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The Global Semiconductor Industry Analysts

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Silicon Photonics Sticks Its Head Above the Parapet

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Murata and Michelin Partner to Improve Tire Management

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TALK TO US

Synthetic Quantum Systems Help Solve Complex Real-World Applications

Simulation using synthetic quantum systems is a potential tool for addressing challenging NP-Hard problems (non-deterministic polynomial-time hardness), which is a task where traditional numerical approaches frequently fail. Pasqal, a French company founded in 2019 by five scientists — Christophe Jurczak, Alain Aspect, Antoine Browaeys, Thierry Lahaye, and CEO Georges-Olivier Reymond —

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EVENTS

Silicon Chip Industry Seminar

-November 2021– London UK

Industry Forecast Briefing

– January 2022– London UK

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Strong Memory Demand Fuels Global Chip

The global semiconductor industry topped $150 billion in revenue during the third quarter, fueled by strong memory sales that rose 13.8 percent over the previous quarter,Preliminary data shows the NAND market reached nearly $18.7 billion in 3Q21," said Craig Stice, Omdia's chief semiconductor analyst.

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Silicon Photonics Sticks Its Head Above the Parapet

Yole initially reported on silicon photonics applications in 2011. It is interesting to compare our vision at that time with what is happening today.

In 2011, silicon photonics was still an emerging technology, with only two industrial players: Luxtera and Kotura. At the market level, it was obvious that datacom would be the primary market for silicon photonics, though the medical sector had already been identified as an interesting opportunity.

At the start of the 2010s, silicon photonics suffered from a lack of industrial infrastructure for design and foundry activities. When Luxtera and STMicroelectronics announced a partnership early in the decade, it was seen as a first step toward setting up a foundry service dedicated to silicon photonics. The total market for silicon photonics at that time was valued at $65 million (mainly for datacom).

Intel Unveils Breakthroughs to Propel Moore's Law Beyond 2025

In its relentless pursuit of Moore's Law, Intel Corp. is unveiling key packaging, transistor and quantum physics breakthroughs fundamental to advancing and accelerating computing well into the next decade. At IEEE International Electron Devices Meeting (IEDM) 2021, Intel outlined its path toward more than 10x interconnect density improvement in packaging with hybrid bonding, 30% to 50% area improvement in transistor scaling, major breakthroughs in new power and memory technologies, and new concepts in physics that may one day revolutionize computing.

"At Intel, the research and innovation necessary for advancing Moore's Law never stops. Our Components Research Group is sharing key research breakthroughs at IEDM 2021 in bringing revolutionary process and packaging technologies to meet the insatiable demand for powerful computing that our industry and society depend on. This is the result of our best scientists' and engineers' tireless work. They continue to be at the forefront of innovations for continuing Moore's Law," said Robert Chau, Intel Senior Fellow and general manager of Components Research.

Murata and Michelin Partner to Improve Tire Management Operations

Murata Manufacturing Co. Ltd has co-developed a new generation of RFID modules with Michelin that are embedded into tires. The robust passive RFID tags require no external power supply and will continue to operate while being driven on for extremely high mileages. This simple yet elegant technology delivers low cost and easy tire traceability throughout its entire lifespan, enabling the management of inventory logistics, aftermarket maintenance, and recycling operations.

Currently, Michelin uses the RFID tags in commercial vehicles, such as lorries, busses and passenger cars. Michelin is working towards expanding this roll out to 100% of the MICHELIN tires from 2024. Importantly, the company anticipates that key players in the market will embrace this technology for improved tire traceability.

Synthetic Quantum Systems Help Solve Complex Real-World Applications

Simulation using synthetic quantum systems is a potential tool for addressing challenging NP-Hard problems (non-deterministic polynomial-time hardness), which is a task where traditional numerical approaches frequently fail. Pasqal, a French company founded in 2019 by five scientists — Christophe Jurczak, Alain Aspect, Antoine Browaeys, Thierry Lahaye, and CEO Georges-Olivier Reymond — developing a quantum processing unit (QPU) particularly suited for simulation. Pasqal also announced a collaboration with Nvidia to build a Quantum Computing Center of Excellence, featuring a cluster of 10 Nvidia DGX A100 systems with Nvidia InfiniBand networking to enhance its portfolio of solutions. Moreover, they received Usine Nouvelle's Start-Up of the Year 2021 prize, during the Assises de L'Industrie event in Paris, which focused on the theme "Rebuilding the French Industry."

Strong Memory Demand Fuels Global Chip Revenues

The global semiconductor industry topped $150 billion in revenue during the third quarter, fueled by strong memory sales that rose 13.8 percent over the previous quarter,

"Preliminary data shows the NAND market reached nearly $18.7 billion in 3Q21," said Craig Stice, Omdia's chief semiconductor analyst. "The NAND market was fueled by strong shipment growth to meet demand coming out of the enterprise and data center markets, as well as stable demand out of the smartphone market."

Average selling prices during the third quarter rose nearly 5 percent on a quarterly basis "as supply and demand remained slightly out of balance," Stice added. The supply-demand imbalance helped fuel price increases as pandemic-driven chip shortages drag on. That, along with seasonality and the strong memory revenue propelled quarterly chip revenues to $153.2 billion.