FutureHorizons

The Global Semiconductor Industry Analysts

FH MONDAY

26 December 2022

IBM and Rapidus form strategic partnership

Rapidus, a newly-formed advanced Logic foundry, will leverage IBM's semiconductor R&D leadership, including 2-nanometer node technology.IBM and Rapidus today announced a joint development partnership to advance logic scaling technology as part of Japan's initiatives to become a global leader in semiconductor research, development, and manufacturing.

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Quantum HPC Collaboration Targets Energy Transition

Italian energy company Eni and neutral-atom quantum computing startup Pasqal are collaborating to develop quantum-based high-performance computing (HPC) solutions for the energy sector in a bid to accelerate the green-energy transition.

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Flexible Cryogenic Cables Simplify Quantum Computer Design

Delft Circuits announced its inclusion in the BICEP project in Antarctica, supporting NASA's Jet Propulsion Laboratory (JPL) at the California Institute of Technology and other project partners. The team at JPL determined that advanced cables made by Delft Circuits will be installed in the telescope's cryostat, as part of its new camera.

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TALK TO US

MosChip and Cadence Partner

MosChip Institute of Silicon Systems (M-ISS) has been contributing to India's semiconductor design ecosystem by training thousands of students in VLSI design since 2011. M-ISS is a fully owned subsidiary of MosChip Technologies Ltd, India's first publicly traded fabless semiconductor company.

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EVENTS

Silicon Chip Industry Seminar

- March 2023– London UK

Industry Forecast Briefing

– January 2023– London UK

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NXP Driving Carbon Reduction, Energy Savings in Auto Industry

The global automotive industry's move toward electrification and intelligence is driving up demand further for chips, making the automotive market a battleground for semiconductor makers in recent years.

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IBM and Rapidus form strategic partnership to build advanced semiconductor technology and ecosystem in Japan

Rapidus researches, develops, designs, manufactures, and sells advanced logic semiconductors, and was established with the endorsement of major Japanese companies. As part of this agreement, Rapidus and IBM will further develop IBM's breakthrough 2-nanometer node technology for implementation by Rapidus at its fab in Japan.

This work will leverage IBM's decades of expertise in semiconductor research and design. In 2021, IBM announced that it had developed the world's first 2 nm node chip, which is projected to achieve 45% better performance or 75% more energy efficiency than leading 7 nm chips. IBM has a long history of successful joint development partnerships with Japanese semiconductor manufacturers in advanced logic and memory technology, as well as Japanese equipment and material suppliers.

Quantum HPC Collaboration Targets Energy Transition

Italian energy company Eni and neutral-atom quantum computing startup Pasqal are collaborating to develop quantum-based high-performance computing (HPC) solutions for the energy sector in a bid to accelerate the green-energy transition.

Quantum computing uses the principles of quantum physics to solve problems that are beyond the capabilities of conventional computers. Paris-based Pasqal creates quantum computers from ordered neutral atoms arranged in 2D and 3D arrays.

Through its full-stack approach, Pasqal is creating quantum algorithms to improve current HPC processes for a range of energy applications that Eni is researching across its value chain (upstream, downstream, chemicals and renewables). Eni has been an investor in Pasqal since 2021 through venture-capital arm Eni Next, which invests in startups addressing the energy transition to a zero-carbon future. Pasqal thus far has amassed more than €40 million in stock and non-dilutive financing from a variety of sources and is using the funds to produce its 100-qubit commercial quantum computer and create its next-generation technologies

Flexible Cryogenic Cables Simplify Quantum Computer Design

Delft Circuits announced its inclusion in the BICEP project in Antarctica, supporting NASA’s Jet Propulsion Laboratory (JPL) at the California Institute of Technology and other project partners. The team at JPL determined that advanced cables made by Delft Circuits will be installed in the telescope’s cryostat, as part of its new camera.

The JPL team will also replace the telescope’s sensors with new thermal kinetic inductance detectors (TKIDs), which are superconductive detectors leveraging the properties of quantum mechanics. The infrastructure requirements are extremely similar to what is required to set up and measure qubits in a quantum system.

MosChip and Cadence Partner to Expand and Enhance VLSI Training Program

MosChip Institute of Silicon Systems (M-ISS) has been contributing to India’s semiconductor design ecosystem by training thousands of students in VLSI design since 2011. M-ISS is a fully owned subsidiary of MosChip Technologies Ltd, India’s first publicly traded fabless semiconductor company.

The Institute has been collaborating with a leading EDA tool provider, Cadence Design Systems, to train students in using cutting edge CAD tools and create talent pool for rapidly growing semiconductor industry.

In partnership with Cadence, the Institute is moving into a world-class facility in Hyderabad to expand and enhance its program. The state-of-the-art infrastructure is spread across 15,000sqft and can accommodate more than 600 students per year (300 per batch at a time) to be trained in multiple domains such as physical design, analog layout, design verification, and embedded systems.

NXP Driving Carbon Reduction, Energy Savings in Automotive Industry

The global automotive industry’s move toward electrification and intelligence is driving up demand further for chips, making the automotive market a battleground for semiconductor makers in recent years. NXP Semiconductors, which has been focusing on enabling energy savings and carbon reduction, aims to leverage its technology innovations to help drive the automotive industry toward a sustainable world.

Traditional fuel vehicles emit about 2.2kg of carbon dioxide per liter of gasoline, which can be regarded as one of the major causes that have accelerated global warming. Because of this, many countries have set a schedule to ban the sale of fuel vehicles to slow down climate change. This has accelerated the entry of electric vehicles (EVs) into people’s lives. Market analyst TrendForce estimates that global shipments of new energy vehicles would reach 14.5 million units this year, and around 25 million units in 2025