FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

Electric Cars As Buffer Storage For Solar Power: Infineon And Delta Enable Bidirectional Charging At Home

Munich, Germany – 27 July 2022 – On hot summer days, the share of solar power in the energy mix reaches record levels. But what to do when the sun is not shining? With bidirectional charging, solar power from the photovoltaic system is stored in electric cars and home batteries and fed back into the home grid in the evening hours or when needed to operate household appliances. This protects the environment, saves money and creates further incentives for switching to emission-free electromobility.

Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) and Delta Electronics, a Taiwan-based global leading provider of power and energy management solutions, have developed a three-in-one-system that integrates solar, energy storage and charging of electric vehicles. Thanks to bidirectional inverters, the electric car is not only charged, but can also be used as a buffer storage or as household emergency backup power. More and more cars are equipped for this. Looking ahead, bidirectional energy flows coulf also be used to realize new vehicle-to-home (V2H) and vehicle-to-grid (V2G) solutions.

"To make a sustainable contribution to decarbonization, we must think electromobility holistically: from green power generation to a stable, efficient grid infrastructure to storage and consumption," says Peter Wawer, head of Infineon's Industrial Power Control division. „With our solutions for bidirectional charging, the electric car can be charged inexpensively with solar power at home and also serves as a buffer storage."

Infineon's Secured NFC Tags Prevent Counterfeiting And Enhance Brand Experience

Munich, Germany – 4 August, 2022 – Counterfeit products have a negative impact on brands: not only do they affect revenue, but they also damage brand image with poor user experiences. In industries such as pharmaceuticals and food, counterfeit products can even pose a serious threat to consumer health and safety. Hence, companies are always on the lookout for robust anti-counterfeiting solutions. Also, in today's competitive world, customers have a variety of brands to choose from, making it essential for companies to leverage technology in order to increase brand awareness and build customer loyalty.

Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) offers secured NFC tags that meet high security requirements for proving authenticity. The NFC4TCxxx tag includes an open standard security architecture using AES-128 cryptography and is equipped with inherent resistance to physical attacks such as Differential Power Analysis (DPA) and Differential Fault Analysis (DFA). Infineon's secured NFC tags also offer a wide range of memory options, from 304 bytes to 4 Kbytes. This enables brands to store data and create customized applications to improve their customer engagement.

Inova Semiconductors ILaS Technology Agreements by NXP and Microchip for Smart Light and Sensor Networks in Automotive Applications

Munich, Germany – July 18, 2022 - Inova Semiconductors announced today that NXP® Semiconductors and Microchip Technology have entered into technology agreements for the use of Inova Semiconductors' ILaS (ISELED Light & Sensor Network) protocol in their microcontrollers, for automotive applications.

The ILaS network enables a fast and highly efficient, packet switched communication between the Microcontroller as initiator and the connected clients - in both directions and throughout the car via single pair UTP cable. All devices connected to the ILaS bus like Smart ISELED LEDs, touch/proximity sensors or stepper motors are controlled via the ILaS protocol implemented in the microcontroller. The ILaS network is deterministic, unlike other bus systems where all the control resides with the microcontroller making it especially suitable for modern network concepts such as zone architectures with centralized control.

Merck KGaA, Darmstadt, Germany and Micron join forces for more sustainable gas solutions in the semiconductor industry

DARMSTADT, Germany, Aug. 3, 2022 /PRNewswire/ -- Merck KGaA, Darmstadt, Germany, a leading science and technology company, and Micron Technology, Inc., an industry leader in innovative memory and storage solutions, join forces to develop gas solutions with a low global warming potential (GWP). After a year of iterative collaboration, Micron is now testing an alternative low-GWP Etch gas from Merck KGaA, Darmstadt, Germany's Research & Development unit to validate its process performance to replace a traditional, high-GWP material. The goal: new, more sustainable gas solutions are to be introduced permanently into production in the future.

"Sustainability needs collaboration. We must not think in silos or limit ourselves merely to our corporate boundaries. The entire value chain is called upon to explore new, joint paths in order to achieve even more together", said Kai Beckmann, Member of the Executive Board of Merck KGaA, Darmstadt, Germany and CEO Electronics, adding that "Micron has set itself ambitious sustainability goals, as we have done. We are pleased to be able to contribute to their success."

Samsung Electronics Develops Second-Generation SmartSSD Computational Storage Drive With Upgraded Processing Functionality

Samsung Electronics, the world leader in advanced memory technology, today announced that it has successfully developed a second generation of its pioneering SmartSSD.

The new proprietary computational storage incorporates data processing functionality within a high-performance SSD. Unlike existing SSDs, Samsung's SmartSSD can process data directly, thereby minimizing data transfers between the CPU, GPU and RAM.

This technology can avoid the bottlenecks that often occur when moving data between storage devices and CPUs, resulting in markedly improved system performance and much higher energy efficiency.

The SmartSSD is playing an increasingly important role, especially with the growth of next-generation technologies such as AI, machine learning and 5G/6G, which require large amounts of data processing.

Leveraging software and intellectual property (IP) developed by customers, along with in-built Arm cores, Samsung's second-generation SmartSSD enables much more efficient data processing. Compared to conventional data center solid-state drives, processing time for scan-heavy database queries can be slashed by over 50%, energy consumption by up to 70% and CPU utilization by up to 97%.

STMicroelectronics And Globalfoundries To Advance FD-SOI Ecosystem With New 300mm Manufacturing Facility In France

STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, and GlobalFoundries Inc. (Nasdaq: GFS), a global leader in feature-rich semiconductor manufacturing, today announced they have signed a Memorandum of Understanding to create a new, jointly-operated 300mm semiconductor manufacturing facility adjacent to ST's existing 300mm facility in Crolles, France. This facility is targeted to ramp at full capacity by 2026, with up to 620,000 300mm wafer per year production at full build-out (~42% ST and ~58% GF).

ST and GF are committed to building capacity for their European and global customer base. This new facility will support several technologies, in particular FD-SOI-based technologies, and will cover multiple variants. This includes GF's market leading FDX technology and ST's comprehensive technology roadmap down to 18nm, which are expected to remain in high demand for Automotive, IoT, and Mobile applications for the next few decades.

FD-SOI technology has origins in the Grenoble (France) area. It has been part of ST technology and product roadmap in its Crolles facility since the early beginnings, and it was later enabled with differentiation and commercialized for manufacturing at GF's Dresden facility. FD-SOI offers substantial benefits for designers and customers, including ultra-low power consumption as well as easier integration of additional features such as RF connectivity, mmWave and security.

Industry News & Trends

British Boffins Make Touchless Computing Tech On The Cheap

Researchers at University College London have developed software that lets users control a computer using voice, facial expressions, hand gestures, eye movements, and larger body motions. All that's required is a regular webcam — no special hardware needed.

The software, called MotionInput, was developed to enable touchless computing for a variety of purposes, from making computers easier to use for people with disabilities, to aiding professionals who have their hands full, like surgeons.

The software, which is now onto the third version, is available to download for free for non-commercial purposes. It's currently only supported by Windows though there are plans to extend support to Linux, MacOS, and Android.

Ford Develops Autonomous EV Charging Station

ord is testing a robot charging station operated by smartphone that allows electric vehicle drivers to charge their cars and trucks without leaving them.

The robot was developed at Dortmund University in Germany and designed for installation at parking spaces or drivers' homes. A follow-up project to improve the design is underway with IONITY, a developer of highway EV charging stations in Europe.

The autonomous charging station was designed with disabled drivers in mind. Families juggling multiple children in the car on long trips might also appreciate this technology.

Ford recently announced its plans for securing enough battery capacity to manufacture 600,000 passenger EVs by the end of 2022 and 2 million EVs by 2026.

Chinese Chipmakers Buying Equipment In Bulk From Rising US Tensions

The US Department of Commerce has been running what it calls an Entity List since 2018 that prohibits listed Chinese companies from purchasing US-made chip technologies. The list includes foundry SMIC and DRAM maker JHICC.

These companies aren’t able to purchase fab equipment for below 10nm nodes made by US companies Applied Materials, Lam Research and KLA, some of the world’s largest fab equipment.

US had also limited Netherlands’ ASML from exporting its extreme ultraviolet equipment that is needed for below 7nm chips to China.

Multiple people working at China employed by South Korean chipmakers told TheElec that many companies there are buying US-made fab equipment frantically due to concerns over further limitations in the future from the ongoing US-China tensions.

One Chinese company canceled its purchase from an alternative supplier to its US one that it has been preparing from the tension when it had the chance to import the US-made original ones, they said.

New Biofilm Powered by Bacteria to Initiate Green Revolution

University of Massachusetts Amherst researchers have recently reported that they have developed a biofilm that could absorb evaporation energy and transform it into electricity.

The wearable electronics industry could soon transform thanks to this biofilm, which was published in Nature Communications, and could power anything from private health sensors to personal electronics.

This is a very exciting technology. It is real green energy, and unlike other so-called 'green-energy' sources, its production is totally green.

This is due to the fact that this biofilm—a thin sheet of bacterial cells about the thickness of a sheet of paper—is naturally created by a modified strain of the Geobacter sulfurreducens bacterium. G. sulfurreducens produce electricity and has been used previously in "microbial batteries" to power electrical devices.

But for such batteries, G. sulfurreducens must be given sufficient attention and a steady diet. In contrast, this new biofilm, which can produce as much energy as a battery of comparable size, if not more, operates and continues to operate because it is dead. It also does not require feeding since it is dead.

India's Cheap Smartphone Ban And The Semiconductor Crisis

India is apparently gearing up to ban low-cost smartphones worth Rs 12,000 and below from China, according to a Bloomberg report on Monday. The government has yet to announce details on this ban, which could have far-reaching implications for Indian smartphone users and the global smartphone market in India. Low cost smartphones dominate the smartphone market in India, and the key players in this industry are almost all Chinese.

Reporting by Counterpoint Research shows that aside from Samsung, all smartphone sales in India are dominated by Chinese brands like Xiaomi, Realme, Vivo, Oppo, and OnePlus.

Aside from destabilizing the industry with price increases, handing a windfall to firms like Samsung headquartered in places other than China, and making it potentially harder to buy an affordable smartphone in India, there could be another unexpected effect: some relief for the seemingly never ending global semiconductor crisis, which started during the COVID-19 pandemic and intensified in the wake of the Russian war on Ukraine.

East European News & Trends

Scientists Develop Advanced Material To Boost Storage Batteries Capacity

Researchers at the Center for Energy Science and Technology, which is a department of Skoltech University in Moscow, have offered a simple and scalable method of increasing the capacity of a wide range of cathode materials to be used in metal-ion storage batteries.

Research results may find their way into a possible new generation of advanced rechargeable energy storage devices.

At the core of the new approach is treating cathodes with reducing agents solutions, specifically alkali metal salts derived from aromatic molecules. Several types of such agents that come from substances like naphthalene were proven to be suitable.

Developers Come Up With Microplastic Waste Cleaning Therapy

Biologists and medical specialists at the Kazan Federal University (KFU) in the Russian region of Tatarstan have developed an original method of identifying microplastic particles inside living cells and organisms.

Plastic waste grows daily across the planet; impacted by a variety of environmental factors, it decomposes very slowly down to micro- and nanodimensional particles. The particles can be found everywhere, including living bodies.

“To research into the way microplastic affects human and animal organisms, we must learn to detect it first. Our goal is to find out how easy or fast this or that type of plastic particles can penetrate a living body, where they accumulate, and how to tell one kind of plastic in the body from another,” said Gulnur Fakhrullina who heads this research effort at KFU.

Copper Ions Speed Human Tissue Regeneration

An international group of scientists led by a team from Moscow’s MISiS University has developed special copper-coated nanostructured fibrous material that is believed to be able to rapidly release copper ions in a liquid environment.

The novel material apparently has huge potential as medical wound dressings as it has been proven to be a promising bacterium killer while also speeding up human tissue regeneration and triggering immunity cells activation.

Copper’s antibacterial properties have been known for ages. However, obtaining copper-coated nanofiber has proven a daunting task with a large number of chemical conversion stages and, therefore, prohibitive costs.

World Economic Round Up

The global economy contracted in the three months to July, which was the first decline since the pandemic hit, the IMF said. The probability of a recession in the G7 economies - Canada, France, Germany, Italy, Japan, the US and UK - now stands at roughly 15 percent- nearly four times higher than usual. While UK growth is expected to remain relatively strong this year, Mr Gourinchas said unusually high inflation - faster than in Europe or the US - is expected to take a toll in 2023. The International Monetary Fund (IMF) has warned that the UK is set for the slowest growth of the G7 richest economies in 2023. It is predicting UK growth will fall to just 0.5 percent, much lower than its forecast in April of 1.2 percent. The global economy has shrunk for the first time since 2020, the IMF said, hit by the Ukraine war and Covid-19. With growth stalling in the UK, US, China and Europe, the world may soon be teetering on the edge of a global recession. People are feeling the impact of rising prices, caused by global economic factors, triggered by the illegal Russian invasion of Ukraine.

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 2022

Future Horizons Events

- Silicon Chip Industry Training Seminar
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- Industry Forecast Briefing, London – September 2022

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

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Industry Events

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AND
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BOTH BEING HELD AT

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