page)



# THE QUANTUM INSIDER

## PRICE UPON REQUEST

- For Advertisers: Appear on our industry leading dataset being used daily by our community.
- For Companies: Map your market and competitors.
- For Investors: Complete industry map with key insights and subsectors profiling the various QC stakeholders and their technological developments all the way to capital market players and the investments they make.

The screenshot displays the website's layout. At the top, a dark blue header contains the site name 'THE QUANTUM INSIDER' on the left and navigation links 'Home', 'About', 'Access', 'Services', 'Contact', and a 'Login' button on the right. Below the header, the main content area features the title 'The Quantum Data Platform' in white, followed by the tagline 'The leading provider of information, data and insights on Quantum Technologies.' To the right is a stylized logo consisting of a hexagon formed by overlapping lines, with the text 'THE QUANTUM INSIDER' in teal and purple. Below the logo, it says 'POWERED BY' followed by a small circular icon. The lower section of the screenshot is titled 'ABOUT' and contains two columns of text. The left column describes the platform's data collection and lists four bullet points: 'Detailed data points on companies, investors, groups and more.', 'Custom taxonomy and unique descriptions.', 'Summary statistics.', and 'Proprietary linked data from The Quantum Daily interviews.' The right column explains the platform's utility for investors and corporations, ending with a 'Learn More' button.

THE QUANTUM INSIDER

Home About Access Services Contact Login

## The Quantum Data Platform

The leading provider of information, data and insights on Quantum Technologies.

THE QUANTUM INSIDER

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### ABOUT

The Quantum Insider collects data world wide on quantum technologies and codifies it into a user friendly platform.

- ✔ Detailed data points on companies, investors, groups and more.
- ✔ Custom taxonomy and unique descriptions.
- ✔ Summary statistics.
- ✔ Proprietary linked data from The Quantum Daily interviews.

The Quantum Insider helps investors, corporations, startups, accelerators, policy-makers and governments to understand the current state of world affairs in quantum technologies.

Learn More



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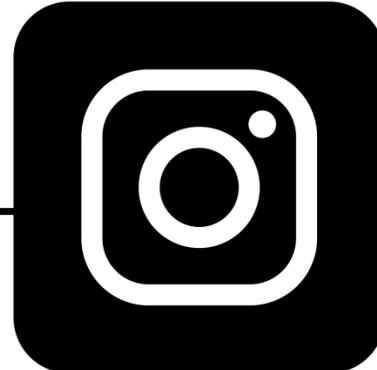
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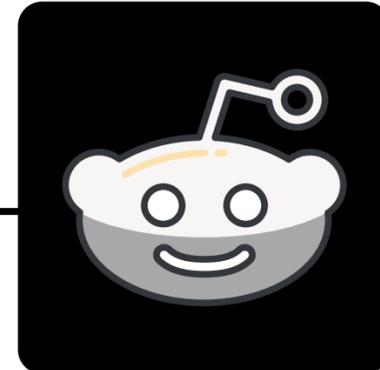
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## GET IN TOUCH

We would love to hear your feedback on our work.  
Please don't hesitate to contact us.

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