

# THE QUANTUM QUARTERLY

## Q2 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

# Q2 2021 IN BRIEF

2021 Q2 continued the explosive growth of the quantum technologies market in both size and momentum.

The SPAC trend shows that the industry is willing to try new ways to fund quantum ambitions, beyond the traditional government backing and venture capital routes. During this quarter, Arqit, which seems perched in the space and quantum cybersecurity, announced that it will be listed as a special purpose acquisition company, or SPAC. IonQ announced its SPAC in Q1

Venture capital funding for quantum is accelerating, with some deals reported in the nine-figure realm. Cambridge Quantum and Honeywell Quantum Solutions agreed to combined to build a leading full stack quantum computing player.

Quantum researchers continue to make sure and steady progress in terms of problems that face quantum, namely improving scalability and exploring use cases.



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THE QUANTUM QUARTERLY



# THE BIG NEWS



**HONEYWELL QUANTUM SOLUTIONS  
AND CAMBRIDGE QUANTUM  
COMPUTING WILL COMBINE “TO  
FORM WORLD’S LARGEST, MOST  
ADVANCED QUANTUM BUSINESS”**



Honeywell announced that Honeywell Quantum Solutions (HQS) and Cambridge Quantum Computing (CQC), two world-leading quantum computing and quantum technology businesses, will combine to form the largest, most advanced standalone quantum computing company in the world. After the transaction is complete, Honeywell will own a majority stake in the new company, with commensurate governance rights. In addition, Honeywell will invest between \$270 million and \$300 million.



## MORE SPACE FOR SPACS IN QUANTUM SPACE



UK-based Arqit Limited (“Arqit”), which focuses on quantum encryption technology, will become the second quantum startup to become publicly listed via a special purpose acquisition company, or SPAC, following an agreement with Centricus Acquisition Corp, according to a company statement. The deal is expected to raise \$400 million and implies a ~\$1.4 billion market cap, according to reports.



## A STATELY SERIES B: XANADU CLOSES \$100 MILLION FOR PHOTONIC QC

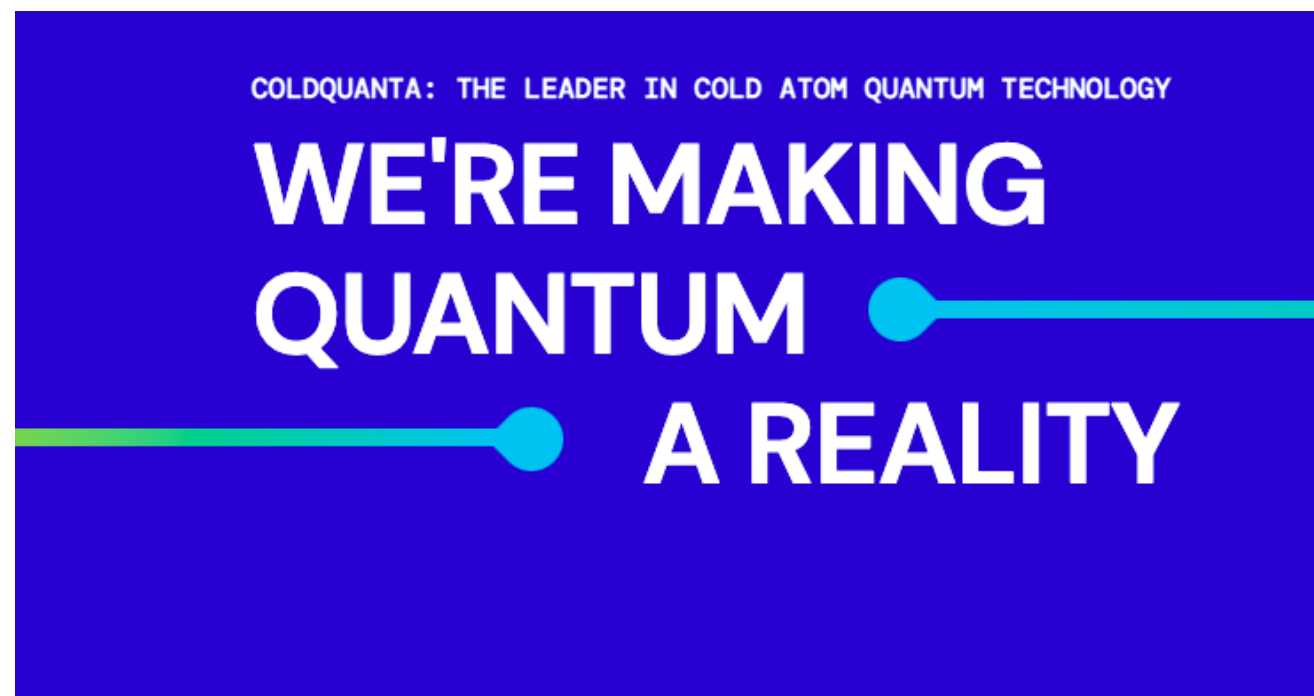


Xanadu, a photonic quantum computing company, announced it raised \$100 million USD in Series B financing. The round brings Xanadu's total investment to date to \$145 million USD. The deal was rumored to be in the works and suggested that the company valuation would be estimated to be around \$400 million USD. Bessemer Venture Partners led the round with participation from Capricorn, Tiger Global, BDC Capital, In-Q-Tel, along with returning investors Georgian, OMERS, and Tim Draper.





## COLDQUANTA'S COOL \$20 MILLION TOWARD SERIES B



ColdQuanta secured \$20 million in funding from existing investors. The investment will be used to rapidly accelerate the commercialization of the company's Cold Atom Quantum Technology, in parallel with the company's Series B funding raise.

This investment brings ColdQuanta's total funding to \$74 million.



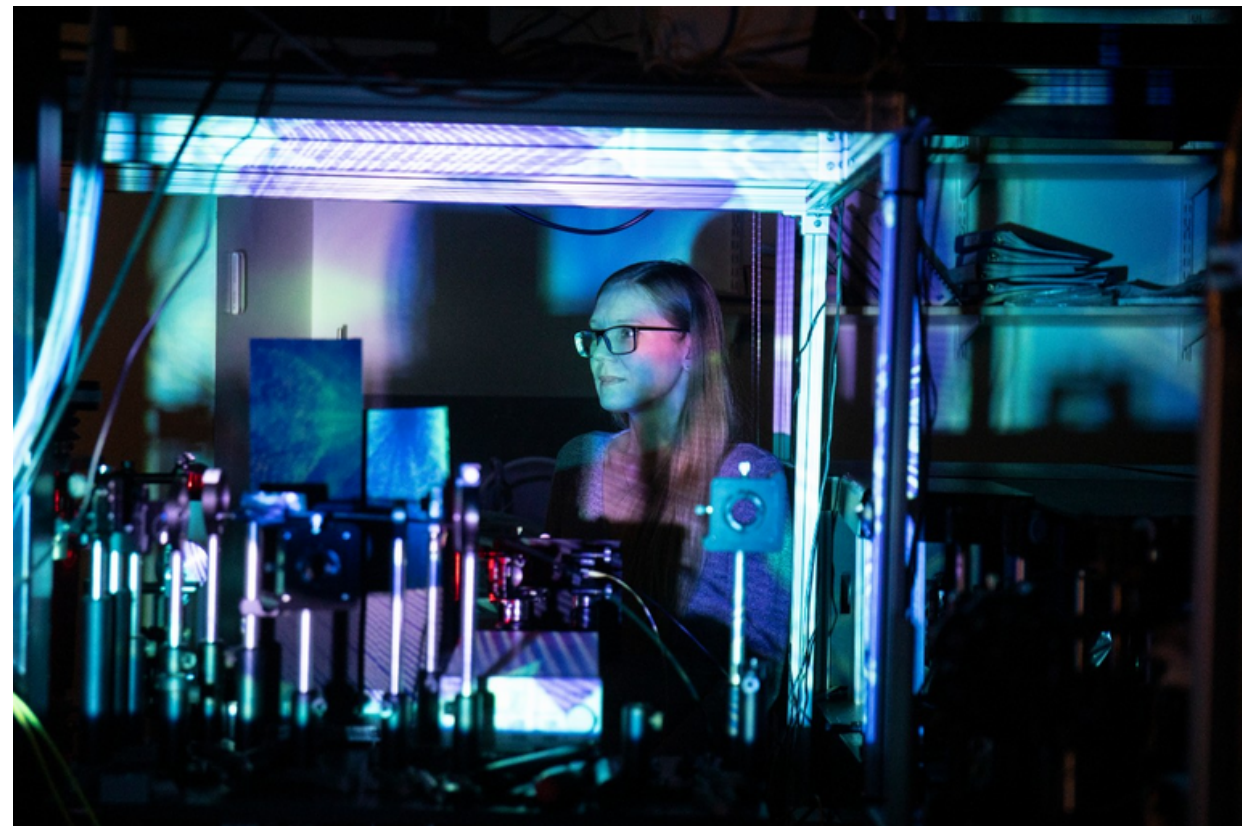
## **UNDER THE QUANTUM MICROSCOPE: SWISS-BASED QNAMI CLOSES 4 MILLION CHF SERIES A**



Qnami closed a 4.0M CHF (4.4M million USD) Series A financing round. The funds will support extension of Qnami's patented quantum microscope technology into applications enabling the design and production of quantum computers and spintronics devices, plus scaling the launch of the Qnami ProteusQ™, the first commercial Quantum Microscope.



## THE SKILL OF THE IRISH: IRELAND LAUNCHES QUANTUM CENTRE



Ireland will be home to a multi-million-euro quantum center with 900 square meters of research space and 45 new jobs dedicated to quantum research at the Tyndall National Institute. The research space dedicated to quantum technology will be based at Tyndall's new facility on Cork's North Mall and will be a key part of the Institute's plans to double in size and impact



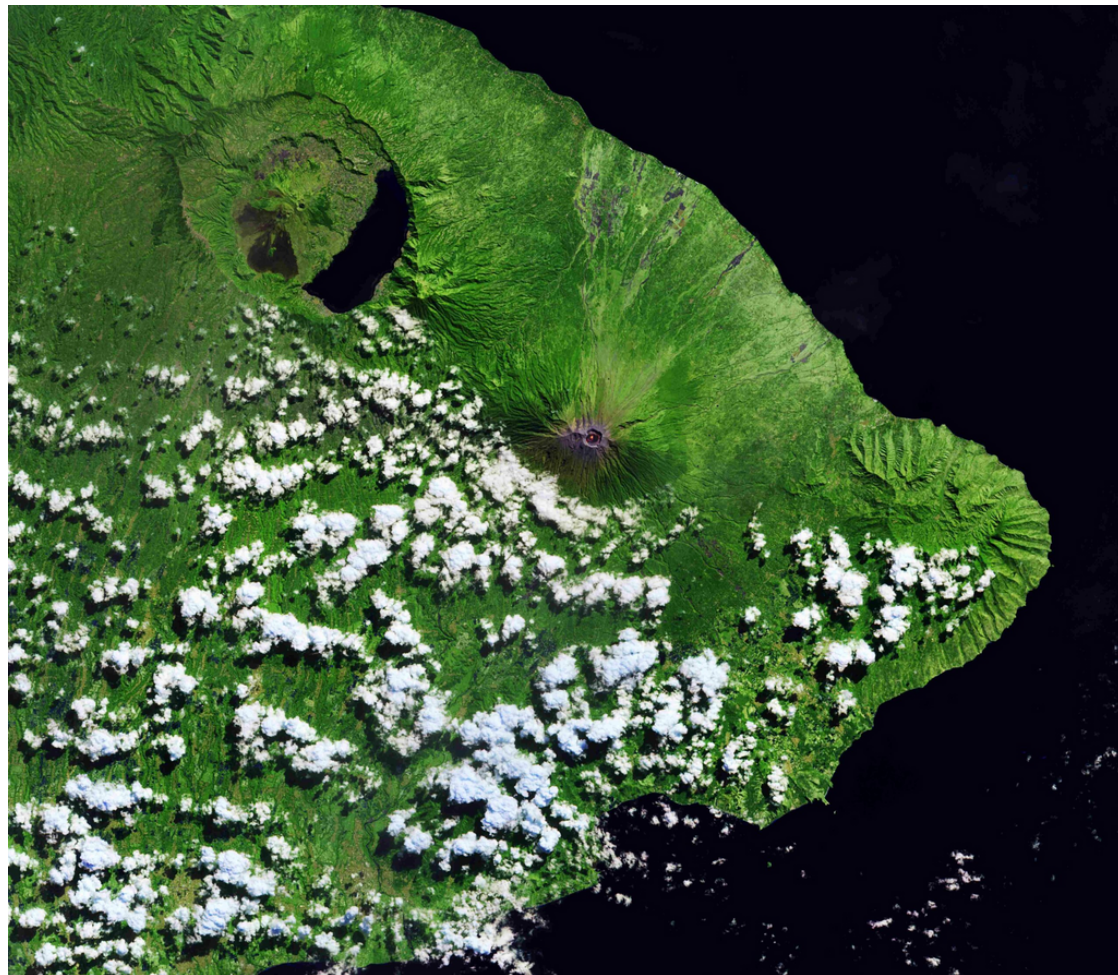
## RESEARCH: MONTE CARLO INTEGRATION



Cambridge Quantum researchers announced the discovery of a new algorithm that accelerates quantum Monte Carlo integration – shortening the time to quantum advantage. Monte Carlo integration – the process of numerically estimating the mean of a probability distribution by averaging samples – is used in numerous applications, but often requires many hours of continuous computation by today's systems to complete.



## RESEARCH: SIFTING THROUGH THE CLOUDS



A group of Polish interdisciplinary researchers will study the usefulness of quantum algorithms in detecting clouds from multi- and hyperspectral satellite imagery. A team of five from both startups will conduct modeling techniques of the Quantum Support Vector Machine – QSVM algorithm in the IBM cloud-based superconducting quantum computer.



## RESEARCH: LIMITS TO QUANTUM MACHINE LEARNING?



A paper, Barren plateaus preclude learning scramblers, presents a new theorem from the field of quantum machine learning (QML) that criticizes the general understanding of information scrambling. The research was published in Physical Review Letters with funding coming from the U.S. Department of Energy, Office of Science.



## RESEARCH: MORE STABLE SOLAR THROUGH QM



University of Gothenburg researchers report quantum mechanics may help create more stable and more easily produced organic solar cells. In comparison to traditional silicon-based solar cells, organic solar cells hold many advantages like their cost-effectiveness at a large scale by using printing presses, they are light, flexible, as well as malleable.

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# CAPITAL MARKETS

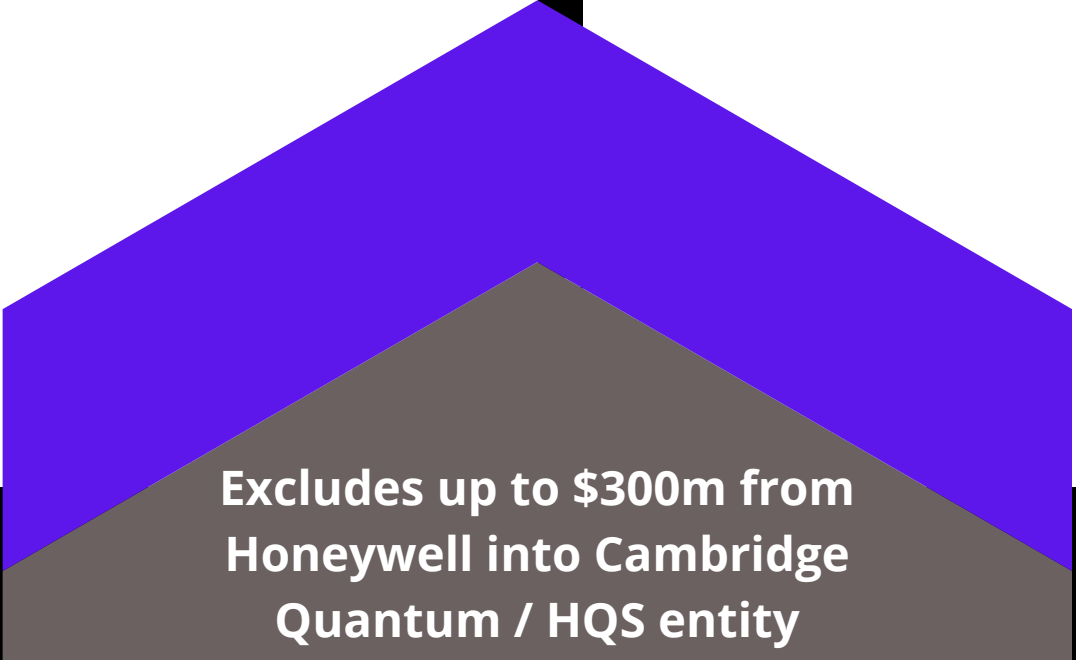


# \$0.6BN

of new private capital flowing into  
Quantum Technology companies in Q2  
21

# \$1.3BN











Total private capital announced  
(including SPACs in 2021 YTD)



Excludes up to \$300m from  
Honeywell into Cambridge  
Quantum / HQS entity

# FUNDRAISES IN THE QUARTER

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Logos	Companies	Latest Funding Date	Country	Total Disclosed Funding (USD)	More Info
	C12 Quantum Electronics	2021-06-08	France	10,000,000	<a href="#">More Info</a>
	KETS Quantum Security	2021-06-08	United Kingdom	3,782,000	<a href="#">More Info</a>
	PASQAL	2021-06-08	France	30,500,000	<a href="#">More Info</a>
	Agnostiq	2021-05-13	Canada	2,000,000	<a href="#">More Info</a>
	TuringQ	2021-05-13	China	15,534,945	<a href="#">More Info</a>
	ArQit	2021-05-12	United Kingdom	400,000,000	<a href="#">More Info</a>
	ColdQuanta	2021-05-12	United States	20,000,000	<a href="#">More Info</a>
	Qnami	2021-05-11	Switzerland	4,400,000	<a href="#">More Info</a>
	QphoX	2021-05-11	Netherlands	2,433,700	<a href="#">More Info</a>
	Xanadu	2021-05-10	Canada	100,000,000	<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 \*In latest round

ABOUT TQD

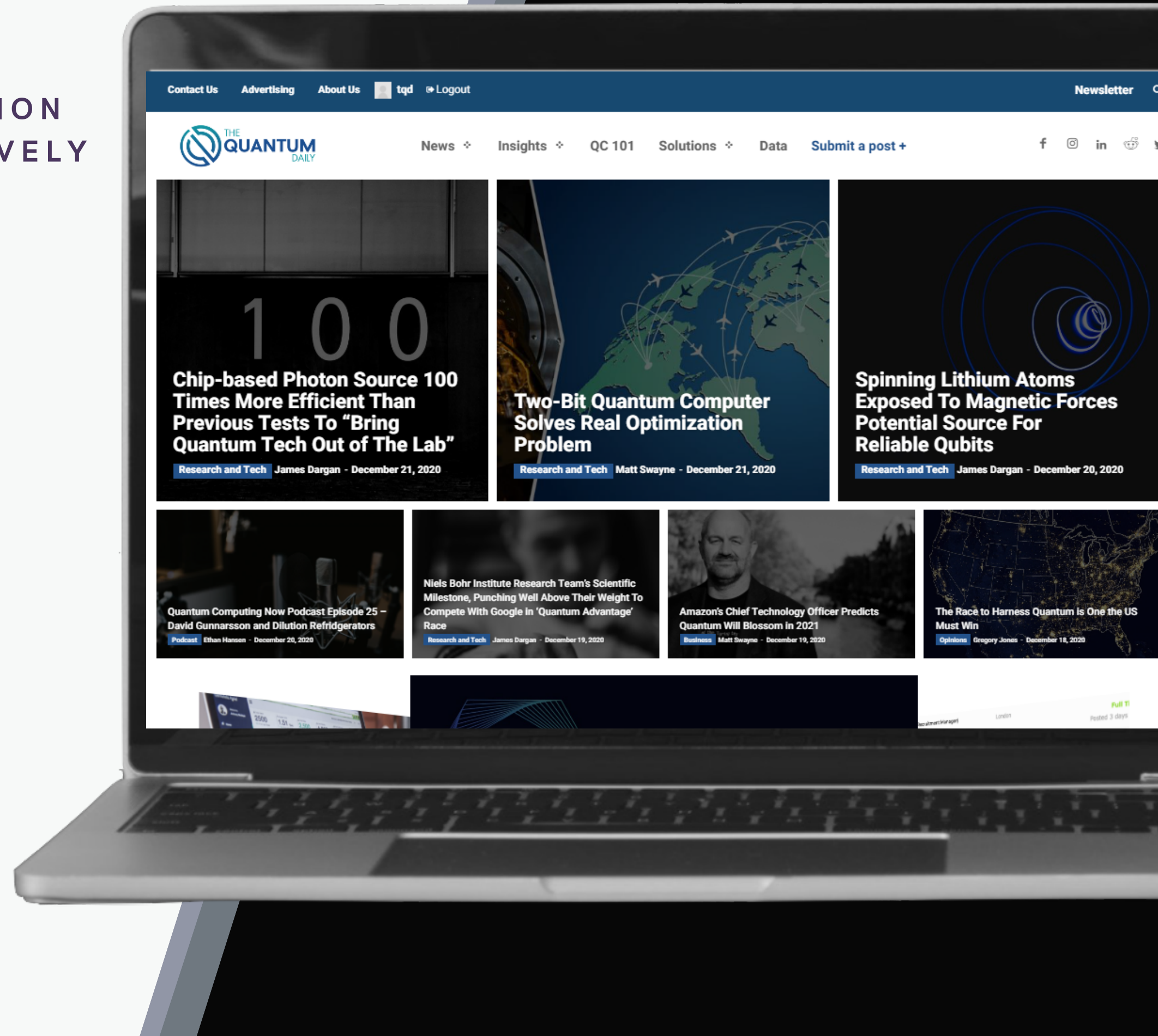


THE  
**QUANTUM**  
DAILY

# 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

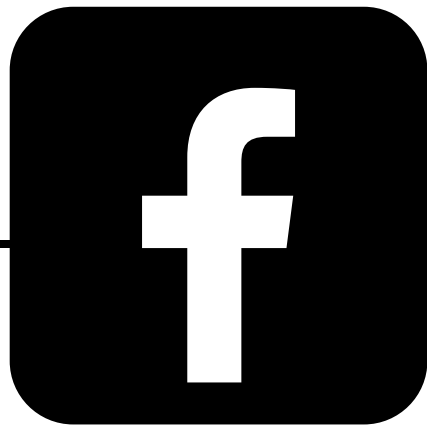
## PRICE UPON REQUEST

- 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 interface. At the top, a dark blue navigation bar contains the site name 'THE QUANTUM INSIDER' on the left and a menu with 'Home', 'About', 'Access', 'Services', 'Contact', and a 'Login' button on the right. The main content area features a large blue header with the text 'The Quantum Data Platform' and a sub-headline 'The leading provider of information, data and insights on Quantum Technologies.' To the right of this text is a stylized geometric logo consisting of overlapping lines forming a hexagonal shape, with the words 'THE QUANTUM INSIDER' in a bold, sans-serif font. Below the logo, it says 'POWERED BY' followed by a small circular icon. The lower section of the screenshot is titled 'ABOUT' and is divided into two columns. The left column contains a paragraph: 'The Quantum Insider collects data world wide on quantum technologies and codifies it into a user friendly platform.' followed by a bulleted list of features: '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 contains a paragraph: 'The Quantum Insider helps investors, corporations, startups, accelerators, policy-makers and governments to understand the current state of world affairs in quantum technologies.' and a 'Learn More' button.



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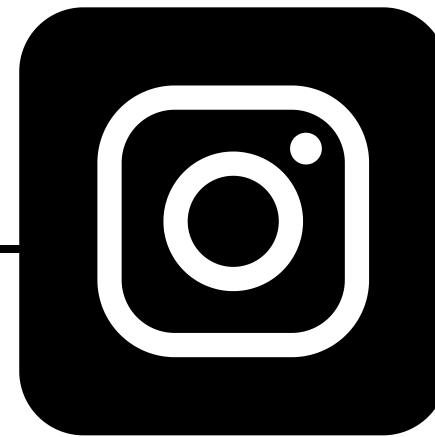
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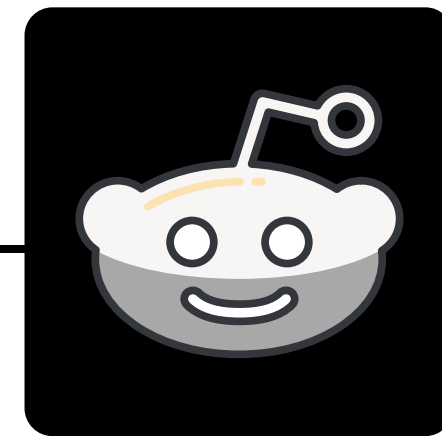
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