

# FutureHorizons



The Global Semiconductor Industry Analysts

## **Future Horizons Newsletter**

**October 2021**

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## **Industry News By Company**

### **[Dutch AI Semiconductor Startup Axelera AI Launches With \\$12 Million Seed Round](#)**

AI semiconductor startup Axelera AI announced that it has successfully closed a seed investment round of \$12 million. The round was led by emerging technologies leader Bitfury and joined by global nanoelectronics R&D center imec and deep-tech venture capital funds Innovation Industries and imec.xpand. The funding will support the company's development of an industry-defining product powering AI applications at the edge.

Axelera AI was incubated by Bitfury Group in 2019, formerly operating as Bitfury AI until the company came out as an independent entity this year. Building on its extensive R&D focused on integrating world-class hardware and software technologies for edge and cloud-to-edge enterprise solutions, Axelera AI has also joined forces with imec since early 2020 to develop groundbreaking computing architecture for high-performance AI.

Headquartered in the AI Innovation Center of the High-Tech Campus in Eindhoven, Axelera AI also has R&D offices in Leuven, Belgium and Zurich, Switzerland. The company has already recruited a team of more than 20 senior engineers and developers from world-leading AI companies and research centers, including Intel, Qualcomm, IBM and imec.

### **[Infineon Opens High-Tech Chip Factory For Power Electronics On 300-Millimeter Thin Wafers](#)**

Munich, Germany, and Villach, Austria, 17 September 2021 – Infineon Technologies AG today officially opened its high-tech chip factory for power electronics on 300-millimeter thin wafers at its Villach site in Austria under the motto “Ready for Mission Future.” At 1.6 billion euros, the investment made by the semiconductor group represents one of the largest such projects in the microelectronics sector in Europe. The Villach site is one of the world's most modern fabs and was opened by Infineon CEO Reinhard Ploss, Infineon Austria CEO Sabine Herlitschka along with EU Commissioner Thierry Breton and Austrian Chancellor Sebastian Kurz.

Infineon set the stage for long-term, profitable growth based on energy efficiency and CO<sub>2</sub> reduction at an early stage and announced the construction of the chip factory for power electronics (“energy-saving chips”) in 2018. “The new fab is a milestone for Infineon, and its opening is very good news for our customers,” Ploss said. “The timing to create new capacity in Europe could not be better, given the growing global demand for power semiconductors. The last few months have clearly shown how essential microelectronics are in virtually every area of life. Given the accelerated pace of digitalization and electrification, we expect demand for power semiconductors to continue to grow in the coming years. The additional capacities will help us serve our customers worldwide even better, including long term.”

## **Samsung Thinks Big And LG Goes Small As OLED Market Heats Up**

Samsung Electronics has long distanced itself from OLED TVs, although Samsung Display is a major producer of the small-and-medium sized OLED panels used for smartphones and tablets.

Samsung's absence has helped LG Electronics bolster its dominance in the OLED TV market.

But that stance could shift as Samsung Display, a major display supplier to Samsung Electronics, is set to produce large-sized OLED panels called quantum dot displays within the final quarter of this year.

Industry insiders expect Samsung Electronics to sell OLED TVs early next year using the subsidiary's latest OLED panels.

The belated entry into the OLED TV market appeared to be somewhat inevitable given that Chinese competitors like BOE and Xiaomi threaten Samsung's dominance in the liquid crystal display (LCD) TV market, a mainstream and cheaper option preceding OLED.

## **Silicon Labs Unveils World's First Secure Sub-GHz SoCs with Long-Range RF**

Silicon Labs has launched new sub-1-GHz (sub-GHz) SoCs, delivering the world's first sub-GHz wireless solutions that combine long-range RF and energy efficiency with certified Arm PSA Level 3 security to meet the global demand for high-performance, battery-powered IoT products.

Expanding the company's award-winning Series 2 platform, EFR32FG23 (FG23) and EFR32ZG23 (ZG23) system-on-chip (SoC) solutions provide developers with flexible, multiprotocol sub-GHz connectivity options supporting a wide range of modulation schemes and advanced wireless technologies, including Amazon Sidewalk, mioty, Wireless M-Bus, Z-Wave, and Proprietary IoT networks.

"This new evolution of our Series 2 platform is answering the ever-increasing demands for highly-integrated, long range wireless connectivity to enable cities, industries and homes to operate more efficiently and sustainably," said Matt Johnson, president of Silicon Labs. "Silicon Labs' new secure, ultra-low-power sub-GHz solutions extend wireless communication beyond one-mile, thus expanding the boundaries for developers who need scalable high-performance wireless to drive the transformative potential of the IoT."

## World's First LoRa SoC from STMicroelectronics is Making Farming Smarter

STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has announced a design win for STM32WLE5\*, the world's first LoRa System-on-Chip (SoC). The customer application, developed by automated rubber-tapping specialist CIHEVEA, uses the low-power networking to revolutionize the automation of extracting latex from rubber trees. CIHEVEA has equipped more than 200,000 rubber trees within its Hainan rubber-tree plantation with its innovative solution to improve rubber-tapping productivity and output capacity.

The ST LoRa SoC acts as a highly efficient, low-power communication hub and control center for the Rubber Tapping Robot from CIHEVEA. The robot also includes two precision motors and a series of environmental sensors that monitor weather conditions, including temperature, air pressure, and humidity. Clamped to the tree, the STM32WLE5 transmits the sensors' data to a mesh gateway via a dedicated LoRa application network server, where the server can monitor, test and debug, and coordinate the robots in the field. Once all pre-set conditions are met, the SoC triggers the rubber tapping motors to perform autonomous cutting, which usually happens very early in the morning.

## **Industry News & Trends**

### **[Quad Leaders To Call For Securing Chip Supply Chain](#)**

TOKYO -- Leaders from the U.S., Japan, India and Australia will agree to work toward creating a safe supply chain for semiconductors when they meet for the Quad summit in Washington next week, a signal that the four-way alliance meant to counter China in the Indo-Pacific is broadening its scope.

The four nations are expected to confirm that "resilient, diverse and secure technology supply chains for hardware, software, and services" are vital to their shared national interests, according to the draft of a joint statement obtained by Nikkei.

U.S. President Joe Biden will host the first face-to-face talks among the leaders of the four-nation framework known as the Quad. Japanese Prime Minister Yoshihide Suga, Australian Prime Minister Scott Morrison and Indian Prime Minister Modi will participate.

The document sets common principles on technological development, holding that "the way in which technology is designed, developed, governed and used should be shaped by our shared democratic values and respect for universal human rights."

### **[EU Plans 'Chips Act' To Boost Domestic Semiconductor Research And Manufacturing](#)**

The European Commission is planning to propose a "European Chips Act" that would spur the development of advanced semiconductors across the European Union.

EC president Ursula von der Leyen announced the initiative at a state of the union speech this week, claiming it was key to the region's sovereignty.

"We will present a new European Chips Act," von der Leyen said. "The aim is to jointly create a state-of-the-art European chip ecosystem, including production. That ensures our security of supply and will develop new markets for ground-breaking European tech."

"Semiconductors are at the center of strong geostrategic interests, and at the core of the global technological race," the former Atos CEO said. "Superpowers are keen to secure their supply in the most advanced chips as they are well aware that it will condition their capacity to act (militarily, economically, industrially) and drive digital transformation.

### **[Infineon Opens Austrian Chip Plant Ahead Of Schedule](#)**

VILLACH, Austria -- Infineon Technologies opened a 1.6-billion-euro (\$1.9 billion) plant in Austria on Friday, boosting the German semiconductor company's ability to supply power chips for cars, datacenters and renewable power generation.

The plant in Villach, ready three months early, will make chips on 300 mm wafers thinner than a human hair, operating in tandem as a 'megafab' with an existing plant in Dresden, Germany and adding up to 2 billion euros a year in revenues, the supplier said in a statement.

"The new plant is a milestone for Infineon and its opening is very good news for our customers," CEO Reinhard Ploss told an opening ceremony attended by Austrian Chancellor Sebastian Kurz and EU Commissioner Thierry Breton.

"Our timing in adding new capacity could not be better, considering growing demand for power-management semiconductors," added Ploss.

Infineon is adding capacity at a time when global semiconductor supply chains are under extreme stress, with most leading automakers being forced to idle production due to chip shortages.

### **[Exxelia Ohmcraft High Voltage Chip Dividers Enable Design Flexibility for Manufacturers of Semiconductor Equipment](#)**

ROCHESTER, NY, UNITED STATES, September 17, 2021 /EINPresswire.com/ -- Microchips—also known as semiconductors—are critical to the function of everyday technologies like mobile phones, computers, radios, and televisions. To finetune the outputs of their main power supply, manufacturers of semiconductor production equipment have leveraged custom resistors from Exxelia Ohmcraft for more than 25 years for their high precision, high voltage and stability.

Exxelia Ohmcraft's custom surface mount resistors and dividers offer semiconductor equipment engineers with maximum design flexibility in the smallest footprint, as they have the ability to specify both the resistance value of a surface mount divider and the divider ratio. This allows engineers to produce the necessary voltage and current required to create the highest-quality end products.

### **[Tiny Gemini Lake mini-PC supports Linux](#)**

XDO Tech has Kickstarter'ed a tiny, \$149-and-up "Pantera PicoPC" mini-PC that runs Linux or Win 10/11 on a quad-core Gemini Lake CPU and offers up to 8GB LPDDR4, an SSD, 802.11ax/BT, HDMI, 3x USB 3.0, USB 2.0, and Type-C power with an optional battery.

XDO Tech has gone to Kickstarter to successfully launch a fan-cooled, 69 x 69 x 53mm mini-PC equipped with a Gemini Lake Refresh — Intel's Atom-class follow-on to Apollo Lake. The Pantera PicoPC starts at \$149 for a Super Early Bird model with 4GB LPDDR4 and 64GB eMMC. There is also a \$179 Super Early Bird with 8GB RAM and a 256GB M.2 SSD. Other 8GB RAM packages supply 512GB (\$212) and 1TB (\$250) SSDs. The campaign runs through Oct. 3 and shipments are expected in November.

## **East European News & Trends**

### **[New Implant Biocompatibility Improvement Technology Developed In Siberia](#)**

A new method of improving the surface properties of implants has been developed in Tomsk, in Siberia. At the core of the approach are special microcapsules loaded with medicinal substances. This is expected to help better control the release of drugs, said the lead developers from the Tomsk Polytechnic University (TPU) and their colleagues from Sweden, Germany, and the UK.

This approach to surface modification is reported to have been offered for the first time in global research history. Current results of the study have been published in English in Materials Chemistry and Physics.

In their experiments, the researchers deposited onto titanium implants special polyelectrolyte microcapsules, loaded with both porous calcium carbonate microparticles and a special anti-inflammatory drug called dexamethasone. Thus the surface of implants – or titanium alloy scaffolds, to be more precise – was functionalized.

### **[Superfast EV Charging Solution Receives Investment And Seeks European Recognition](#)**

L-Charge, a Russian start-up developing a superfast EV charging stations service, has raised its first \$1.5m investment from friends currently running a domestic vegetables producer called Veggies Valley, the Russian business daily Vedomosri reported.

Set up in 2020, this past summer L-Charge showcased its new liquefied natural gas (LNG) fueled mini power station for superfast electric vehicle charging. At the core of the innovation is the use of electric current from both the alternator and the battery, thus taking just eight minutes to fully charge an EV for a 100km drive. Such a movable power station is on call through a bot in a messenger; at this stage, the company is also developing a special mobile app.

### **[Start-Up Offers Computer Vision To Support Merchandising](#)**

A Russian start-up called Intelligence Retail employs computer vision in merchandising.

Intelligence Retail uses computer vision to help companies step up the efficiency of shelf utilization in stores. Its software scans assortments, prices and other relevant information in real time. It reportedly takes the service 10 seconds to generate an e-report on one retail section audit with an image recognition accuracy of as high as 99%.



## **World Economic Round Up**

The OECD has warned of an "uneven" global economic recovery as it lowered its 2021 growth forecasts for the world and the United States while raising the outlook for Europe. The world economy has bounced back this year on the back of stimulus measures, the rollout of effective COVID vaccines and the resumption of many economic activities, the Organization for Economic Co-operation and Development (OECD) said. But the Paris-based organization voiced concerns about lower vaccination rates in poorer countries. The recovery remains very uneven, with strikingly different outcomes across countries. Global Gross Domestic Product (GDP) has surpassed its pre-pandemic level following last year's COVID-induced recession.

*The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our [Semiconductor Monthly Report](#).*

## Industry Events 2020

### Future Horizons Events

- [Silicon Chip Industry Training Seminar](#) – London – November 2021
- [Industry Forecast Briefing](#), London – January 2022

*To book your place on any of our events please contact us on:*

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[Download Future Horizons Full Events Calendar Here](#)

### Industry Events

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**MARK YOUR CALENDER FOR THE NEXT**

**SILICON CHIP INDUSTRY WORKSHOP**

**MONDAY November 2021**

**AND**

**INDUSTRY FORECAST BRIEFING**

**TUESDAY January 2022**

**BOTH BEING HELD AT**

**HOLIDAY INN KENSINGTON FORUM, LONDON**

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