



Q-Newsletter

HIGHLIGHT OF THE WEEK

[Quantum Beyond Borders: The UK-US Partnership](#)

This week, the UK's quantum ecosystem took two significant steps. First, the UK government joined a global quantum partnership with the G7 and Australia, aiming to coordinate research on quantum technologies tied to national security, led by Science Minister Patrick Vallance.

Second, the West of England Mayoral Combined Authority (WECA), in collaboration with University of Bristol and US-based Elevate Quantum, signed the UK's first regional quantum tech-agreement with America's Mountain West region (Colorado/New Mexico/Wyoming), focusing on aligning academic research, supply chains and scale-up of quantum businesses. The agreement builds on the broader UK-US "Tech Prosperity Deal" and highlights how regional clusters are now part of the quantum strategy.

Both developments tie into UK Quantum Week (3-7 November), showing how quantum isn't just a lab-science topic but a key piece of the UK's industrial, security and innovation agenda.

RESEARCH

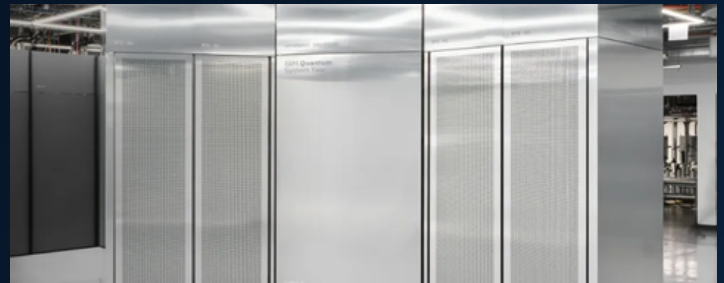
[Quantum Sensing in the Hunt for Dark Matter](#)

Researchers Adriel I. Santoso and Le Bin Ho at Tohoku University have recently unveiled a networked quantum-sensor architecture designed to detect faint dark matter signals. The approach uses arrays of superconducting qubits as ultra-sensitive detectors rather than computational units. In the experiment, groups of four and nine qubits were arranged in different network topologies (ring, line, star, fully-connected) and operated using techniques drawn from quantum metrology and machine learning style optimisation. The team found that, under realistic noise

conditions, sensor networks outperformed traditional single-sensor setups in detecting weak, elusive signals. The significance lies in both the hardware and the system design: by linking multiple quantum sensors and carefully tuning their correlations and network structure, the researchers achieved a measurement sensitivity boost beyond what individual sensors could offer. The work expands the scope of quantum sensing hardware deployment in advanced research, showing how quantum sensor networks can be engineered and optimised for practical performance. Beyond potential dark matter detection, the group's network architectures extend to applications in gravitational wave, spectroscopy, and magnetometry research.

MARKET

[IBM Inaugurates Europe's First Quantum System Two](#)



IBM and the Basque Government have inaugurated Europe's first IBM Quantum System Two in Donostia-San Sebastián, installing production-grade quantum hardware inside a new regional quantum centre. The system anchors a broader strategy to build skills, attract industry projects, and give European researchers and companies on-prem access to IBM's Heron-class processors, without relying solely on remote data centres. Framed as infrastructure, not a lab demo, the move signals a maturing market: regions are funding permanent quantum capacity to seed local ecosystems, workforce training, and early commercial pilots. For buyers, it's a practical path to hybrid workflows with classical high performance computing and procurement frameworks.