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# Xanadu's PennyLane Integrates with the Munich Quantum Toolkit to Advance Quantum Compilation

TORONTO and MUNICH, Feb. 25, 2026 (GLOBE NEWSWIRE) -- [Xanadu Quantum Technologies Inc.](#) ("Xanadu"), a leading photonic quantum computing company, today announced that it has [successfully integrated](#) PennyLane and its Catalyst compiler with the Munich Quantum Toolkit (MQT). MQT is developed by teams at the Chair for Design Automation of the Technical University of Munich (TUM) and the Munich Quantum Software Company (MQSC) and enables an interoperable and scalable quantum software stack, based on mature classical compilation technology. This collaboration creates more accessible quantum software by connecting a user-friendly Python interface through Xanadu's [PennyLane](#) to high-performance code that is the foundation of [Catalyst](#) and [MQT](#).

As quantum hardware scales, quantum programs are becoming exponentially more complex, and compiling these larger programs efficiently is expected to become a major challenge in the quantum computing stack. Together, PennyLane, Catalyst, and [MQT's Core project](#) bring complementary capabilities. PennyLane offers an intuitive interface for writing hybrid quantum-classical programs, while Catalyst and MQT handle the heavy-lifting for compilation by using specialized, high-performance tools that have been built over decades in classical computing.

Users can now access advanced compilation techniques from both tools by adding a single line of code to their PennyLane programs. This integration works seamlessly in the background and lowers barriers for designing quantum algorithms using software – allowing researchers and developers to focus on innovation rather than managing complex software configurations.

"This integration represents a significant step forward for the quantum software ecosystem and a great collaboration between leading players from Canada and Europe," said Robert Wille, Full Professor representing TUM.

Lukas Burgholzer, Chief Technology Officer of MQSC, adds: "By bringing MQT's advanced tools for verifying and optimizing quantum programs directly into the Catalyst infrastructure, we are giving researchers and developers the best of both worlds: a convenient frontend with state-of-the-art tools underneath that run automatically and efficiently."

"To make quantum computing practical, we need a software stack that is both modular and high performing. Our work with TUM and MQSC demonstrates the power of unifying tools with unique specializations into a single, cohesive workflow," said Christian Weedbrook, Founder and Chief Executive Officer of Xanadu. "We are accelerating the development cycle and ensuring that quantum programs are not only faster but also more efficient by enabling PennyLane users to leverage MQT's methods without changing their code structure."

The project highlights the use and value of modular infrastructure for quantum software. Connecting complementary technologies from different sources – such as those from Xanadu, TUM,

and MQSC – allows for a “mix-and-match” approach that unlocks the software stack to become more accessible for users. The result is a flexible infrastructure where specialized technologies can interoperate freely, fostering greater connectivity across the growing quantum software ecosystem.

## About Xanadu

Xanadu is a Canadian quantum computing company with the mission to build quantum computers that are useful and available to people everywhere. Founded in 2016, Xanadu has become one of the world's leading quantum hardware and software companies. The company also leads the development of [PennyLane](#), an open-source software library for quantum computing and application development. Visit [xanadu.ai](https://xanadu.ai) or follow us on X [@XanaduAI](#).

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## About the Chair for Design Automation at the Technical University of Munich

With over 600 professors and approx. 45,000 students, the Technical University of Munich (TUM) is one of the largest and renowned universities in Germany and worldwide—covering core domains in natural science, engineering, life science and medicine. With an annual budget of over €1.7 billion, including almost €400 million of competitive third-party funds, TUM is focused on strengthening the excellence of its core competencies in research, teaching and learning, whilst also promoting groundbreaking and interdisciplinary research.

The Chair for Design Automation, headed by Prof. Robert Wille, develops methods that support engineers and end users in designing complex systems and applications. This includes the automatic design and simulation of electronic circuits and systems, as well as future and emerging technologies such as quantum computing, microfluidics, and nanotechnologies. The group, which is also part of the Munich Quantum Valley initiative, has a strong track record on making its developments available as open-source projects (cf. the Munich Quantum Toolkit). More information about the group is available at [cda.cit.tum.de](https://cda.cit.tum.de).

## About Munich Quantum Software Company (MQSC)

The Munich Quantum Software Company (MQSC) is a German SME founded in January 2025 as a spin-off from TUM and the Munich Quantum Valley (MQV), one of Europe's largest quantum-computing initiatives. MQSC specializes in developing industry-grade software solutions for quantum computing. Its mission is to bridge the gap between academic innovation and practical applications by creating and providing reliable, production-ready software solutions for quantum computers. These include frameworks and components for software stacks and HPCQC integration, compilers, hardware/software interfaces, and tools for the automated orchestration of complex quantum applications.

The founding team has more than 15 years of experience in quantum-computing software. In addition to projects and joint developments with other industrial partners, the team plays a key role in the development and maintenance of the Munich Quantum Toolkit (MQT) as well as the Munich Quantum Software Stack (MQSS). Visit [munichquantum.software](https://munichquantum.software).

## Business Combination

Xanadu recently announced a business combination agreement with Crane Harbor Acquisition Corp. (“Crane Harbor”) (Nasdaq: CHAC), a publicly traded special purpose acquisition company. The combined company, Xanadu Quantum Technologies Limited (“NewCo”), is expected to be capitalized with approximately US\$500 million in gross proceeds, comprising approximately US\$225 million from Crane Harbor's trust account, assuming no redemptions by Crane Harbor's public stockholders, as well as US\$275 million from a group of strategic and institutional investors participating in the transaction via a common equity committed private placement investment. NewCo is expected to be listed on the Nasdaq Stock Market and on the Toronto Stock Exchange.

## About Crane Harbor Acquisition Corp

Crane Harbor Acquisition Corp is a blank check company formed for the purpose of effecting a merger, share exchange, asset acquisition, share purchase, reorganization or similar business combination with one or more businesses.

## **Additional Information About the Proposed Transaction and Where to Find It**

The proposed business combination transaction will be submitted to shareholders of Crane Harbor and Xanadu for their consideration. NewCo and Crane Harbor have jointly filed a registration statement on Form F-4 (the "Registration Statement") to the U.S. Securities and Exchange Commission (the "SEC"). The Registration Statement includes a proxy statement/prospectus to be distributed to Crane Harbor's shareholders in connection with Crane Harbor's solicitation of proxies for the vote by Crane Harbor's shareholders in connection with the proposed transaction and other matters to be described in the Registration Statement, as well as the prospectus relating to the offer of the securities to be issued to Xanadu's shareholders in connection with the completion of the proposed transaction. After the Registration Statement has been publicly filed and declared effective by the SEC, a definitive proxy statement/prospectus and other relevant documents will be mailed to Crane Harbor shareholders as of the record date established for voting on the proposed transaction. Before making any voting or investment decision, Crane Harbor's shareholders and other interested persons are advised to read, once available, the preliminary proxy statement/prospectus and any amendments thereto and, once available, the definitive proxy statement/prospectus, as well as other documents filed with the SEC by NewCo and/or Crane Harbor in connection with the proposed transaction, as these documents will contain important information about NewCo, Crane Harbor, Xanadu and the proposed transaction. Shareholders may obtain a copy of the preliminary or definitive proxy statement/prospectus, once available, as well as other documents filed by NewCo and/or Crane Harbor with the SEC, without charge, at the SEC's website located at [www.sec.gov](http://www.sec.gov), Crane Harbor's website at [www.craneharboracquisition.com](http://www.craneharboracquisition.com) or by emailing [investors@xanadu.ai](mailto:investors@xanadu.ai).

## **No Offer or Solicitation**

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## **Participants in the Solicitation**

NewCo, Crane Harbor, Xanadu and certain of their respective directors, executive officers and other members of management and employees may, under SEC rules, be deemed to be participants in the solicitation of proxies from Crane Harbor's shareholders in connection with the proposed transaction. Information regarding the persons who may, under SEC rules, be deemed participants in the solicitation of Crane Harbor's shareholders in connection with the proposed transaction will be set forth in proxy statement/prospectus when it is filed by NewCo with the SEC. You can find more information about Crane Harbor's directors and executive officers in Crane Harbor's final prospectus related to its initial public offering filed with the SEC on April 25, 2025 and in the subsequent Quarterly Reports on Form 10-Q filed by Crane Harbor with the SEC. Additional information regarding the participants in the proxy solicitation and a description of their direct and indirect interests will be included in the proxy statement/prospectus when it becomes available. Shareholders, potential investors and other interested persons should read the proxy statement/prospectus carefully when it becomes available before making any voting or investment decisions. You may obtain free copies of these documents from the sources described above.

