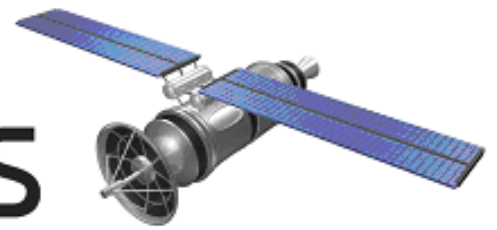


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The Global Semiconductor Industry Analysts

FH MONDAY

7 October 2019

TSMC, Arm Show 3DIC Made of Chiplets

SANTA CLARA, Calif. — TSMC provided a peek at its plans for packaging three-dimensional chips that push performance higher, power consumption lower and transistor density further, as Moore's Law loses steam.

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Silicon Carbide: a Love-Hate Relationship

Silicon carbide (SiC) has excellent properties as a semiconductor material, especially for power conversion and control. However, SiC is extremely rare in the natural environment. As a material, it was first discovered in tiny amounts in meteorites, which is why it is also called "semiconductor material that has experienced 4.6 billion years of travel"

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TALK TO US



Alibaba unveils powerful AI Inference chip

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Lattice Affirms Refocus with Instant-On Video Bridge

Neatly exemplifying the refocus detailed at the company's financial analyst day earlier this year, Lattice has announced an improved version of its CrossLink video bridge FPGA which adds instant-on capability.

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TSMC, Arm Show 3DIC Made of Chiplets

SANTA CLARA, Calif. — TSMC provided a peek at its plans for packaging three-dimensional chips that push performance higher, power consumption lower and transistor density further, as Moore's Law loses steam.

The world's largest foundry joined with partner Arm to announce their new 7nm chiplet system using TSMC's advanced packaging at TSMC's Open Innovation Platform Ecosystem Forum in Santa Clara, Calif., last week.

The proof-of-concept chiplet system was made with multiple Arm cores and TSMC's Chip-on-Wafer-on-Substrate (CoWoS) packaging to demonstrate technologies for building a high-performance computing SoC operating at 4GHz in a 7nm FinFET process.

Huawei & Arm Meet Behind Closed Doors

SHENZHEN, China — Executives from Arm, Arm China and HiSilicon (Huawei's chip division) met behind closed doors on Wednesday morning (Sept. 25th) at the Intercontinental Hotel in Shenzhen, and when they emerged they stood for a group photo that said more about the US-China trade war than anything the three companies had actually said in four months. That snapshot served to reassure the Chinese media and the local electronics industry of the continuing cooperation among Arm, Arm China and Huawei.

Arm now maintains that nothing has really changed, despite what BBC reported last May. In that report, BBC revealed an internal memo that Arm issued to all employees, including in its China subsidiary, instructing them to stop "all active contracts, support entitlements, and any pending engagements" with Huawei and its subsidiaries.

Silicon Carbide: A Love-Hate Relationship

Silicon carbide (SiC) has excellent properties as a semiconductor material, especially for power conversion and control. However, SiC is extremely rare in the natural environment. As a material, it was first discovered in tiny amounts in meteorites, which is why it is also called "semiconductor material that has experienced 4.6 billion years of travel." Yole Development's recently published "Power Silicon Carbide (SiC): Materials, Devices and Applications - 2019 Edition" report predicts that, by 2024, the market for SiC power semiconductors will grow to \$2 billion by 2024, at an annual growth of 29%. The automotive market is undoubtedly the foremost driver, with around 50% of total device market share in 2024. In the past couple of years, wafer supply shortages have been a major bottleneck restricting SiC industry growth. Combined with increasing market demand, many players, including fabs, have recognized the need to expand their investments to fill the supply chain.

Alibaba Unveils Powerful AI Inference Chip

At Alibaba's Apsara cloud computing conference in Hangzhou, China today, the company's CTO Jeff Zhang unveiled an AI inference accelerator chip for the cloud which he claimed offers ten times the compute power of today's GPUs.

The chip, named Hanguang 800 after a legendary sword from ancient China, was described by Zhang as "the world's most powerful AI inference chip." Peak performance on ResNet50-v1 inference reached 78,563 images per second, with peak power efficiency of 500 images per second per watt. It is built on the TSMC 12nm process.

Alibaba is already using Hanguang 800 chips in its cloud infrastructure, to handle image processing, product search, translation and personalised recommendations, the company said. Using the device, the company's Pailitao service, where users upload pictures of items and search for matching products, had its performance efficiency increased by a factor of 12. This service handles one billion uploaded images each day, requiring an hour to process using the company's GPU-based infrastructure. Hanguang 800 infrastructure processed the same amount of images in 5 minutes.

Lattice Affirms Refocus With Instant-On Video Bridge

Neatly exemplifying the refocus detailed at the company's financial analyst day earlier this year, Lattice has announced an improved version of its CrossLink video bridge FPGA which adds instant-on capability. The new device, released ahead of schedule, fits well with Lattice's strategy to concentrate on low-power FPGAs for the higher-margin industrial, automotive and communications markets.

"CrossLinkPlus is available right now, ahead of schedule," said Lattice's Peiju Chiang, in an interview with EETimes. Originally scheduled for release at the end of 2019, "CrossLinkPlus is already sampling to industrial and automotive customers, and system bring-up is already in progress at our elite customers," he said.