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The Global Semiconductor Industry Analysts

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Samsung Develops Industry's First 12nm-Class DDR5 DRAM

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Sonic Lift-Off Tech Aims to Reduce Semiconductor Costs

Semiconductor device manufacturing requires the availability of high-quality wafers with perfectly flat and smooth surfaces. The quality of a wafer's surface is fundamental to ensuring high-performing and reliable devices.

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ROHM's New MOSFETs Contribute to Higher Efficiency

ROHM Semiconductor today announced they have developed a compact, high efficiency 20V N-channel MOSFET (RA1C030LD), optimized for switching in small, thin devices, including smartphones and wearables such as wireless earbuds and other hearable equipment.

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TALK TO US



Hyundai, Ford expand partnerships

The future of autonomous and electric vehicles holds great promise for many technology companies, from sensor firms to chip designers to AI and software developers. But don't leave out quantum computing firms either.

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Nvidia says it has a quicker, cheaper way to train robotic hands

While robots increasingly can walk and run and climb over obstacles with amazing and disconcerting ease, it has been much harder for robotic systems to imitate the fine motor skills that the human hand is capable of, and which most of us take for granted.

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Samsung Electronics Develops Industry's First 12nm-Class DDR5 DRAM

Samsung Electronics Co., Ltd., the world leader in advanced memory technology, today announced the development of its 16-gigabit (Gb) DDR5 DRAM built using the industry's first 12-nanometer (nm)-class process technology, as well as the completion of product evaluation for compatibility with AMD.

"Our 12nm-range DRAM will be a key enabler in driving market-wide adoption of DDR5 DRAM," said Jooyoung Lee, Executive Vice President of DRAM Product & Technology at Samsung Electronics. "With exceptional performance and power efficiency, we expect our new DRAM to serve as the foundation for more sustainable operations in areas such as next-generation computing, data centers and AI-driven systems."

"Innovation often requires close collaboration with industry partners to push the bounds of technology," said Joe Macri, Senior VP, Corporate Fellow and Client, Compute and Graphics CTO at AMD. "We are thrilled to once again collaborate with Samsung, particularly on introducing DDR5 memory products that are optimized and validated on 'Zen' platforms."

Sonic Lift-Off Tech Aims to Reduce Semiconductor Costs

Semiconductor device manufacturing requires the availability of high-quality wafers with perfectly flat and smooth surfaces. The quality of a wafer's surface is fundamental to ensuring high-performing and reliable devices. It is necessary to prevent the formation of impurities or surface irregularities that could introduce defects in the final component and lead to increased costs.

An innovative device lift-off and substrate reuse technology based on the power of sound, under development at Crystal Sonic, Inc., aims to lower per-device manufacturing costs substantially.

Today, nearly 50% of wide bandgap (WBG) device manufacturing costs are attributed to the substrate material. At the same time, WBG substrate wafer demand is ramping up, mainly driven by applications including automotive, solar inverters, motor, and wind inverters, particularly for silicon carbide (SiC).

ROHM's New MOSFETs Contribute to Higher Efficiency and Safer Operation with an Original Insulation Structure

ROHM Semiconductor today announced they have developed a compact, high efficiency 20V N-channel MOSFET (RA1C030LD), optimized for switching in small, thin devices, including smartphones and wearables such as wireless earbuds and other hearable equipment.

In recent years, the increasing sophistication and power requirements of compact devices have resulted in larger batteries that reduce the space available for mounting components. At the same time, there is a limit to the size of the battery, so to ensure more efficient use of battery power the power loss of mounted components must be minimized.

Hyundai, Ford Expand Partnerships With Quantum Computing Firms

The future of autonomous and electric vehicles holds great promise for many technology companies, from sensor firms to chip designers to AI and software developers. But don't leave out quantum computing firms either. They increasingly are looking to the automotive sector as a field for near-term market opportunities where quantum computing and hybrid classical-quantum simulations can deliver value.

Hyundai Motor Company and IonQ, a firm developing its own quantum computers and that counts both Hyundai and Kia as investors, have been working together for about a year. They initially focused on a project that used quantum computing resources to help simulate the chemical reaction that occur in electric vehicle batteries with a goal of optimizing these batteries for longer life, higher quality and lower cost.

Nvidia Says It Has A Quicker, Cheaper Way To Train Robotic Hands

While robots increasingly can walk and run and climb over obstacles with amazing and disconcerting ease, it has been much harder for robotic systems to imitate the fine motor skills that the human hand is capable of, and which most of us take for granted.

Deep Reinforcement Learning (RL) techniques, which can train a neural network to learn by trial and error how to control the joints of a robot, offer a method to advance these capabilities. However, there are 27 joints in the human hand, and billions of samples are needed to run Deep RL for such a project, making it impractical.

Nvidia believes Isaac Gym, which the company has described as a GPU-accelerated "physics simulation environment for reinforcement learning," can help. The simulation environment is related to the company's Isaac Sim robotics simulator, and Nvidia said this week that Isaac Gym, now available in preview release, enables robots to be trained inside a simulated universe that can run more than 10,000 times faster than the real world.