Press Release

Zurich, Switzerland, October 31, 2018

Information can be disclosed as of November 1, 2018

First Commercial Quantum Computing Control System for Europe's Quantum Computer

Zurich Instruments has launched two new products, the UHFQA Quantum Analyzer and the PQSC Programmable Quantum System Controller to empower the quantum research community. Together with its HDAWG Arbitrary Waveform Generators and the LabOne® control software, the new products comprise the first commercial Quantum Computing Control System (QCCS). The Zurich Instruments QCCS is an integrated and comprehensive system of individually proven instruments and software designed to manage the high complexity of a quantum computing setup. It provides the cutting-edge control electronics essential to initialize, manipulate, and read out quantum bits with the fidelity required for quantum computers, while providing an effective interface to higher level components of the full quantum computing stack.

First Commercial Quantum Analyzer

The Zurich Instruments UHFQA Quantum Analyzer is the first commercial instrument dedicated to read out superconducting and spin qubits with high speed and fidelity. The UHFQA will help quantum researchers to scale up their systems to 100 or more qubits and improve the performance of the calculations, whilst limiting the complexity and costs.

First Quantum System Controller

The Zurich Instruments PQSC Programmable Quantum System Controller is the first commercial instrument designed to precisely synchronize all the electronic components required to control a quantum computer. With its low-latency real-time communication links, the PQSC overcomes the practical limitations of traditional control approaches, making automated and rapid qubit calibration routines a reality. The PQSC can be programmed by the user to optimize for rapid tune-up and error correction, while the processing can be adapted to the specific algorithm and computer architecture used.

Europe's Open Quantum Computer – OpenSuperQ

The company's expertise in quantum research instrumentation, and the two newly launched products, will be used in the recently announced EU project OpenSuperQ. This international effort aims to develop an Open Superconducting Quantum Computer of up to 100 qubits, including all aspects of the full quantum computing stack. Zurich Instruments, in partnership with nine other collaborators, will share a budget of € 10.33 million over an initial period of three years.Within the OpenSuperQ project, Zurich Instruments is responsible for the instrumentation that executes the quantum algorithms and reads out the qubit states. Jan Benhelm, Head of Marketing at Zurich Instruments, says, "*The entire team at Zurich Instruments is excited to continue the intense collaboration with the top researchers in the field. The new PQSC and the new Quantum Analyzer will contribute to a fast and sustainable advance of the OpenSuperQ project and foster the global leader ship of Zurich Instruments in quantum computing control systems."*

About Zurich Instruments

Zurich Instruments makes cutting-edge instrumentation for scientists and technologists in advanced laboratories who are passionate about phenomena that are often notoriously difficult to measure. The company's core offering includes lock-in amplifiers, phase-locked loops, arbitrary waveform generators, impedance analyzers, and now also quantum computing control systems.

Zurich Instruments has revolutionized scientific instrumentation in the medium-frequency (MF) to ultra-high-frequency (UHF) ranges by combining frequency-domain tools and time-domain tools within each product. This approach reduces the complexity of laboratory setups, removes sources of problems and provides new measurement strategies that support the progress of research.

Resources

Zurich Instruments quantum products website: www.zhinst.com/products/quantum-computing
Zurich Instruments website: www.zhinst.com
OpenSuperQ project website: http://opensuperq.eu

Press Contact

Zurich Instruments AG
Dr. Jan Benhelm
Technoparkstrasse 1
8005 Zurich, Switzerland
info@zhinst.com
+41-44-515-04-10