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The Global Semiconductor Industry Analysts

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New Li-S Batteries Far Exceed Li-Ion Capacity

A battery with five times the capacity of lithium-ion batteries and low environmental pick-up could lead to the development of drastically cheaper electric cars and large-scale storage of mains power.

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Memory Goes a Little Greener

The impact of components of digital devices such as smartphones is often lost amongst all the discussion of how to mitigate climate change, but memory makers have their own initiatives for contributing to environmental sustainability

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The Role of Silicon Carbide in Power Electronics

The adoption of energy solutions with SiC materials is accelerating in both the automotive and industrial markets. Making silicon carbide (SiC) wafers is a far more involved process than making silicon wafers, and with demand for SiC devices rising, companies that make them have to nail down sources of SiC wafers.

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TALK TO US



Startup De-Identifies Data

How to win consumer trust when massive security breaches are announced by one consumer company or another seemingly every week? A startup in Taiwan has developed an IC that might restore that lost trust.

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Making the AV Vision a Reality

Keysight is supporting the automotive industry through their latest innovations. The technological transformation with the advent of IoT, 5G, and vehicle-to-everything (V2X) communications leads to several challenges that require the implementation of sophisticated test and measurement solutions to maintain automotive safety in the era of autonomous driving.

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New Li-S Batteries Far Exceed Li-Ion Capacity

A battery with five times the capacity of lithium-ion batteries and low environmental pick-up could lead to the development of drastically cheaper electric cars and large-scale storage of mains power. The battery, based on lithium and sulfur (Li-S) is capable of maintaining 99% efficiency for more than 200 charge and discharge cycles; if used to power a smartphone, it would be able to keep it running for five days (Figure 1).

The new battery was developed by Mahdokht Shaibani, a researcher in the mechanical engineering and aerospace department at Monash University in Melbourne, Australia, and her colleagues.

The researchers have filed a patent (PCT / AU 2019/051239) for their manufacturing process, and the prototype cells have been successfully manufactured by German partners including Fraunhofer Institute for Material and Beam Technology. Scientists believe that this development could transform the way phones, cars, computers and solar networks will be produced in the future. The study was published in Science Advances.

Memory Goes a Little Greener

TORONTO — The impact of components of digital devices such as smartphones is often lost amongst all the discussion of how to mitigate climate change, but memory makers have their own initiatives for contributing to environmental sustainability.

Samsung Electronics' recently announced 512-gigabyte (GB) embedded Universal Flash Storage (eUFS) 3.0 was awarded Carbon Footprint and Water Footprint Certifications from the UK-based Carbon Trust, a globally accredited nonprofit certification body established by the British government to accelerate the move to a sustainable, low-carbon economy. The certifications are the result of Carbon Trust's thorough assessment of the environmental impact of carbon emissions and water usage before and throughout the production cycle of Samsung's technology, based on international standards — specifically PAS 2050 for carbon footprint and ISO 14046 for water footprint.

The Role of Silicon Carbide in Power Electronics

The adoption of energy solutions with SiC materials is accelerating in both the automotive and industrial markets. Making silicon carbide (SiC) wafers is a far more involved process than making silicon wafers, and with demand for SiC devices rising, companies that make them have to nail down sources of SiC wafers.

For example, Rohm and STMicroelectronics recently signed a multi-year agreement under which SiCrystal (part of Rohm Group) will provide over \$120 million of 150mm SiC wafers to STMicroelectronics. SiCrystal will supply ST with monocrystalline silicon carbide wafer substrates.

Startup De-Identifies Data

How to win consumer trust when massive security breaches are announced by one consumer company or another seemingly every week? A startup in Taiwan has developed an IC that might restore that lost trust.

The consumer electronics industry loves talking about building trust and loyalty among consumers. The “consumer experience” is a veritable marketing mantra at every industry gathering.

Privacy and safety are two tenets vital to winning consumer trust, but they never (as usual) emerged as serious topics at CES 2020. Sure, CES offered privacy panels and roundtables during which privacy chiefs from Facebook, Apple and Procter & Gamble made appearances.

Making the AV Vision a Reality

LAS VEGAS — Keysight is supporting the automotive industry through their latest innovations shown at the Consumer Electronics Show 2020. The technological transformation with the advent of IoT, 5G, and vehicle-to-everything (V2X) communications leads to several challenges that require the implementation of sophisticated test and measurement solutions to maintain automotive safety in the era of autonomous driving.

Next-generation vehicles need to develop different applications in multiple areas such as infotainment, telematics, driver assistance, and autonomous driving with maximum reliability, safety, and privacy.

V2X can be used in many different ways to improve road safety while leveraging the existing smart traffic infrastructure. 5G is a significant challenge for all players in the wireless market. It will take time for it to be fully deployed worldwide and will not be delivered in a single major release — with a significant network deployment program planned for 2020 and beyond.