

# FutureHorizons



The Global Semiconductor Industry Analysts

## **Future Horizons Newsletter**

**May 2016**

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## **Industry News By Company**

### **[China's Tsinghua Unigroup Buys Small Stake in U.S. Chip Maker Lattice](#)**

A state-owned firm tasked with advancing China's semiconductor ambitions is making another U.S. foray after earlier attempts were thwarted.

Tsinghua Unigroup said in a U.S. regulatory filing on Wednesday that it has accumulated a roughly 6% stake in Portland, Ore.-based Lattice Semiconductor Corp. through share purchases on the open market. It comes after Tsinghua Unigroup last year looked to acquire U.S. memory-chip maker Micron Technology Inc.

Lattice makes low-power programmable chips that can be customized to run high-tech systems such as data centers and telecommunications networks, and could have military applications.

### **[Apple Reports First Quarterly Sales Drop Since 2003 As iPhone Stumbles](#)**

Apple Inc. posted its first quarterly decline in revenue in 13 years, ending a historically great run for the world's most valuable company and stoking questions about whether its best days are behind it.

The slowdown reflects the challenge facing Tim Cook, who took over as chief executive from Steve Jobs in 2011 with the iPhone a success, the iPad booming and the Apple Watch in development.

Now, iPhone sales are slowing, along with the rest of the smartphone market, the iPad has slumped for more than two years, and the Apple Watch is in its early days.

### **[Apple Spurs Industry Shift To Low-Power Display Technology](#)**

TOKYO -- The electronics industry's shift from LCDs to next-generation panels is gaining momentum.

The Japanese unit of South Korea's LG Electronics on Wednesday took the wraps off five new TVs with organic light-emitting diode displays, including a 65-inch model. The picture is formed by a thin, bendable layer of organic compounds that shine without the need for a backlight.

Lee In-gyu, president of the LG unit, said the OLED era "has already started." But with Apple planning to adopt OLED panels for a new smartphone as early as 2017, this is just the beginning.

### **[Broadcom Is One Semiconductor Company In The Chips](#)**

The former Avago said in May it was buying Broadcom in a blockbuster \$37 billion merger. The deal was recently completed and what has been reborn as Broadcom (AVGO - Get Report) has become the semiconductor company to beat.

The acquisition of Broadcom has created a best-in-class semiconductor company that trades below its peers. The merged company has commanding positions in wireless, wired infrastructure, industrial markets and enterprise storage.

In its first report as a merged company Broadcom reported \$3.7 billion in revenue versus the consensus estimate of \$3.55 billion. Aided by a string of acquisitions, revenue is estimated to rise 90% in fiscal 2016 and about 23% next year.

### **FOGALE NANOTECH, A Leader In Advanced Metrology Solutions For Semiconductor Manufacturing, Acquired ALTATECH**

Delivering leading-edge full process control tools and software for advanced semiconductor manufacturing & enabling more than Moore to become a reality

FOGALE Nanotech today announced that it has acquired Altatech, a specialized technology leader in the development of wafer inspection and material deposition tools for semiconductor manufacturing. Altatech SAS has headquarters in Grenoble, France, located in the center of the French Silicon Valley with a commercial subsidiary in Germany.

This strategic acquisition uniquely positions Fogale Nanotech to provide the full range of inspection and metrology tools to address high throughput 2D, 3D and full wafer inspection for 3D IC TSV, advanced packaging, MEMS, LED and Substrate applications.

### **Intel Cuts 11% Of Global Workforce Due To Weak PC Demand**

Intel, the largest computer chipmaker in the world, announced on Tuesday that it would cut 11% of its global workforce, as they expect the PC market to decline significantly. The company aims to restructure and replicate the success across mobile devices that have now replaced traditional desktops and laptops.

The PC industry decline has also been felt by tech companies Hewlett Packard Co and Microsoft Corp. The new age of tech users globally would turn to their mobile devices for their computing needs, and corporations would increasingly rely on big machines than desktop models to run their businesses.

San Jose, Calif., USA and Yokohama, Japan, April 14, 2016 — Kilopass Technology, Inc., the leading provider of semiconductor embedded non-volatile memory (NVM) intellectual property (IP), and Mie Fujitsu Semiconductor Limited (MIFS) announced today they signed a technology development agreement for the first of several one-time programmable (OTP) enablement projects. In this phase of the agreement, Kilopass will port its OTP NVM Intellectual property (IP) to MIFS's 40-nanometer (nm) low-power (40LP) process. Designers using the MIFS 40LP process will be able to integrate Kilopass' XPM 128kbit to optimize power efficiency and performance of their designs.

“It's a pleasure to work with forward-looking Mie Fujitsu Semiconductor,” says Charlie Cheng, Kilopass' chief executive officer. “Fujitsu is long known for its unique and differentiated strategic value to its customers and partners. This partnership is the beginning of many collaborative efforts.

### **Panasonic And Siemens To Cooperate For Next-Generation Electronic Equipment Assembly Plants**

Panasonic and Siemens strive for the common advancement of digital production for the electronics industry.

A Memorandum of Understanding setting out the intention of the two companies to work more closely together was signed today, hoping to expand the future in the fields of automation concepts for the electronics industry.

The focus lies on standardized line integration concepts, which the partners plan to develop not only for individual production lines but also as overarching integration concepts for all process steps at the factory level, and as company-wide automation standards for globally distributed production networks.

### **Telco Concept Digitises Living Cell Data On Microfluidic Chip**

Georgia Institute of Technology researchers have used the principle done by telecommunication networks to track cells being sorted on microfluidic chips. In a nutshell, phone calls and text messages are able to find you wherever you are through the use of a unique identifying number on the network.

The technique uses a simple circuit pattern with just three electrodes to assign a unique 7bit digital identification number to each cell passing through the channels on the microfluidic chip. The technique also captures information about the sizes of the cells, and how fast they are moving. That identification and information could allow automated counting and analysis of the cells being sorted.

## **Industry News & Trends**

### **[ST's 36V Op Amps Target Automotive, Industrial Apps](#)**

STMicroelectronics has unleashed a couple of 36V op amps that feature improved performance and ruggedness in automotive and industrial applications. The op amps feature a wide supply-voltage range, stability in challenging operating conditions, and tolerance of electrostatic discharge (ESD) up to 4kV (HBM), the company indicated.

The TSB572 and TSB611 single op amps are the first devices produced using ST's 40V-ready BiCMOS semiconductor process. This technology claims to deliver superior GBW/I<sub>cc</sub> efficiency resulting in about five times lower supply current in relation to performance, compared with standard op amps. In addition, low input-offset voltages with temperature drift below 6µV/°C simplify system design, eliminate any need for trimming or calibration, and ensure consistent performance over the specified temperature range -40°C to 125°C.

### **[High-Power FM Transmitters Support HD Radio](#)**

Rohde & Schwarz has announced that the R&S THR9 family of high-power FM transmitters now supports the HD Radio standard, which represents the fourth generation of digital radio. According to the company, this helps operators of HD Radio stations to slash energy, maintenance and leasing costs over the entire lifecycle of their transmitters.

The R&S THR9 delivers output powers between 3kW and 45kW in hybrid mode and up to 80kW in analogue FM mode. The FM transmitter achieves outstanding efficiency due to an innovative amplifier design and a system design focused on maximum efficiency and reliability. All RF power components, including the power combiner and the RF rigid line, exhibit minimum attenuation. As a result, the transmitter system achieves efficiency of up to 75 per cent in analogue FM mode and up to 57 per cent in hybrid mode.

### **[Samsung Electronics Introduces Four University-Owned IoT Technologies To Partner Firms](#)**

Samsung Electronics Co. introduced the latest Internet of Things (IoT) technologies owned by local universities to its partner companies in order to help them improve the competitiveness of their next-generation technologies.

The company held the 2016 Advanced IoT Technology Conference at Samsung Electronics Relationship Academy in Suwon, Gyeonggi Province, on Apr. 18.

The conference is a win-win partnership program that Samsung Electronics shows the preceding technologies, which are owned by Korean universities and government-funded research institutions, to its partner firms and partners secure the technical competitiveness by adopting the advanced technologies. It was first held in 2009 and this year marks the 8th year of the conference.

The Advanced IoT Technology Conference has been held once a year. However, the company plans to host the meeting four times a year from now on in a bid to give more practical help to its partner companies. In addition to IoT technologies, it will hold

conferences introducing advanced technologies in the new material, surface treatment and future promising technology sectors by the end of this year.

### **Wearable Electronics Bring Computers In Your Clothes**

Researchers from the Ohio State University who are working to create wearable electronics have announced a major achievement. According to them, they are able to embroider circuits into fabric with 0.1 mm precision to incorporate electronic components such as sensors and computer memory devices into clothing.

With this advance, the Ohio State University researchers have taken the next step toward the design of functional textiles: clothes that gather, store, or transmit digital information. With further development, the technology could lead to shirts that act as antennas for your smartphone or tablet, workout clothes that monitor your fitness level, sports equipment that monitors athletes' performance, a bandage that tells your doctor how well the tissue beneath it is healing, or even a flexible fabric cap that senses activity in the brain.

### **Sensors, Oleds To Fuel Future Growth In Printable Electronics, Expert Says**

Organic light emitting diodes (OLEDs) and sensors are likely to be the primary drivers of economic growth in the printable, flexible, and wearable electronics industry over the next decade, according to a veteran industry consultant.

Harry Zervos, a principal analyst with emerging technology research firm IDTechEx, made his case to both industry colleagues and the media today during a presentation at the 2016 Canadian Printable, Flexible, Wearable Electronics Symposium (CPES2016), which was held at the Oakville, Ont. campus of Sheridan College.

With sensors – specifically glucose test strips – already representing the majority of the printed electronics market, Zervos said the experts at IDTechEx see excellent growth potential in manufacturing strips for other compounds such as gas, humidity, temperature, and biological elements other than glucose.

### **3D Printing Method Allows Rapid PCB Prototyping**

It is undeniable that 3D printing is here to stay. But where does it fit in the area of additive manufacturing for electronics? Putting together electronics and 3D printing can sure have implications, especially in printed circuit boards and rapid prototyping in the electronic industry.

Not surprisingly, the 3D printed electronics space is in its infancy, more or less at the same level of adoption as regular 3D prototyping was in 2009. But its slow adoption is not from a lack of interest or need; rather, it's because creating 3D printers for PCBs is exceedingly complex and existing inks and printers just weren't up to the challenge. These printers must be able to print conductive traces, which is the domain of printed electronics and produce components that meet the demanding performance requirements of aerospace, defence, consumer electronics, Internet of Things and even wearables.

## **Panasonic And Siemens To Cooperate For Next-Generation Electronic Equipment Assembly Plants**

HANNOVER, Germany--(BUSINESS WIRE)--Panasonic and Siemens strive for the common advancement of digital production for the electronics industry. Against the backdrop of the Hannover Messe, Hiroyuki Aota, Director in charge of Factory Solutions Business and Executive Officer of Panasonic Corporation, and Anton S. Huber, CEO of the Digital Factory Division at Siemens AG, signed a Memorandum of Understanding setting out the intention of the two companies to work more closely together in the future in the fields of automation concepts for the electronics industry. The focus lies on standardized line integration concepts, which the partners plan to develop not only for individual production lines but also as overarching integration concepts for all process steps at the factory level, and as company-wide automation standards for globally distributed production networks.

Over recent years, Panasonic and Siemens have both worked independently on pioneering concepts linking digitalization and automation. In essence, the Smart Factory offering from Panasonic encompasses automatic assembly systems and the Manufacturing Execution System application PanaCIM. With the Digital Enterprise, Siemens is bringing to the table a portfolio encompassing the core elements of industrial software and automation, industrial communication, security and services. The contribution Siemens aims to make to the jointly developed concepts will be first and foremost its expertise in control and automation technology. Panasonic and Siemens to Cooperate for Next-Generation Electronic Equipment Assembly Plants.

## **Intel Discontinues Some Chips For Mobile Devices**

Intel Corp. is discontinuing some of its chips for mobile devices, the latest sign of a recent strategy shift to focus on fields where it is more likely to make money.

The Silicon Valley company no longer plans to sell three products in a line of multifunction chips called SoFIA that target smartphones with a combination of cellular modem and processor functions. Intel also won't sell a version of its Atom processor line, code-named Broxton, that was aimed at tablet computers.

Kathryn Gill, an Intel spokeswoman, on Friday confirmed the changes, which were first reported in an article by semiconductor market analyst Patrick Moorhead on the Forbes website.



## **East European News & Trends**

### **[Hong Kong's Investor Buys 30% Share Of The Yotaphone Manufacturer](#)**

Hong Kong-based REX Global Entertainment Holdings, which specializes in entertainment-related businesses, has purchased a stake in Russia's Yota Devices for \$46.5 million.

The company will now hold a 30 percent stake in Yota, which is famous for its dual screen YotaPhone smartphone and mobile broadband services in Russia. Telconet Capital, a privately owned Russian investment fund, will hold 34.9 percent, while the Russian state firm Rostec will control 25.1 percent and Yota's management will own 10 percent.

### **[Nanomaterials For New Memory Devices Developed In Voronezh](#)**

Scientists at the Voronezh State University (VSU) in Central Russia have developed new magnetic nanostructured materials which could be used to make next gen memory devices.

The VSU team is said to have aimed to develop Si-Me based nanostructured materials "with an optical magnetization reversal effect" to come up with new memory components.

As a result of research, the team is reported to have developed materials that are expected to enable "ultra-high speed," an improvement that stems from an innovative method of storing data no devices available today currently use. Immediate markets for the new materials include photonics, microsystem instrumentation, and memory devices.

### **[At MIPT, New Cooling For Next Gen Computers Developed](#)**

MIPT, a leading Russian university focused on physics and technology, also known as Phystech, have developed a cooling system or the plasmon components of optoelectronic chips which are expected to run tens of thousands of times faster than today's computers.

Their research has shown that using efficient multilayer thermal interfaces several nano- and micrometers thick in combination with conventional cooling systems can lower the temperature of a chip to a level which is just about 10 degrees Celsius above the ambient temperature. This appears to be opening much broader horizons for the use of optoelectronic chips in areas ranging from supercomputers to compact electronic devices, and traditional cooling systems reinforced with the new solution may still be widely used.

## **World Economic Round Up**

The European Commission said growth in the euro zone and the wider European Union will be slightly weaker this year than previously forecast, as it warned that the economic slowdown in China and other emerging markets, geopolitical tensions and uncertainty ahead of the U.K. referendum on EU membership could weigh on the economy. Economic growth in Gulf states is forecast to slow to 1.8 percent this year as the oil-dependent region cuts spending to battle fiscal deficits reaching 11.6 percent of Gross Domestic Product (GDP).

*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 2016

### Future Horizons Events

- [Silicon Chip Industry Training Seminar](#) – London – 14<sup>th</sup> November 2016
- [Industry Forecast Briefing](#), London – 20<sup>th</sup> September 2016

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

**Telephone: +44 1732 740440**

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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 14<sup>th</sup> NOVEMBER 2016**

**AND**

**INDUSTRY FORECAST BRIEFING**

**TUESDAY 20<sup>th</sup> SEPTEMBER 2016**

**BOTH BEING HELD AT**

**HOLIDAY INN KENSINGTON FORUM, LONDON**

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