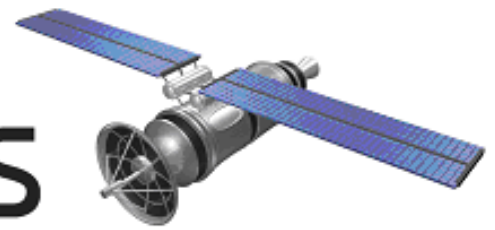


# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

13 February 2023

### Arm Cements Leadership in Processor IP Space

Arm has reinforced its leadership in the processor IP market by winning three awards at the recent EE Awards Asia: Best IP/Processor of the Year, Most Topical Product and Technology, and Featured IoT Chip Supplier.

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### Renesas Gate Driver IC Targeted at EV Inverters

Renesas Electronics Corp. has launched new gate driver IC that is designed to drive high-voltage power devices such as insulated gate bipolar transistors (IGBTs) and silicon carbide (SiC) MOSFETs for electric vehicle (EV) inverters.

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### Samsung and SK Hynix planing to procure fewer silicon wafers

TheElec - South Korean chipmakers Samsung and SK Hynix are planning to procure fewer silicon wafers used in chip production than they initially planned going forward. The chipmakers discussed the issue with their respective wafer suppliers sometime during the fourth quarter, sources said.

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### TALK TO US



### GM makes largest-ever automotive investment in EV raw materials

General Motors Co. will take a \$650 million equity investment in Canadian vendor Lithium Americas Corp. in what is claimed to be the largest-ever investment in battery raw materials by an automotive OEM.

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-March 2023- London UK

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- January 2023- London UK

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### TSMC has launched a University FinFET Programme

Educational access for university students, faculty, and academic researchers is centred on the 16nm process design kit (PDK), but TSMC is also offering multi-project wafer (MPW) services at 7nm.

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## **Arm Cements Leadership in Processor IP Space**

Arm has reinforced its leadership in the processor IP market by winning three awards at the recent EE Awards Asia: Best IP/Processor of the Year, Most Topical Product and Technology, and Featured IoT Chip Supplier.

Now in its second year, EE Awards Asia celebrates the innovation, creativity, and contributions of Asia's engineering community that have made a difference in the way we work, live, and communicate over the past year. EE Awards Asia 2022 has gathered more than 400 entries from 137 companies around the world, vying for 22 award categories. Winning in three of these categories is a testament to Arm's continuous drive toward innovation.

## **Renesas Gate Driver IC Targeted at EV Inverters**

Renesas Electronics Corp. has launched new gate driver IC that is designed to drive high-voltage power devices such as insulated gate bipolar transistors (IGBTs) and silicon carbide (SiC) MOSFETs for electric vehicle (EV) inverters.

Gate driver ICs are essential components to EV inverters, providing an interface between the inverter control MCU and the IGBTs and SiC MOSFETs that deliver power to the inverter. They receive control signals from the MCU in the low-voltage domain and transfer these signals to rapidly turn power devices on and off in the high-voltage domain.

To accommodate the higher voltages of EV batteries, the RAJ2930004AGM has a built-in 3.75kVrms isolator, which is higher than the 2.5kVrms isolator in the previous generation product, and can support power devices with a withstand voltage of up to 1200V. In addition, the new driver IC boasts superior CMTI (Common Mode Transient Immunity) performance at 150V/ns (nanosecond) or higher, providing reliable communication and increased noise immunity while meeting the high voltages and fast switching speeds required in inverter systems. The new product offers the basic functions of a gate driver in a small SOIC16 package, making it ideal for cost-effective inverter

## **Samsung And SK Hynix Planing To Procure Fewer Silicon Wafers**

TheElec - South Korean chipmakers Samsung and SK Hynix are planning to procure fewer silicon wafers used in chip production than they initially planned going forward.

The chipmakers discussed the issue with their respective wafer suppliers sometime during the fourth quarter, sources said. Silicon wafers are cut out from crystallized silicon. The chips used in electronics are cut out from these wafers.

There are five major suppliers of these wafers; Japan's Shin-Etsu and Sumco, Taiwan's GlobalWafers, Germany's Siltronic and South Korea's SK Siltron.

During the two years of the pandemic at its height, the supply of these wafers was tight and in short supply for chipmakers.

This continued in 2022 when the global economic downturn started. This is because the silicon wafer is a back-end industry and the effects of the consumer market come later to them than front-end industries that sell products directly to customers.

## **GM Makes Largest-Ever Automotive Investment In EV Raw Materials**

General Motors Co. will take a \$650 million equity investment in Canadian vendor Lithium Americas Corp. in what is claimed to be the largest-ever investment in battery raw materials by an automotive OEM.

Lithium Americas is developing the Thacker Pass mine in Nevada, which is the largest known source of lithium in the U.S. and the third largest in the world. Lithium is a key material in lithium-ion batteries that allows the repeated charging and discharging of high energy density for use in electric vehicles (EVs).

As part of the deal, the lithium carbonate from Thacker Pass will be used in GM's proprietary Ultium battery cells. Lithium Americas estimates it can extract and process from the mine enough raw materials to produce up to 1 million EVs per year.

## **TSMC Has Launched A University Finfet Programme To Develop Future Chip Design Talent For The Industry And Driving Research Chips At 7nm.**

Educational access for university students, faculty, and academic researchers is centred on the 16nm process design kit (PDK), but TSMC is also offering multi-project wafer (MPW) services at 7nm. TSMC partners in Europe, Asia and North America will offer universities a range of resources both for teaching and for research projects leading to silicon test chips. TSMC looks to 2nm in 2024

TSMC heads below 1nm with 2D transistors at IEDM

TSMC mulls second Japanese wafer fab

Design collateral for teaching is based on TSMC's N16 process, and includes tutorial design cases, training materials and instructional videos, taking students from the conventional planar transistor structure into FinFET designs.

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