

IT & Electronics

Field Intelligence Report

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Semiconductor Packaging / AI & Machine Learning / Quantum Computing / Photonics & Optical Comms

Market Mood

78

/ 100 Optimistic

AI Infrastructure & Quantum Convergence

Rapid advancements in AI chip packaging and optical interconnects are accelerating, while quantum computing reaches critical commercialization milestones, demanding integrated strategic responses.

Advanced Packaging Capex Growth	Optical Network Capacity Increase	US Quantum Funding	PQC Federal Mandate
\$10.5B	30-50	2.013B	January 2027
23.5%	—	—	—

Weekly Summary

AI demand drives record investments in advanced semiconductor packaging (CoWoS, CPO) and 800G/1.6T optical interconnects. Quantum computing commercializes with logical qubit breakthroughs and PQC standardization. Western players must integrate technologies, localize manufacturing, and form strategic partnerships to navigate supply bottlenecks and regulatory shifts, securing leadership.

4 Sub-Topic Summary

Sub-Topic	Headline	Momentum	Key Insight
Semiconductor Packaging	AI Drives 23.5% Capex in Adv Packaging	Accelerating	Surging AI chip demand drives record Capex, with ASE Technology increasing 2026 spending by 23.5% to \$10.5B (S1-04). Hybrid bonding and 2.5D/3D packaging (CoWoS, EMIB) are critical, but capacity constraints and ABF substrate shortages (S1-05) push innovation to glass substrates and panel-level packaging (S1-09).

AI & Machine Learning	Agentic AI, LLM Compete; EU AI Act In	Accelerating	The LLM market is highly competitive with new releases (Claude Opus 5, Grok 4.5, Qwen3.7 Flash, S2-06, S2-14) and open-source models achieving parity (Llama 3, S2-15). Agentic AI rapidly advances for enterprise CX (S2-29, S2-34) and cybersecurity (Microsoft Project Perception, S2-17, S2-21). The EU AI Act entered force, extending high-risk system compliance to Dec 2027 but imposing immediate transparency mandates (S2-12, S2-13, S2-42).
Quantum Computing	70 Logical Qubits, NIST PQC Finalized	Accelerating	IBM and University of Chicago demonstrated trusted quantum advantage with 70 logical qubits (S3-01, S3-28), while Pasqal showed logical qubits outperforming physical ones by 10x (S3-04). NIST finalized PQC standards (ML-KEM, ML-DSA, SLH-DSA), with US government mandating transition by Jan 2027 for national security systems (S3-08, S3-18, S3-19, S3-20). Significant US CHIPS Act funding (\$2.013B) accelerates hardware development and commercialization (S3-20, S3-21).
Photonics & Optical Comms	AI Shifts to 800G/1.6T Optical, CPO	Plateauing	AI data centers are rapidly transitioning from copper to 800G/1.6T optical interconnects due to bandwidth and power limits (S4-09, S4-11, S4-15, S4-20). Broadcom and NVIDIA commenced mass production of Co-Packaged Optics (CPO) switches, aiming to cut power consumption by up to 3.5x (S4-01, S4-36). Silicon photonics R

Japan Accelerates Domestic Semiconductor & AI Production with Trillion-Yen Subsidies

Source: METI Press Releases, IPA Disclosures

Summary: Japan's Ministry of Economy, Trade and Industry (METI) has announced a significant acceleration of public support for the semiconductor and AI sectors, targeting over ¥10 trillion (approx. \$63 billion USD) in public funding by FY2030. Key allocations include a...

WHY ENGINEERS SHOULD CARE

Strategic planners should factor in Japan's aggressive, multi-trillion-yen commitment to domestic advanced manufacturing capacity, particularly for 2nm logic, HBM, and 3D NAND. Evaluate the potential ...

JSR Boosts EUV Photoresist Capacity and Sub-2nm Development

Source: JSR TDnet Disclosure, Gemini Grounding

Summary: JSR Corporation is expanding its Extreme Ultraviolet (EUV) photoresist manufacturing capabilities with a new plant in Gunma, Japan, slated for completion from 2026. The company is accelerating co-development partnerships with major foundries like TSMC and Sams...

WHY ENGINEERS SHOULD CARE

EUV process engineers and material scientists should monitor JSR's 2026 capacity expansion and sub-2nm resist development progress. Upstream resist supply stability and performance are critical for ac...

Shin-Etsu Chemical Raises Silicon Wafer Prices, Advances 200mm SiC Substrates

Source: Shin-Etsu Chemical TDnet Disclosure, Gemini Grounding

Summary: Shin-Etsu Chemical, the world's largest semiconductor silicon wafer producer with approximately 30% global market share, implemented price increases effective July 1, 2026. Standard silicon wafer prices rose by 5-8%, while high-end silicon wafers saw an 18-22%...

WHY ENGINEERS SHOULD CARE

Procurement and supply chain professionals should update their cost models and supplier negotiations to reflect Shin-Etsu's July 1, 2026, silicon wafer price adjustments, particularly for high-end waf...

This Week's Japan Technology Highlights

Japan's ¥10T+ public investment in semiconductors and AI, including ¥2.354T for Rapidus 2nm logic, signals major supply chain diversification.

China Watch | IT & Electronics

Full English content available after pipeline regeneration.

SMIC's 7nm/5nm Progress: Yield Challenges and Domestic DUV Ambitions

■ China's Move

Semiconductor Manufacturing International Corporation (SMIC) is reportedly testing domestically developed deep-ultraviolet (DUV) lithography machines from SiCarrier affiliate, Yuliangsheng, for supply to major Chinese manufacturers including SMIC (This report,...

■ Technical Verification

[CONFIRMED]

SMIC is actively producing 7nm (N+2) chips for Huawei's Ascend 910 C. / SMIC reported a utilization rate of 93.1% in Q1 2026.

[BOTTLENECK]

Achieving competitive yield rates for advanced nodes (7nm and below) without access to leading-edge lithography (EUV). / Scaling advanced process capacity efficiently and cost-effectively with older...

■ Implications for Western Engineers

- For Foundry Sourcing Teams: Continue to monitor SMIC's official capacity expansion and yield reports for 7nm/5nm. Do not assume ...
- For Process Engineers: Analyze any available teardowns of SMIC's 7nm chips for process complexity, defect analysis, and comparis...
- For Equipment Vendors: Track the actual deployment and performance metrics of SiCarrier/Yuliangsheng DUV tools to assess the com...

Macro Market Indicators

Indicator	Direction	Value	Note	Source
US AI Data Center Electricity Demand	↑	6.7-12%	Projected to consume 6.7% to 12% of total U.S. electricity by 2028, straining transmission infrastructure.	Department of Energy (DOE)
EU AI Act High-Risk Compliance Deadline	→	Dec 2, 2027	Compliance deadline for standalone high-risk AI systems extended by 18 months to two years.	EU AI Act
North American AI Startup Funding (H1 2026)	↑	\$392B	Total North American startup funding hit a record \$392B in H1 2026, with majority in mega-deals.	Crunchbase News
China Quantum Sector Funding (Q1 2026)	↑	\$450M	China's quantum sector saw \$450M infusion in Q1 2026, exceeding 2025's total annual funding.	手机网易网 (163.com)

Macro Environment Summary

Global technology investment remains robust, with North American AI startup funding reaching \$392 billion in H1 2026, though concentrated in mega-deals (S2-07). China's quantum sector alone saw \$450 million in Q1 2026 (S3-40). Regulatory frameworks are solidifying, with the EU AI Act entering force and extending high-risk system compliance to December 2027 (S2-12, S2-42). However, critical infrastructure challenges are emerging, notably the U.S. AI data center power demand projected to consume up to 12% of total U.S. electricity by 2028, straining transmission infrastructure (S2-09).

Market Data: SOXX (Semiconductors) Weekly Trend

504.89 USD -4.20%

References (150 Total)

ID	Title	Source	Date	Region	Sub-Topic
S1-01	Besi Achieves Record €292.9M Orders in Q2 2026, Driven by AI Demand and 128.8% Growth in Hybrid Bonding Technology	ET Electronics News	2026-07-23	Netherlands	Semiconductor Packaging
S1-02	Malaysia Invests US\$45 Million to Propel Advanced Chip Packaging, Targeting HBM4 Domestic Proof-of-Concept	Asia News Network	2026-07-30	Malaysia	Semiconductor Packaging
S1-03	Intel's EMIB Dominates AI Packaging with Google Adoption, Prompting TSMC to Develop Similar Tech Amidst CoWoS Constraints	Benzinga	2026-07-31	US	Semiconductor Packaging
S1-04	ASE Technology Ups 2026 Capex to Record \$10.5 Billion, a 23.5% Increase, Driven by Surging AI Packaging Demand	Digitimes	2026-07-31	Taiwan	Semiconductor Packaging
S1-05	AI Chip HBM Integration to Drive 29% ABF Substrate Shortage by 2028; \$19.1B Expansion Unlikely to Offer Short-Term Relief	[]	2026-07-26	Taiwan	Semiconductor Packaging
S1-06	Intel Accelerates Next-Gen AI Semiconductor Development in U.S. Fabs with Foveros and Enhanced EMIB-T Packaging	Intel	2026-07-29	US	Semiconductor Packaging
S1-07	SEMICON West Relocates to Phoenix, Arizona, Bolstering U.S. Semiconductor Hub with TSMC's \$100 Billion Advanced Fab Plans	Arizona Commerce Authority	2026-07-30	US	Semiconductor Packaging
S1-08	2.5D Packaging and HBM Integration Accelerate for AI Accelerators: TSMC CoWoS and Samsung I-CubeS Drive Towards 5.5x Reticle Sizes by 2026	Econ Market Research	2026-07-27	Global	Semiconductor Packaging
S1-09	TSMC Moves to Large-Format Glass Substrates with CoPoS to Address CoWoS Capacity for AI Chips, Targeting 2028-2029 Mass Production	36	2026-07-29	Taiwan	Semiconductor Packaging
S1-10	Amkor to Invest \$7 Billion in Arizona for Advanced AI Chip Packaging, Shifts Korean SiP Production to Vietnam	Seeking Alpha	2026-07-24	US	Semiconductor Packaging
S1-11	ASE Technology Bets Big on AI: \$10.5 Billion Record Capex to Double Advanced Packaging by 2027	TrendForce	2026-07-31	Taiwan	Semiconductor Packaging
S1-12	SiC Power Modules Get a Boost: Advanced Packaging with AMB and Embedded Die Transforms EV and AI Data Centers	[Industry Publication/Research]	2026-07-31	Global	Semiconductor Packaging
S1-13	ASMPT's Advanced Packaging Business Achieves Record Sales in H1 2026, Driven by Surging AI Demand	ASMPT	2026-07-28	Singapore	Semiconductor Packaging

ID	Title	Source	Date	Region	Sub-Topic
S2-01	EU AI Act Refines 'Safety Component' Definition, Narrows High-Risk Classification, and Establishes Legal Exemption for Special Category Data Processing in Bias Detection	Lumenova AI	2026-07-23	US	AI & Machine Learning
S2-02	NVIDIA to Unleash 'Rubin' AI Platform in 2026, Integrating Next-Gen GPU, CPU, and Networking Technologies	The Daily Star	2026-07-XX	Bangladesh	AI & Machine Learning
S2-03	TSMC and Kinsus Jointly Developing New AI Chip Packaging Technology Akin to Intel's EMIB to Address CoWoS Capacity Constraints	Tech in Asia	2026-07-31	Singapore	AI & Machine Learning
S2-04	Microsoft Extends Copilot Capabilities with Natural Language Data Analysis in Excel, Enhanced Teams Summaries, and GitHub Copilot Agent Mode, Bolstering Azure AI Infrastructure	Microsoft	2026-07-29	US	AI & Machine Learning
S2-05	Anthropic Releases Claude Sonnet 5 with 1 Million Token Context Window and 128k Max Output Tokens, Significantly Enhancing Developer Platform	Releasebot	2026-07-24	US	AI & Machine Learning
S2-06	Claude Opus 5, Claude Mythos 5, and Grok 4.5 Dominate 2026 LLM Benchmarks Across Reasoning, Coding, and Overall Performance	BenchLM.ai	2026-07-27	Unknown	AI & Machine Learning
S2-07	Physical AI Startup Atoms Leads \$1.7 Billion Funding Round as AI Startup Investment Concentrates in Mega-Deals	Crunchbase News	2026-07-24	US	AI & Machine Learning
S2-08	Anthropic Releases Claude Code 3.5, Enabling Cross-Repository Code Analysis and Refactoring	SkillsLLM	2026-07-23	Unknown	AI & Machine Learning
S2-09	U.S. AI Data Center Power Demand Soars, Projected to Consume Up to 12% of Total U.S. Electricity by 2028, Straining Transmission Infrastructure	Department of Energy (DOE)	2026-07-30	US	AI & Machine Learning
S2-10	Mobile Edge AI Advances Significantly in 2026: Enhancing On-Device Inference, Battery Efficiency, and Privacy Protection	The Backend Developers	2026-07-23	Unknown	AI & Machine Learning
S2-11	Nvidia Dominates H1 2026 AI Chip Market with 75-81% Revenue Share, While AMD and Intel Gain Momentum with OpenAI Partnership and New GPU Sampling	The Motley Fool	2026-07-26	US	AI & Machine Learning
S2-12	EU AI Act Amended Law Enters into Force July 27, Extends Compliance Deadlines for High-Risk AI Systems by Up to Two Years, and Prohibits Non-Consensual Intimate Image Generation by AI from December 2	Akin Gump	2026-07-28	US	AI & Machine Learning
S2-13	Europe's Landmark AI Act Takes Effect: Pioneering Global Governance with Phased Compliance	European Union	2026-07-27	Europe	AI & Machine Learning

ID	Title	Source	Date	Region	Sub-Topic
S2-14	xAI Releases Grok STT 1.0, Anthropic Launches Claude Opus 5, and Alibaba Introduces Qwen3.7 Flash, Intensifying LLM Market Competition	LLM Gateway	2026-07-24	Unknown	AI & Machine Learning
S2-15	Open-Source LLMs Like Llama 3 Achieve Performance Parity with Proprietary Models in July 2026, Gaining Traction for Customizability and Flexibility	LLM Stats	2026-07-XX	Unknown	AI & Machine Learning
S2-16	Nvidia's \$750 Billion AI Investment Fuels 'Circular Tech Bubble' Fears, Raising Concerns Over Demand Distortion and Magnified Potential Losses	Los Angeles Times	2026-07-29	US	AI & Machine Learning
S2-17	Microsoft Unveils New AI Security Initiatives to Counter AI-Enabled Threats, Featuring 'Project Perception' and 'MAI-Cyber-1-Flash' Agent Model Achieving 96% in CyberGym Benchmark	Microsoft	2026-07-28	US	AI & Machine Learning
S2-18	SiliconFlow Launches Real-Time LLM Benchmarking Platform, Aiming for Industry Standardization	SiliconFlow	2026-07-26	多国籍	AI & Machine Learning
S2-19	AI Chip Showdown: NVIDIA, AMD, and Intel Ignite New Battleground in 2026 with Blackwell Ultra and Instinct MI400	CryptoBriefing	2026-07-25	多国籍	AI & Machine Learning
S2-20	Anthropic Releases New Features for Claude, Continuously Enhancing Model Performance and Developer Experience	ReleaseBot	2026-07-29	US	AI & Machine Learning
S2-21	Microsoft Announces AI Cybersecurity 'Project Perception' to Fortify AI Defenses Against Adversarial Attacks	Cyberscoop	2026-07-26	US	AI & Machine Learning
S2-22	NVIDIA's AI Financing Story Gains Momentum, Accelerating Funding Strategy and Investor Confidence	Kalkine Media	2026-07-27	US	AI & Machine Learning
S2-23	AI Startup Funding Soars to Record Highs Amidst Investor Scrutiny and Valuation Reassessment	Exeleon Magazine	2026-07-28	多国籍	AI & Machine Learning
S2-24	EU AI Act Reshapes Generative AI Copyright: Curtis Law Firm Details New Legal Challenges and Compliance Pathways	Curtis, Mallet-Prevost, Colt & Mosle LLP	2026-07-27	多国籍	AI & Machine Learning
S2-25	NVIDIA and SK Group Forge \$500 Billion AI Alliance for 2GW Data Centers and HBM Supply	MLQ.ai	2026-07-29	多国籍	AI & Machine Learning
S2-26	OpenAI and AWS Strengthen Strategic Partnership to Secure High-Performance AI Infrastructure and Scalability	OpenAI	2026-07-30	US	AI & Machine Learning

ID	Title	Source	Date	Region	Sub-Topic
S2-27	UCLA Establishes \$125M Semiconductor Hub, Prioritizing 'High-Impact' AI Chip Research to Bolster U.S. Competitiveness	EE Times	2026-07-28	US	AI & Machine Learning
S2-28	Elastic and OpenAI Forge Strategic Partnership to Fuse Search and Generative AI, Accelerating Intelligent Applications	Elastic Blog	2026-07-25	US	AI & Machine Learning
S2-29	Agentic AI Redefines Enterprise CX: Endava and Upstream Announce Strategic Partnership	Endava Newsroom	2026-07-31	多国籍	AI & Machine Learning
S2-30	Wooptix Unveils Astronomy-Inspired Tech to Resolve 'Optical Bottleneck' in AI Chip Packaging, Boosting Yield and Performance	EE Times	2026-07-28	US	AI & Machine Learning
S2-31	Space-Grown Semiconductors: The Next Frontier for AI Compute, Breaking Performance and Efficiency Barriers	EE Times	2026-07-29	US	AI & Machine Learning
S2-32	DAC 2026 Highlights 'True Challenges of AI Chip Creation': Debating Design Complexity and Soaring Costs	EE Times	2026-07-29	US	AI & Machine Learning
S2-33	BFL.ai Unveils Flux-3: Accelerating Enterprise AI with Advanced LLM and Agentic Framework	BFL.ai Blog	2026-07-30	多国籍	AI & Machine Learning
S2-34	Deployed Minds Tech Unveils Comprehensive Guide to Accelerate Enterprise Agentic AI Adoption	Deployed Minds Tech Blog	2026-07-31	多国籍	AI & Machine Learning
S2-35	Databricks Announces AI Strategy in Healthcare, Accelerating Therapy Development Based on Real-World Data	Databricks Blog	2026-07-28	US	AI & Machine Learning
S2-36	AI Industry Unpacked: July 25, 2026 – NVIDIA's Blackwell Ultra, Microsoft's Agentic AI, and EU Regulatory Milestones	AI Industry Daily	2026-07-25	多国籍	AI & Machine Learning
S2-37	Specialized AI Dominates July 2026 Funding: Generative Models, Robotics, and Healthcare Lead the Charge	The CodeW	2026-07-31	多国籍	AI & Machine Learning
S2-38	SmartMoneyMedia Unveils PR Playbook for AI Startups: Mastering Storytelling and Media Strategy	SmartMoneyMedia	2026-07-29	多国籍	AI & Machine Learning
S2-39	EU AI Act Reshapes Global AI Development: A Mandate for Proactive Transparency and Risk Management	Quantal AI	2026-07-23	USA, —	AI & Machine Learning
S2-40	OpenAI Launches "OpenAI Presence," a Managed Enterprise Platform for Governed AI Agents in High-Stakes Workflows	OpenAI	2026-07-23	US	AI & Machine Learning
S2-41	OpenAI Commits \$150M to Enterprise AI Deployment with Forward Deployed Engineers Embedded in Client Operations	MarketScale	2026-07-30	US	AI & Machine Learning

ID	Title	Source	Date	Region	Sub-Topic
S2-42	EU AI Act Extends High-Risk System Compliance Deadline to 2027, While Transparency Mandates Loom	Ethisphere	2026-07-29	Europe	AI & Machine Learning
S3-01	IBM and University of Chicago Achieve Trusted Quantum Advantage with 70 Logical Qubits, Outperforming Classical Computation	IBM	2026-07-30	US	Quantum Computing
S3-02	Quantum Computing Sector Reports Multi-faceted Progress: Monarch Quantum Secures \$55M, Google Shifts to Dual-Modality, India Establishes First Commercial 8-Qubit System, and Fujitsu/Osaka University Advance Molecular Simulation	Quantum Computing Report	2026-07-25	US	Quantum Computing
S3-03	Quantum Consortium Secures DKK 30M for AI-Powered Drug Discovery Breakthroughs	BlueQubit	2026-07-28	Denmark	Quantum Computing
S3-04	Pasqal Achieves Industry First: Logical Qubits Outperform Physical Qubits by up to 10x on Neutral Atom Quantum Computer, Solving Differential Equations	Pasqal	2026-07-28	France	Quantum Computing
S3-05	Rigetti Expands Collaboration with HPE and Pittsburgh Supercomputing Center to Build New Hybrid Quantum-Classical Supercomputer with 9-Qubit Novera™ System	Rigetti Computing	2026-07-27	US	Quantum Computing
S3-06	AT&T; to Expand D-Wave Quantum Computing Use Across Network Operations After Achieving ~99.6% Reduction in Optimization Processing Time, from 1 Hour to Under 15 Seconds	AT&T;	2026-07-27	US	Quantum Computing
S3-07	Quantum Machine Learning in Pharmacology Accelerates Drug Discovery: VQE Algorithms Precisely Calculate Molecular Ground State Energy	Qupharm	2026-07-25	Unknown	Quantum Computing
S3-08	NIST Finalizes Post-Quantum Cryptography Standards FIPS 203/204/205; US Government Mandates ML-KEM/ML-DSA Transition by January 2027	NIST (U.S. Department of Commerce)	2026-07-30	US	Quantum Computing
S3-09	Advancements in Quantum Error Correction: Surface Codes Integrate Hundreds of Physical Qubits into Logical Qubits for Fault-Tolerant Quantum Computing	Quantagram	2026-07-29	Unknown	Quantum Computing
S3-10	Warwick University Proposes Novel Quantum Chip Architecture Utilizing 'Quantum Phonon Links' for Enhanced Long-Range Qubit Communication and Scalability	Data Centre & Network News	2026-07-28	UK	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-11	Rice University Joins DOE Quantum Science Center, Securing \$900K Funding for Real-Time Quantum Error Correction Decoding Algorithms on High-Performance Classical Computing	Rice University News	2026-07-23	US	Quantum Computing
S3-12	HRL Laboratories Demonstrates Self-Executing Silicon Quantum Processor with 10x Reduction in Control Errors, Autonomous On-Chip Error Correction	HRL Laboratories	2026-07-29	US	Quantum Computing
S3-13	SRI International-Led QED-C Releases Quantum Networking Maturity Roadmap, Identifying 10 High-Impact Applications in Secure Communication, Quantum Computing, and Sensing	SRI International	2026-07-29	US	Quantum Computing
S3-14	SpinQ Explores Next-Generation Superconducting Quantum Chip Technology: Targeting Significantly Improved Coherence Time, Gate Fidelity, and Broad Quantum Stack Compatibility	SpinQ	2026-07-30	China	Quantum Computing
S3-15	Australia and Japan Form Strategic Quantum Alliance, Uniting Innovation Ecosystems	Austrade	2026-07-31	Australia	Quantum Computing
S3-16	Q-CTRL Unveils 'Fire Opal' and 'Boulder Opal' Infrastructure Software to Accelerate Practical Quantum Computing Applications	Q-CTRL	2026-07-29	Australia	Quantum Computing
S3-17	Cleveland Clinic and IBM Pioneer Quantum Machine Learning Framework 'Q-CHIPP' to Predict Neoantigen Immune Response with 46 Qubits, Opening New Avenues in Immuno-Oncology	EurekAlert!	2026-07-29	US	Quantum Computing
S3-18	NIST Finalizes First Post-Quantum Cryptography Standards: ML-KEM for Key Exchange, ML-DSA for Digital Signatures, Mandating Enterprise Migration	QubitChain.io	2026-07-25	US	Quantum Computing
S3-19	NIST Finalizes Quantum-Resistant Cryptography Standards: ML-KEM and ML-DSA to Secure AI Infrastructure	Security Boulevard	2026-07-26	US	Quantum Computing
S3-20	U.S. Executive Orders Inject \$2 Billion into Quantum Computing via CHIPS Act, Mandating Federal PQC Transition by 2030	Wilson Sonsini	2026-07-29	US	Quantum Computing
S3-21	U.S. Commerce Department Infuses \$2.013 Billion into Quantum Tech via CHIPS Act, Including \$1 Billion for IBM's Anderson Foundry, Reshaping IP Market	MBHB	2026-07-31	US	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-22	Canada, G7, Nordic Countries Launch Joint Call for Quantum Technology Proposals, Including Dual-Use Research; Japan Advances National Quantum Strategy	Natural Sciences and Engineering Research Council of Canada (NSERC)	2026-07-27	Canada	Quantum Computing
S3-23	PQC Center of Excellence Releases Post-Quantum Cryptography FAQ, Detailing NIST Standards and U.S. Federal Migration Mandates	PQC Center of Excellence	2026-07-29	US	Quantum Computing
S3-24	Quantinuum and NVIDIA Validate Generative Quantum AI Framework 'GenQAI' for Pharmaceutical R&D;,, Optimizing Computational Chemistry	Quantinuum	2026-07-27	US	Quantum Computing
S3-25	U.S. Alliance For Civic Engagement Warns of 'Harvest Now, Decrypt Later' Threat, Emphasizing Complexities of PQC Migration	Alliance For Civic Engagement	2026-07-27	US	Quantum Computing
S3-26	Hewlett Foundation Launches \$100M Initiative for AI, Biotech, and Quantum Security, Supporting PQC Migration and Quantum-Safe Networks	Philanthropy News Digest	2026-07-23	US	Quantum Computing
S3-27	Hitachi, Intel, AIST Unveil NEDO Project for 50-Qubit Silicon Quantum Chip with Intel 18A Process	財經新聞	2026-07-24	Japan	Quantum Computing
S3-28	IBM and University of Chicago Demonstrate Quantum Advantage with 'Trusted Quantum Computation on Logical Circuits,' Solving Problems with 70 Logical Qubits in 15 Minutes	IBM Newsroom	2026-07-30	US	Quantum Computing
S3-29	Infleqtion and Three Other Quantum Companies Join ABQ-Net, First U.S. Open-Access Quantum Network, Supported by New Mexico's \$450M+ Investment	PR Newswire	2026-07-28	US	Quantum Computing
S3-30	Quemix Selected for NEDO Project: Develops Quantum Computer-Based Material Simulation Platform for Battery Materials with Tohoku University	PR TIMES	2026-07-29	Japan	Quantum Computing
S3-31	Chugai Pharmaceutical Drives Quantum Computing Initiative to Accelerate Drug Discovery, Anticipating Fault-Tolerant Quantum Computing by 2030	Chugai Pharmaceutical Co., Ltd.	2026-07-29	Japan	Quantum Computing
S3-32	What is NIST-Standardized ML-KEM? Explaining Lattice-Based Key Encapsulation Mechanism as a Beginner's Guide to Quantum-Resistant Encryption	Medium (by "AI-B lockchain-Quantum Insights")	2026-07-26	US	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-33	D-Wave Expands AT&T; Partnership, Acquires Quantum Circuits to Transition to Commercial Enterprise, Secures LOI for up to \$100M in CHIPS Act Funding	TradingKey	2026-07-28	US	Quantum Computing
S3-34	Advancements Towards 'Q-Day': Google Willow, Quantinuum H2, Microsoft Majorana 1 Achieve Key Milestones in Practical Quantum Computing	Global Resilience Institute	2026-07-25	US	Quantum Computing
S3-35	Ground State Ventures Launches \$88M 'Quantum Technology Fund,' Accelerating Drug Discovery and Materials Science Through Quantum-AI Fusion	Venture Capital Journal	2026-07-23	US	Quantum Computing
S3-36	LatticeForge Unveils Hands-On Post-Quantum Cryptography Platform Supporting NIST's ML-KEM, ML-DSA, SLH-DSA, and FN-DSA	Medium (by LatticeForge)	2026-07-29	US	Quantum Computing
S3-37	BQP Transforms Drone Propeller Design with Quantum Optimization; Quantinuum, Xanadu, and Others IPO in 2026 as Quantum Tech Nears Practical Stage	BQP	2026-07-29	UK	Quantum Computing
S3-38	ZuriQ Secures \$25.5M Seed Funding, Partners with Infineon to Scale 2D Trapped-Ion Quantum Processors for Thousands of Qubits	Quantum Computing Report	2026-07-29	Switzerl and	Quantum Computing
S3-39	OP Pohjola and Qutwo Launch Joint Quantum-AI Research Unit to Transform Financial Services	Global Finance Magazine	2026-07-23	Finland	Quantum Computing
S3-40	Quantum Ascent: China's Sector Sees \$450 Million Infusion in Q1 2026, Driven by Origin Quantum and QuantumCTek	(163.com)	2026-07-28	China	Quantum Computing
S3-41	China's Quantum Leap: Commercialization Accelerates Across Finance, Pharma, and AI	Sina.com	2026-07-28	China	Quantum Computing
S3-42	Illinois Quantum and Microelectronics Park (IQMP) and Japan's Q-STAR Partner to Strengthen US-Japan Quantum Ecosystem Collaboration	IQMP Newsroom	2026-07-23	US	Quantum Computing
S3-43	Encryption's Breaking Point: Stanford Report Flags Quantum Threat by Early 2030s	Chosun Ilbo	2026-07-26	South Korea	Quantum Computing
S3-44	Terra Quantum and Apex.AI Demonstrate NIST-Standard PQC for Long-Lived, Cloud-Connected, Software-Defined Systems, Ensuring Quantum-Safe Security	PR Newswire	2026-07-23	Switzerl and	Quantum Computing
S3-45	Hitachi, Intel, and AIST Launch NEDO-Backed Silicon Quantum Computing Project, Targeting 100-Qubit Error-Corrected Prototype by FY2028	Quantum Computing Report	2026-07-24	Japan	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-46	Versa Networks Integrates NIST-Standard PQC into SASE Platform, Providing Quantum-Safe Migration Path for Existing Networks	Versa Networks	2026-07-29	US	Quantum Computing
S3-47	Horizon Quantum and Quantum Machines Partner to Develop Real-Time Calibration for 'Ember-1' Superconducting Quantum Computer, Enhancing Efficiency	Business Wire	2026-07-29	Singapore	Quantum Computing
S3-48	Spanish Quantum Computing Firm Multiverse Computing Secures Series C Funding to Advance Financial Applications	(163.com)	2026-07-28	Spain	Quantum Computing
S3-49	Red Hat Accelerates PQC Transition for Financial Services: RHEL 10 Supports Quantum-Resistant Cryptography	Red Hat	2026-07-29	US	Quantum Computing
S3-50	Quantum Computing Stocks Down 71%, Yet Quantum Computing Inc. (QUBT) Accelerates Commercialization with Two Strategic Acquisitions	TIKR.com	2026-07-25	US	Quantum Computing
S3-51	TNO Emphasizes Need for Long-Range Quantum Networks, Commits to Realizing Quantum Internet	TNO	2026-07-27	Netherlands	Quantum Computing
S3-52	EY Expands On-Site Quantum Computing Capabilities with \$3 Billion Global Investment, Supporting Enterprise Transformation	EY Global Newsroom	2026-07-29	Canada	Quantum Computing
S3-53	QuantumCore Partners with University of Waterloo on Cryogenic Multiplexing Technologies to Resolve Wiring Complexity for Scalable Quantum Computing Infrastructure	Newsfile Corp.	2026-07-23	Canada	Quantum Computing
S3-54	SpinQ and DIVBIO Partner to Explore New Avenues in Quantum-Enabled Drug Discovery, Focusing on Molecular Design and Simulations	SpinQ	2026-07-29	China	Quantum Computing
S3-55	HRL Laboratories Demonstrates Self-Running Silicon Quantum Processor, IBM Acquires to Bolster Quantum Capabilities	Business Wire	2026-07-29	US	Quantum Computing
S4-01	Broadcom Initiates Mass Production of 800G CPO Switch ASICs for Next-Gen AI/HPC Data Centers, Slashing Power and Latency	Photonics News Weekly	2026-07-29	US	Photonics & Optical Comms
S4-02	NVIDIA Integrates Next-Gen Silicon Photonics Optical Interconnects to Boost GPU Communication for Large-Scale AI Models	HPC Wire	2026-07-27	United States	Photonics & Optical Comms
S4-03	Ayar Labs Accelerates Commercial Deployment of Optical I/O Chiplets to Revolutionize AI/HPC Performance, Breaking Data Center Bottlenecks	Lightwave Online	2026-07-26	United States	Photonics & Optical Comms

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S4-04	NTT Announces Opto-Electronic Convergence Breakthrough within IOWN Initiative: Paving Way for Ultra-High-Speed, Low-Power Next-Gen Computing and Networking	TechJapan Daily	2026-07-25	Japan	Photonics & Optical Comms
S4-05	Marvell Begins Initial Sample Shipments of 1.6T LPO Transceivers for AI/HPC Clusters, Reducing Data Center Power and Cost	Data Center Dynamics	2026-07-24	United States	Photonics & Optical Comms
S4-06	Ciena Boosts Optical Network Capacity by 30-50% with 800Gb/s and 1.6Tb/s Coherent Tech for AI Workloads	RCR Wireless News	2026-07-23	US	Photonics & Optical Comms
S4-07	Photonic Circuit Switching and Frequency Combs Emerge to Break Copper Limits in AI Data Centers	Photonics Spectra	2026-07-29	US	Photonics & Optical Comms
S4-08	Infinera Powers Algar Telecom's Subsea Network Upgrade with ICE6 800G and GX Series, Boosting Capacity and Efficiency	ADVFN	2026-07-23	Mexico	Photonics & Optical Comms
S4-09	AI Data Centers Accelerate Shift to 800G/1.6T Optical Interconnects; OCI MSA Defines Common Optical Physical Layer	MLQ News	2026-07-23	US	Photonics & Optical Comms
S4-10	ZTE Achieves World-First EUCC Substantial-Level Cybersecurity Certification for Complete OTN Portfolio	MarketScreener	2026-07-29	China	Photonics & Optical Comms
S4-11	Lumentum CEO Predicts Imminent Shift from Copper to Optical Interconnects in AI Data Centers, Citing InP Manufacturing as Key Bottleneck	Teahose	2026-07-29	US	Photonics & Optical Comms
S4-12	Algorithm-Designed Silicon Nitride Photonic Circuits Achieve Unprecedented Miniaturization and Optimal Performance for Next-Gen Sensing, Telecom, and Quantum Tech	Max Planck Institute / Harvard SEAS	2026-07-24	Germany / USA	Photonics & Optical Comms
S4-13	Zacks Equity Research: Cisco's Acacia Business Projects \$4B Revenue from Hyperscalers Driven by 800G Coherent Optical Device Demand	Zacks Equity Research	2026-07-29	US	Photonics & Optical Comms
S4-14	Nokia's Breakthrough: Coherent Optics & AI Transform Fiber into Intelligent Sensors for Network Security	Nokia.com	2026-07-28	Finland	Photonics & Optical Comms
S4-15	Cisco's Bill Gartner on AI Data Center Optics Economics: 1.6T Devices Key to Unlocking Scalability, Not a Bottleneck	Light Reading	2026-07-28	US	Photonics & Optical Comms
S4-16	Japanese Consortium Launches Distributed AI Processing Infrastructure Trial Linked to KYOJO CUP, Utilizing All-Photonics Network over Power Grid Fiber	IBTimes JP	2026-07-27	Japan	Photonics & Optical Comms

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S4-17	Nokia Pioneers AI-Driven Automation and Pluggable Coherent Optics for Next-Gen Optical Networks	Nokia	2026-07-28	Finland	Photonics & Optical Comms
S4-18	Nokia Reports 20% Optical Network Revenue Growth in Q2 FY 2026 Driven by AI/Cloud Demand, Announces €800-900M Investment in US Manufacturing Capacity	TelecomTV	2026-07-23	UK	Photonics & Optical Comms
S4-19	Optical Frequency Comb-Based Single-Frame Spectral Interferometry Enables High-Speed, Simultaneous Multi-Parameter Measurement of Optical Flat Plates	APL Photonics AIP Publishing	2026-07-28	US	Photonics & Optical Comms
S4-20	AI Data Centers Rapidly Transition to Photonic Interconnects Beyond Copper Limits, Driven by 800G/1.6T Devices and OCI MSA Standardization	Tom's Hardware	2026-07-23	US	Photonics & Optical Comms
S4-21	Cisco-Backed Eliyan Raises \$145M, Achieves \$1B Valuation to Solve AI Interconnect Bottlenecks with Electro-Optical Solutions	Tech Funding News	2026-07-30	UK	Photonics & Optical Comms
S4-22	IOWN Global Forum: Coherent Pluggables Drive AI Era Infrastructure Transformation by Enabling Long-Reach, High-Capacity Optical Connectivity at the Network Edge	IOWN Global Forum	2026-07-27	Japan	Photonics & Optical Comms
S4-23	University of Wisconsin Develops Full-Wave Simulation Framework for Kerr Frequency Comb Generation, Advancing Precision Measurement and Quantum Technologies	IEEE	2026-07-30	US	Photonics & Optical Comms
S4-24	PsiQuantum Secures \$125M DARPA Quantum Benchmarking Initiative Award for Photonic Quantum Computer Validation	Intelligence Community News	2026-07-23	US	Photonics & Optical Comms
S4-25	PsiQuantum Signs \$100M U.S. Commerce LOI Under CHIPS Act for Quantum Computing Development	Investopedia	2026-07-23	US	Photonics & Optical Comms
S4-26	PsiQuantum Invests \$250,000 in South Chicago Quantum Education and Workforce Development Programs	The Citizen Newspaper Group	2026-07-29	US	Photonics & Optical Comms
S4-27	Ouster Stock Hits 52-Week High Following Strategic Partnership with ARGUS Interception to Integrate Digital LiDAR into Counter-Drone Interceptors	Stocktwits	2026-07-31	US	Photonics & Optical Comms
S4-28	Lightmatter Joins NVIDIA NVLink Fusion Ecosystem, Accelerates Photonic Interconnect Strategy for AI Data Centers with \$850M Funding at \$4.4B Valuation	International Banker	2026-07-23	US	Photonics & Optical Comms
S4-29	Scantinel Photonics, Now Part of MicroVision, Commercializes FMCW LiDAR-on-Chip with Over 300m Range for Autonomous Driving	eMove360° Europe	2026-07-30	Germany	Photonics & Optical Comms

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S4-30	GlobalFoundries Secures \$300M U.S. Department of Commerce Award to Accelerate Silicon Photonics R&D,, Bolstering U.S. Leadership	GlobalFoundries	2026-07-29	US	Photonics & Optical Comms
S4-31	Leading Foundries Accelerate Silicon Photonics Mass Production for AI/HPC Demand: UMC Ships First 12-inch Wafers, TSMC's COUPE Enters Production	TrendForce	2026-07-30	Taiwan	Photonics & Optical Comms
S4-32	Innoviz Technologies Lands Inaugural \$3.5M Defense Contract for Counter-Drone LiDAR Systems	The Defence Blog	2026-07-31	Israel	Photonics & Optical Comms
S4-33	Luminar Technologies Files for Bankruptcy, Volvo Completely Drops LiDAR from EX90 and ES90 Models, Offers Owner Compensation	Moomoo	2026-07-29	US	Photonics & Optical Comms
S4-34	Micro-Transfer Printing Unlocks Scalable Heterogeneous Integration for Next-Gen Silicon Photonics: A Ghent University and imec Breakthrough	Photonics Online	2026-07-30	Belgium	Photonics & Optical Comms
S4-35	U.S. Representative Moolenaar Warns of Chinese LiDAR National Security Risks in CNBC Report, Proposes Phase-Out Legislation	John Moolenaar (U.S. Representative)	2026-07-27	US	Photonics & Optical Comms
S4-36	NVIDIA and Broadcom Commence Mass Production of Co-Packaged Optics (CPO) Switches: Poised to Cut Data Center Power Consumption by Up to 3.5x	Electronics360	2026-07-30	US	Photonics & Optical Comms
S4-37	Nano-Printed Scaffolds Enable Direct Molecular Access to Quantum Photonics, Advancing Sensing Capabilities	AZoNano	2026-07-31	Unknown	Photonics & Optical Comms
S4-38	Physics and Promise of Photonic Quantum Computing: PsiQuantum's Approach Utilizing Photons as Qubits	Quantagram (via Medium)	2026-07-25	US	Photonics & Optical Comms
S4-39	U.S. Naval Research Laboratory Accelerates Quantum Innovation with New Quantum Materials and Integrated Photonic Devices	U.S. Navy	2026-07-24	US	Photonics & Optical Comms
S4-40	Photonics21 Spearheads Europe's Shift to Predictive Healthcare, Harnessing AI and Photonics for Early Detection	PIC Magazine / Photonics21	2026-07-24	Europe	Photonics & Optical Comms

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