

Australian Startup Achieves Breakthrough in Scalable Quantum Chip Production



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Sydney, September 25 – An Australian nanotechnology startup has proven that silicon-based quantum computer chips can be produced at scale with industrial-level accuracy, marking a major milestone in the global race toward practical quantum computing.

Diraq, a spinoff from the University of New South Wales (UNSW), demonstrated that its quantum processors consistently deliver more than 99 percent accuracy in two-qubit operations, the level

required for quantum computers to become commercially viable.

According to a UNSW statement, the research shows that Diraq's chips are not just laboratory prototypes but can be manufactured in real-world industrial environments. The results, published in Nature, were achieved in collaboration with Belgium's Interuniversity Microelectronics Center (IMEC), a leading European semiconductor institute.

The study confirmed that Diraq-designed and IMEC-fabricated chips perform as reliably when produced on a semiconductor fabrication line as they do under experimental laboratory conditions at UNSW.

This breakthrough brings Diraq closer to achieving utility-scale quantum computing – the point at which the commercial benefits of a quantum computer outweigh operational costs.

Industry experts say the achievement represents a significant step toward integrating quantum processors into mainstream semiconductor production, accelerating progress toward scalable, cost-effective quantum technologies.