

C O N T E N T S

Today's Three Things

Hardware Frontiers

Algorithms & Software

Industry & Ecosystem

Research Frontiers

Today's Impact

Editor's Note

Items	59
Sources	13
Reading time	~25 min read

C U R R E N T S O T A

Physical qubits	1,180
2Q fidelity	99.99%
Logical qubits	96 LQ

[Quantum hardware SOTA table](#)

→

Aug 7, 2026 – Aug 8 · Daily Brief

D-Wave Q2 orders surge but revenue remains flat

59 items · 13 sources | [PDF](#) |

This issue's roundup is free

01 Highlights

Today's Three Things



1 D-Wave Q2 orders surge but revenue flat

Bookings grew significantly, but quarterly revenue remained flat due to system sales timing ^[1] — Commercial breakout still awaits deployment cadence to catch up with orders.

2 Rigetti revenue up 185% YoY and secures \$100M CHIPS Act letter of intent

Superconducting quantum computing company Rigetti reported strong Q2 revenue growth, received a potential \$100M U.S. government grant, and partnered with HPE to

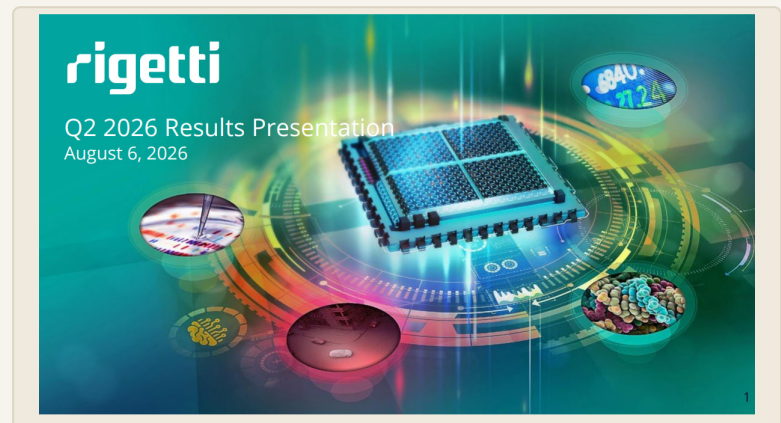
deploy hybrid high-performance computing [6]

— — Dual drivers of government funding and industry partnerships, but the technology roadmap still faces the error-correction threshold.

- 3 **IonQ营收飙升287%至8010万美元，上调全年指引至2.9亿** 离子阱领军者IonQ连续五季度创纪录，受益于Tempo系统全球部署和云使用加速，并完成对SkyWater的收购 [32] — — Revenue scale ranks among the top listed quantum computing companies, but profitability remains to be validated.

02 Hardware

Hardware Frontiers



Superconducting Quantum Computing

Rigetti Q2 revenue up 185% YoY, secures \$100M CHIPS Act letter of intent [6]

- 事实：Rigetti Computing (Nasdaq: RGTI) 报告截至Jun 30, 2026的第二季度财务业绩，营收同

比增长185%，并宣布获得一份潜在1亿美元的CHIPS法案美国政府资助意向书 (LOI)，同时与HPE合作扩展混合高性能计算 (HPC) 部署 [6]。

- 技术含义：Rigetti的超导量子处理器Cepheus-1拥有108个量子比特，双比特门保真度中位约99.5% [SOTA基线]，处于超导路线生产级系统中游水平，但距离规模化容错所需的保真度裕度仍有差距；CHIPS法案资金若落实，将加速其硬件迭代。
- Landscape impact: Direct U.S. government capital injection into quantum computing hardware vendors strengthens the domestic supply chain; Rigetti's hybrid HPC collaboration with HPE may drive early adoption of quantum-classical heterogeneous computing in industrial scenarios, but the superconducting approach faces competitive pressure from trapped ions and neutral atoms on logical qubits.

D-Wave Q2 orders surge, but revenue flat [1]

(Continued from Aug 6 report, adding financial details)

- Facts: D-Wave Quantum Inc. reported Q2 2026 earnings, with bookings growing significantly year-over-year and long-term commitments accelerating, but quarterly revenue remained flat due to system sales timing [1]。
- Technical implications: D-Wave's quantum annealing systems continue to demonstrate commercial value on optimization problems,

but general-purpose quantum computing capability remains limited; its recent acquisition of Quantum Circuits aims to expand gate-model capabilities [1].

- Landscape impact: The surge in orders indicates real enterprise customer demand for quantum computing, but the lag in revenue conversion reflects challenges in hardware delivery cycles and customer deployment cadence; investors need to watch whether subsequent quarter revenue can match the pace of order growth.

Trapped-Ion Quantum Computing

IonQ Q2营收287%增长至8010万美元，全年指引上调至2.9亿 [32]

- 事实：IonQ (NYSE: IONQ) 报告Q2营收8010万美元，同比增长287%，连续第五个季度创纪录，并将全年营收指引上调至2.9亿美元；增长驱动包括Tempo系统全球部署、云使用加速及收购SkyWater Technology [32].
- 技术含义：IonQ的离子阱系统保真度领先，其EQC原型曾展示99.99%双比特门保真度（单对口径）[SOTA基线]，但系统规模（物理量子比特数）仍远小于中性原子阵列；营收增长部分来自政府合同和云服务，硬件销售占比需厘清。
- 格局影响：IonQ成为量子计算上市公司中营收最高者，但高增长伴随高投入，盈利能力仍是关注点；收购SkyWater可能强化其垂直整合，但离子

阱扩展性瓶颈（离子输运开销、重复率）尚未突破。

Diamond NV Centers

SAXON Q opens orders for 128- and 512-qubit room-temperature NV-center quantum computers ^[57]

- Facts: SAXON Q announced commercial order availability for its SXQ128 and SXQ512 quantum computers, aggregating 128 and 512 qubits respectively, claimed to be the first diamond-based nitrogen-vacancy (NV) center systems exceeding 10 qubits, operating at room temperature without cryogenic infrastructure ^[57].
- 技术含义：NV中心路线在室温操作上具独特优势，但当前NV中心量子比特的保真度和相干时间远落后于主流路线（超导/离子阱）；SAXON Q未披露具体门保真度，其宣称的512量子比特规模若为物理比特，则逻辑能力存疑；对照光子路线SOTA（PsiQuantum Omega组件保真度>99%），NV centers are still at an early stage.
- Landscape impact: Room-temperature quantum computing, if it achieves practical-level fidelity, would disrupt cooling requirements, but SAXON Q's technology maturity needs validation; its systems may attract cost-sensitive edge computing scenarios, but are unlikely to challenge cryogenic platforms in the near term.

Other Frontier Approaches

UCLA-led consortium receives \$4M NSF grant to develop 60-logical-qubit trapped-ion architecture ^[4]

- Facts: A multidisciplinary team led by UCLA received a \$4M grant from the U.S. National Science Foundation (NSF) through the NSF National Quantum Virtual Laboratory (NQVL) program, supporting a newly established project aiming to build a 60-logical-qubit trapped-ion architecture ^[4]. The architecture will adopt integrated-photonics surface ion traps.
- 技术含义：60逻辑量子比特规模在当前离子阱路线中属中等偏上（Quantinuum Helios已演示48全纠错逻辑量子比特，2:1编码比 [SOTA基线]），但该项目侧重集成光子学，可能提升可扩展性；距离实用化仍差逻辑门保真度、错误率及大规模集成。
- Landscape impact: NSF continues to invest in quantum hardware R&D, strengthening the U.S. academic foundation in the trapped-ion approach; if successful, the UCLA project may drive standardization of integrated photonics in trapped ions, but the commercialization timescale is 5+ years.

Imperial College engineers build reconfigurable photonic quantum chip Clavina ^[12]

- Facts: Imperial College engineers unveiled Clavina, a novel photonic quantum computing architecture that combines linear and nonlinear operations on a single chip, achieving reconfigurability ^[12].
- 技术含义：光子量子计算中，可重构性对于通用操作至关重要；Clavina架构可能简化光量子线路的编译，但未披露具体性能指标（如损耗、保真度），对照光子路线SOTA（PsiQuantum组件保真度>99%), its practicality awaits validation.
- 格局影响：学术创新为光子路线提供新架构选项，但产业落地需克服制造和集成挑战；可能影响PsiQuantum、Xanadu等公司的技术路径选择。

03 Algorithms

Algorithms & Software



Quantum Error Correction and Compilation

IonQ quantum LDPC codes achieve 3x acceleration in joint logical measurements [16]

- Facts: Researchers proposed a method using cat states and scheduler codes to implement joint measurements of commuting logical operators on quantum low-density parity-check (LDPC) codes, claiming a nearly 3× speedup over standard methods [16].
- Technical implications: LDPC codes can drastically reduce qubit overhead in fault-tolerant quantum computing due to high encoding rates, but operating on multiple logical qubits is challenging; this work improves the practicality of LDPC codes through better joint measurements, but still lacks hardware demonstration for real-time fault tolerance.
- 格局影响: 若LDPC码在硬件上验证, 可能改变容错架构设计, 影响IBM、Google等超导路线和Quantinuum等离子阱路线的纠错策略; 但短期内表面码仍是主流。

QAOA compilation optimization: graph sparsification and decomposition reduce noise, targeting trapped-ion compilation [39]

- Facts: A research team developed a new approximate compilation scheme that significantly reduces the overhead of compiling the Quantum Approximate Optimization Algorithm (QAOA) for solving Max-Cut

problems on trapped-ion simulators, using graph sparsification and decomposition techniques [39].

- Technical implications: QAOA performance on noisy intermediate-scale quantum (NISQ) devices is limited by compilation overhead; this work optimizes for trapped-ion hardware characteristics and may improve the quality of optimization problem solving on current devices, but does not demonstrate advantages on logical qubits.
- Landscape impact: In the short term, it enhances NISQ application potential and may affect competition in the optimization market for D-Wave (quantum annealing) and trapped-ion companies; in the long term, if combined with error correction, it may accelerate practical quantum optimization.

QC Ware演示混合量子-经典化学 workflows, 使用 Promethium 平台和 IBM 量子硬件 [7]

- 事实: 量子软件提供商 QC Ware 完成技术演示, 使用其 Promethium® 平台和 IBM Quantum 硬件, 计算一氧化氮还原酶的静电相互作用能——一种与药物发现相关的复杂金属酶系统 [7].
- Technical implications: This work validates the feasibility of hybrid quantum-classical methods on real chemical systems, but computational accuracy and quantum resource requirements were not disclosed; compared to classical

methods, quantum advantage has not yet been established.

- 格局影响：QC Ware的平台化策略可能吸引制药和材料企业早期采用量子计算，但需持续证明在现实问题上的加速；IBM量子硬件作为后端，受益于软件生态扩展。

04 Industry

Industry & Ecosystem



Funding & IPOs

China's TuringQ launches IPO tutoring, vying to become China's first listed quantum company

[3]

- Fact: Shanghai-based photonic quantum computing company TuringQ has initiated pre-IPO tutoring with the Shanghai bureau of the China Securities Regulatory Commission, with Guotai Hainan Securities as the tutoring institution, aiming to become China's first

publicly listed quantum computing company
[3].

- Business implication: Chinese quantum computing startups are accelerating capitalization, reflecting a boom in hard-tech company listings; TuringQ's choice of an A-share listing may secure a higher valuation but must address scrutiny over technology maturity and commercial revenue.
- Landscape impact: If successfully listed, it will set a capital benchmark for China's quantum computing industry and may encourage more domestic quantum companies to follow; investors need to monitor the technology gap between its photonic approach and global leaders (e.g., PsiQuantum).

Honda invests in Japanese quantum algorithm startup Quemix [2]

- Fact: Honda Motor, through its global open innovation program Honda Xcelerator Ventures, has invested in Tokyo-based quantum software and algorithm startup Quemix Inc. (a TerraSky subsidiary), aiming to accelerate practical deployment of quantum computing for next-generation materials development [2].
- Business implication: An automaker directly investing in quantum algorithms with a focus on materials simulation shows the manufacturing sector's expectation that quantum computing

can reduce costs and increase efficiency in R&D; Quemix's algorithm expertise may shorten the discovery cycle for new batteries or lightweight materials.

- Landscape impact: Industrial capital entering the quantum software layer may spur more vertical-domain applications; Honda's investment could prompt other automakers to follow suit, but the commercial return on quantum materials simulation still requires years of validation.

Pasqal's SPAC merger registration statement with Bleichroeder Acquisition Corp. II declared effective by SEC ^[33] (Continued from Aug 5 report, updated with SEC effectiveness progress)

- Fact: French neutral-atom quantum computing company Pasqal Holding SAS announced that its joint F-4 registration statement with special purpose acquisition company (SPAC) Bleichroeder Acquisition Corp. II (NASDAQ: BBCQ) was declared effective by the U.S. Securities and Exchange Commission (SEC) on Aug 5, 2026, and Bleichroeder has scheduled a shareholder meeting for voting ^[33].
- 商业含义：SPAC合并进程推进关键一步，Pasqal距上市更近一步（尚待Aug 25股东大会表决），为中性原子路线注入资金；但近期SPAC市场表现参差不齐，估值和后续股价承压。

- Landscape impact: Pasqal's listing will diversify quantum computing investment targets, contrasting with IonQ, Rigetti, and D-Wave; the neutral-atom approach leads in logical qubit scale, but commercialization revenue is still in early stages.

Policy & Defense

Canada launches CAD 20.3 million quantum defense innovation security center in Calgary

[35]

- Fact: Canadian Minister of National Defence David J. McGuinty announced the launch of Canada's first Defence Innovation Security Hub (DISH) for quantum in Calgary, Alberta, operated by a 13-member consortium led by the University of Calgary and its Quantum City initiative, with CAD 20.3 million in funding over two years [35].
- Technical implication: The center will focus on applications of quantum sensing, communication, and computing in defense, potentially accelerating the deployment of quantum technologies in the security domain.
- Landscape impact: Canada strengthens its quantum defense ecosystem, potentially attracting North American defense contracts; the rising share of quantum sensing and networking in defense budgets benefits related hardware vendors.

Eaton wins USD 7 million Air Force contract to strengthen grid security using quantum computing ^[11]

- Fact: Power management company Eaton has been awarded a USD 7 million contract by the U.S. Air Force to apply quantum computing, machine learning, and visualization technologies to enhance grid security ^[11].
- Technical implication: The application of quantum computing in grid optimization and security is still in the exploratory stage; the project may use quantum annealing or variational algorithms to tackle combinatorial optimization problems.
- 格局影响：国防部门对量子计算在关键基础设施中的应用兴趣增加，可能为D-Wave等退火计算商和IonQ等门模型商打开新市场。

ZeroTier partners with Carahsoft to deliver post-quantum software-defined networking to the public sector ^[34]

- Fact: Software-defined networking (SDN) provider ZeroTier has partnered with government IT aggregator Carahsoft to distribute the ZeroTier Quantum post-quantum secure networking platform to U.S. public sector and defense agencies ^[34].
- Business implication: Post-quantum cryptography (PQC) migration is moving from

standard-setting to product delivery; integrating PQC into SDN can lower the barrier for government network upgrades.

- Landscape impact: The PQC market is accelerating its formation, with emerging companies like ZeroTier potentially challenging traditional cybersecurity vendors; government migration timelines will drive demand.

Jordan holds first quantum computing forum, central bank advances post-quantum cryptography roadmap ^[58]

- Fact: Jordan's Today Development Center and Asfar Consulting held the country's first National Quantum Computing Technology Forum in Amman on Aug 5, 2026, with over 50 experts participating; the Central Bank of Jordan is guiding banks toward quantum-resistant cryptography migration ^[58].
- Technical implication: Middle Eastern nations are beginning to lay out quantum security plans, though technical capabilities still rely on external sources.
- Landscape impact: Global PQC migration is spreading from Europe and North America to emerging markets, creating new geographic opportunities for quantum security solution providers.

Talent and Education

芝加哥量子招聘论坛将于12月举行 ^[15]

- Fact: The 2026 Chicago Quantum Recruiting Forum will be held on Dec 7 at mHUB, connecting hundreds of students and postdocs with leading quantum employers ^[15].
- Landscape impact: The competition for quantum talent is intensifying, with joint academia-industry cultivation models becoming mainstream.

UChicago students intern at PsiQuantum over the summer ^[13]

- Fact: University of Chicago student Qiaohong Wang interned at PsiQuantum over the summer, participating in the development of utility-scale quantum computers ^[13].
- Landscape impact: Photonic quantum companies are actively cultivating talent to build a foundation for long-term technology accumulation.

Summer training schools for university students focus on quantum research ^[56]

- Fact: Quantum research has become the focus of summer training schools for higher education students ^[56].

- Landscape impact: Quantum education is becoming systematized, supplying more talent to the industry.

Personnel Appointments

Horizon Quantum, QCI, Uviquity announce strategic appointments ^[5]

- Fact: Horizon Quantum has appointed Amanda Chew as Chief Product Officer (CPO), effective Aug 17; Quantum Computing Inc. and Uviquity also announced strategic appointments ^[5].
- Landscape impact: Quantum companies are strengthening productization and commercialization capabilities; the recruitment of senior product executives reflects the industry's shift from technology-oriented to market-oriented.

Former Coherent CEO Chuck Mattera joins Uviquity as strategic advisor ^[55]

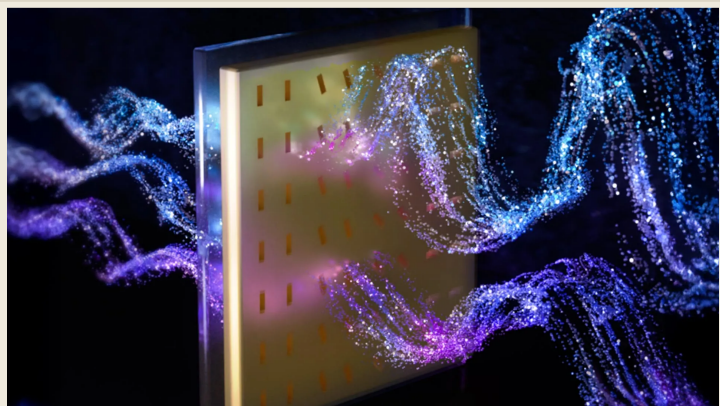
- Fact: Dr. Chuck Mattera, former CEO of Coherent, has joined quantum startup Uviquity as a strategic advisor ^[55].
- Landscape impact: A veteran executive from a traditional optoelectronics giant entering the quantum field may bring manufacturing and commercialization experience.

Intel appoints Dean Jarnac as Executive Vice President and Chief Sales Officer ^[27]

- Fact: Intel has appointed Dean Jarnac as Executive Vice President and Chief Sales Officer, leading the global sales organization to strengthen customer relationships and market execution across client, data center, AI, and networking product portfolios ^[27].
- Landscape impact: Intel's main business is not quantum computing hardware, but its advanced manufacturing and packaging technologies could influence quantum chip development; the sales leadership reshuffle aims to reignite growth.

05 Research

Research Frontiers



Quantum materials and devices

Room-temperature quantum material: gold supercrystal achieves sorting and transport of photonic quantum states ^[20]

- Fact: Scientists have created the first quantum material capable of sorting and transporting photonic quantum states at room temperature
 - an ultrathin "supercrystal" consisting of a gold film carved with hundreds of microscopic structures that acts like a filter, guiding different quantum light along separate paths, potentially eliminating the need for bulky ultra-cold refrigeration systems. ^[20].
- Technical implication: The material manipulates photonic quantum states at room temperature; if integrated into quantum devices, it could simplify hardware for photonic quantum computing and communication, but the current demonstration is only a proof of principle and requires improved efficiency and fidelity before practical use.
- 格局影响：若室温光子操控实现高保真度，可能颠覆低温光子平台，影响PsiQuantum、Xanadu 等技术路线。

UCLA scientists discover heat conducts as wave-like beams at room temperature ^[41]

- Fact: Scientists have demonstrated that heat can move through crystals as focused wave-like rays at room temperature, rather than

diffusing randomly, potentially enabling heat routing around sensitive parts of chips and quantum devices. [41].

- Technical implication: Thermal management is a key challenge for scaling quantum computing; if practical, this discovery could improve heat dissipation in quantum processors and enhance coherence performance.
- Landscape impact: May influence quantum computing hardware design in the long term, but the path from academic results to engineering application will take years.

Chromium and nickel compounds show paths to quantum materials [14]

- Fact: Research at City College of New York focuses on layered materials such as chromium iodide (CrI_3), nickel phosphorus trisulfide (NiPS_3), and chromium sulfide bromide (CrSBr) as new paths for quantum technologies. [14].
- Technical implication: These materials could be used for spin qubits or quantum sensors, but current research is at the fundamental stage.
- Landscape impact: Discovery of new materials may open up new qubit types, with long-term influence.

Quantum simulation and theory

Ising model simulates Majorana fermions in black hole spacetime ^[37]

- Fact: Researchers used the transverse-field Ising model to simulate Majorana fermions in a Schwarzschild black hole, finding that four coordinate representations converge to the same field theory. ^[37].
- Technical implication: Quantum simulation extends to gravitational physics, potentially enabling the study of black hole information problems using existing quantum hardware.
- Landscape impact: Cross-disciplinary fundamental science may attract the physics community's attention to quantum computing, but practical value is distant.

Disorder-induced entanglement phase transition and skin effect in non-Hermitian systems ^[38]

- Fact: Research on how disorder changes entanglement scaling in non-Hermitian dynamics reveals a phase transition from area-law to volume-law, involving the non-Hermitian skin effect. ^[38].
- Technical implication: This theoretical work deepens understanding of entanglement in open quantum systems and may guide

quantum information processing in noisy environments.

- Landscape impact: May influence quantum error correction design for open systems in the long term.

Detection of Rényi-index-dependent entanglement entropy scaling transition [40]

- Fact: Research detects a transition in entanglement entropy scaling that depends on the Rényi index; the existence of this transition is relevant to whether the second Rényi entropy can substitute for von Neumann entropy in experimental probing. [40].
- Technical implication: Provides a more easily measurable entanglement characterization method, potentially accelerating experimental studies of quantum many-body systems.
- Landscape impact: Experimental physicists can verify theories more quickly, facilitating quantum simulator benchmarking.

Quantum machine learning and algorithms

Quantum entanglement alone is insufficient for quantum machine learning advantage [17]

- Fact: Research by a Korean team reveals that bound entanglement, even in high-dimensional qubit systems, is insufficient to provide an exponential quantum learning advantage. [17].

- Technical implication: Clarifies the necessary conditions for quantum machine learning advantage, guiding future algorithm design and avoiding resource waste.
- Landscape impact: May affect expectations for investing in quantum machine learning, but will not hinder the development of practical quantum algorithms.

**Neural quantum state performance boost:
annealed gradient descent overcomes
subspace trapping ^[8]**

- Fact: Researchers used an annealed gradient descent (AGD) method to boost the performance of neural quantum states (NQS), overcoming the key limitation of subspace trapping. ^[8].
- Technical implication: NQS is an important method for variational quantum simulation; AGD may improve its accuracy and convergence speed, but needs validation on larger systems.
- Landscape impact: If NQS becomes a practical tool for classically simulating quantum systems, it could change how quantum advantage is verified.

576-qubit disordered-driven quantum system becomes classically simulable [19]

- Fact: Research using exact tensor network simulation of a square-lattice instantaneous quantum polynomial time (IQP) architecture with up to 576 qubits finds that increasing disorder drives two consecutive crossovers to classical simulability — the output distribution first loses anti-concentration, then the tensor network simulation cost drops. [19].
- Technical implication: Shows that disorder (noise) can destroy quantum computing advantage, setting noise thresholds for quantum advantage experiments.
- Landscape impact: Imposes stricter noise control requirements on quantum hardware vendors and may affect NISQ application prospects.

Two QFT records set within four months, but neither comes close to breaking RSA [28]

- 事实：两个编译团队在四个月内，于同一IBM芯片上声称运行了最大的量子傅里叶变换（QFT），但电路和指标不可比，且门计数解释为何远未威胁RSA加密 [28].
- Technical significance: QFT is the core of Shor's algorithm, but the scale demonstrated so far (gate count and qubit count) is still many orders of magnitude away from what is needed

to break RSA; the record mainly reflects progress in compilation optimization.

- Strategic impact: Caution is needed when the media hypes the quantum threat, as practical cryptanalysis remains distant; however, advances in compilation techniques may accelerate the implementation of other quantum algorithms.

New design achieves coherent perfect absorption in a photonic-phononic lattice [9]

- Fact: Using a synthetic system that couples photons and phonons, researchers achieved coherent perfect absorption in a new design. [9].
- Technical significance: Coherent perfect absorption can be used for quantum signal processing and sensing; this design may improve efficiency.
- Strategic impact: A fundamental physics advance that may influence quantum sensor design in the long term.

South China Normal University achieves quantum sensing beyond exceptional points [36]

- Fact: Researchers at South China Normal University achieved quantum sensing beyond exceptional points via a vacuum-noise fixed point protected by hidden symmetry. [36].

- Technical significance: Exceptional-point sensing can enhance sensitivity; this work may improve quantum sensor performance.
- Strategic impact: China continues to produce fundamental research in quantum sensing, potentially accelerating defense and medical applications.

PubChem physical verification flags errors in 80% of cases ^[10]

- Fact: A hierarchical verifier based on authoritative databases and physics flagged errors in chemical details given by large models in 80% of cases, especially for ambiguous entities. ^[10].
- Technical significance: Although not directly quantum research, this verification tool may be used for benchmarking quantum chemistry calculations.
- Strategic impact: Improves the reliability of chemical information, indirectly supporting the application of quantum computing in chemistry.

Today's Impact



Q2 2026 Financial Highlights

- 1 Financial divergence among publicly traded quantum computing companies intensifies:** IonQ营收飙升287%至8010万美元 ^[32], Rigetti grew 185% ^[6], but D-Wave's revenue remained flat despite surging orders ^[1], showing uneven commercialization progress; investors need to pay attention to the revenue quality of each company (hardware sales vs. cloud services vs. government contracts) and their paths to profitability.
- 2 U.S. CHIPS Act directly benefits quantum hardware:** Rigetti receives \$100 million letter of intent ^[6], indicating that the U.S. government is incorporating quantum computing into its semiconductor strategy, which may prompt more companies to apply for funding and accelerate domestic hardware manufacturing.
- 3 Post-quantum cryptography migration moves from standards to deployment:** ZeroTier partners with Carahsoft to offer PQC networks ^[34], the Central Bank of Jordan

advances its roadmap ^[58], showing that global governments and enterprises are beginning actual migration; cybersecurity vendors need to accelerate product upgrades.

4 Chinese quantum companies accelerate

IPOs: TuringQ launches IPO ^[3], poised to become the first publicly listed Chinese quantum company, injecting capital into the local industry, but its technology commercialization capability remains to be tested.

5 Room-temperature quantum material breakthroughs may alter hardware

roadmaps: room-temperature manipulation of photonic quantum states ^[20] and thermal conduction control ^[41] If practical, these could reduce quantum computers' dependence on cryogenics, affecting the long-term competitiveness of superconducting and trapped-ion approaches.

07 Editors

Editor's Note

本周量子计算上市公司财报密集发布，揭示一个关键矛盾：订单和营收高速增长，但技术底层仍远未达到容错实用化。IonQ和Rigetti的营收飙升主要来自系统部署与早期商业合同，而非大规模企业应用；D-Wave的订单积压更凸显硬件交付瓶颈。投资

者需警惕“营收增长”与“技术突破”的脱节——量子计算的真正爆发仍需纠错和规模化的双重飞跃。

Another noteworthy trend is the progress in room-temperature quantum materials. If technologies for manipulating photonic quantum states or controlling thermal conduction at room temperature mature, they could fundamentally reduce quantum computing hardware’s reliance on expensive cryogenic systems, lowering cost and complexity. Although these academic results are still some distance from engineering, they open new possibilities for photonic and spin-based approaches and may force superconducting and trapped-ion approaches to accelerate cost optimization. In the coming years, a race for room-temperature qubit fidelity may begin.

References

[1] D-Wave Reports Its Q2 2026 Financial Results Showing Bookings Surge, Technical Progress, and Quantum Circuits Acquisition Impact	[4] UCLA-Led Consortium Secures \$4 Million NSF Grant for 60 Logical Qubit Trapped-Ion Architecture
[2] Honda Invests in Japanese Quantum Algorithm Startup Quemix	[5] Who’s News: Strategic Appointments at Horizon Quantum, Quantum Computing Inc., and Uviquity
[3] TuringQ Planning to IPO and In Race to Become China’s First Public Quantum Firm	[6] Rigetti Computing Reports Q2 2026 Financial Results: Revenue Up 185% YoY, \$100M CHIPS Act LOI, and HPE Supercomputing Partnership

- [7] QC Ware Demonstrates Hybrid Quantum-Classical Chemistry Workflow Using Promethium and IBM Quantum
- [8] NQS Achieves Competitive Performance With New AGD Optimization
- [9] Photon-Phonon Lattice Achieves Coherent Perfect Absorption in New Design
- [10] PubChem physics-based verification flags errors in 80% of cases
- [11] Eaton wins \$7M Air Force deal to harden power grids with quantum
- [12] Imperial engineers build a reconfigurable photonic quantum chip
- [13] UChicago student builds quantum skills at PsiQuantum this summer
- [14] Chromium, nickel compounds offer quantum material path
- [15] Quantum employers will meet talent at Chicago's mHUB in December
- [16] IonQ Quantum LDPC Codes Unlock 3x Faster Joint Logical Measurements
- [17] Quantum Entanglement Alone Isn't Enough For Quantum Machine Learning
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Week Ending August
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