FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Growing Economy Spurs Expansion In Manufacturing Industry

As the economy improves, manufacturers have expanded in order to meet growing demand, particularly in the field of electronics.

According to the California Employment Development Department (EDD), "California's unemployment rate fell to 5.1 percent and the state's employers added 9,700…jobs in January."

"An uptick in the economy is always encouraging," said Charlie Allport, Executive Vice President of WVSG, "and the fact that, according to the latest "Manufacturing ISM Report on Business," the manufacturing industry is growing, especially in electronics, only serves to increase optimism for the future here in Silicon Valley."

Aura Semiconductor Announces Partnership with Mindtree to Deliver Advanced Wireless Personal Area Network (WPAN) Solutions for IoT Devices

Aura Semiconductor, a provider of high-performance Radio Frequency (RF) transceiver solutions, in partnership with Mindtree has announced a complete Bluetooth Low Energy (BTLE) 5 wireless connectivity solution for Internet of Things (IoT) devices.

Aura has the world’s smallest IoT radio transceiver IP for BTLE 5 standard, with state-of-the-art performance which is capable of seamless coexistence with other RF technologies. Aura’s RF hard IP occupies less than 0.5 mm2 in area, has an RX peak current of 5 mA and a TX peak current of 5.4 mA from a 1.1V rail in TSMC40nm process node.

Mindtree is in its 18th year of offering a comprehensive portfolio of Bluetooth intellectual property (IP) solutions. The IP portfolio includes certified, customizable, ultra-low power and footprint Silicon IP for Bluetooth® Smart 4.2 and 5, and ultra-compact, complete certified protocol Stack and Profiles Software for Bluetooth Smart and Bluetooth Smart Ready.

Fujitsu In Big Trouble Over Little Japanese Chip Trader

Fujitsu has been forced to explain itself to investors after becoming embroiled with a small-time corporate raider in what has become Japan’s first hostile takeover battle for a decade.

The electronics conglomerate aiming to become a global leader in cloud computing is entangled in a bidding war that has produced multiple counter-offers and now places a 160 per cent premium on its tiny target — the lossmaking Tokyo-listed chip trader Solekia.

Despite four years of pro-investor reforms under Prime Minister Shinzo Abe, analysts say the tussle has exposed a Japanese governance culture at major corporations that still places historically cosy business relationships above strategic logic and shareholder interest.

Light Intelligence For Everyone: Research On Lighting Systems Of The Future, For Smart Home, Smart City, Smart Factory, And Smart Art

Munich, Germany – March 28, 2017 – Nearly 20 percent of all the electricity consumed in the world is for lighting. And about 80 percent of that lighting is attributed to professional applications such as building, office, industry or street lighting, and about 20 percent to private residential lighting. Today, individually adjustable lighting applications are rather the exception than the rule. No matter the time of day or season, whether inside or outside, at home, school, the factory or at the office: there usually is only one continuous brightness level or lighting color to be set.

With the project "OpenLicht", Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) and its three research partners, Bernitz Electronics GmbH, the Deggendorf Institute of Technology, and the Technische Universität Dresden, want to change all that. The OpenLicht project aims to make the creative use of light a possibility for everyone: just as much for small and medium-sized enterprises (SMEs) from the lighting industry as for design studios, interior designers, artists, and electronics hobbyists – also known as "makers". The result would be innovative, flexible, and individually adjustable light solutions for a wide range of applications.

At Last UK Has A Semiconductor Success Story

IQE manufactures semiconductor wafers in South Wales, which are used by some of the world's largest IC firms to make wireless chips, photonics devices and even solar cells.

As such it is at the heart of the biggest chip markets – high speed communications, the internet of things, big data, advanced medical technology, energy efficiency, and autonomous vehicles.

IQE's success has even resulted in the creation of the compound semiconductor cluster at Cardiff which has attracted investment from the UK government and EU.

Dr Drew Nelson, CEO of IQE, believes that Wales is uniquely positioned with a critical mass of compound semiconductor expertise to exploit the enormous commercial opportunities.

Kyocera Claims Smallest Crystal Unit For Smartphones

Kyocera Crystal Device has introduced the CX1008 quartz crystal unit for smartphones, wearables and other electronic devices. Measuring just 1mm x 0.8mm, CX1008 delivers the same electrical characteristics as Kyocera's conventional CX1210 model, enabling it to be adopted without circuit board revision, according to the company.

Crystal units are used to generate highly stable reference signals in digital circuits, based on the unique material characteristic of quartz to oscillate at a precise frequency when a specific voltage is applied. The trend toward smaller, more functional smartphones and wearable devices requires smaller, better-performing crystal units. Traditionally, however, it was believed that miniaturising crystal units beyond a certain point would compromise their performance, since electrical characteristics degraded as the device became smaller.

Nvidia Builds Momentum In AI Car Computing Battle

Toyota will be using Nvidia's Drive PX AI automotive platform to power advanced autonomous driving systems planned for market introduction, Nvidia has announced at its GPU Technology Conference.

Mike Demler, a senior analyst at The Linley Group, described Toyota's move as "potentially a big deal."

In the brewing battle between Nvidia's AI car computing platform and an Intel-Mobileye platform, Nvidia now appears to be building momentum.

According to Egil Juliussen, director research, Infotainment & ADAS at IHS Automotive, Toyota has become the fourth major car OEM publicly committed to Nvidia's Drive PX for their highly automated vehicle. The other three OEMs are Audi, Daimler and VW Group.

In addition to those OEMs—which include the world's two biggest carmakers Toyota and VW, Juliussen added that Nvidia also previously picked up smaller OEMs including Volvo, Tesla and Nio (formerly known as NextEV). Since tier ones such as Bosch and ZF have also embraced Nvidia's hardware platform, Juliussen believes that this "will probably help Nvidia getting other OEMs on board."

Peregrine Semi Buys MIT Spinoff Arctic Sand

SAN FRANCISCO—RF chip vendor Peregrine Semiconductor Corp. has acquired Arctic Sand Technologies, an MIT spinoff that offers low-power chips for DC-DC power conversion. Financial terms of the deal were not disclosed.

Arctic Sand (Burlington, Mass.) was founded in 2010 by Gary Davison, who took over as CEO of the company in 2014. Arctic Sand claims that its technology delivers power conversion efficiency enabling platforms for a variety of applications to be made thinner. In certain applications, the company claims its technology reduces the space occupied by power components by 50 percent while also reducing the height of components while decreasing power loss and increasing run time.

Peregrine (San Diego) was acquired by Japan's Murata Manufacturing Co. Ltd. for $471 million in 2014.

STMicroelectronics And Allystar To Cooperate On GNSS Applications And Solutions

STMicroelectronics (NYSE: STM) , a global semiconductor leader serving customers across the spectrum of electronics applications and a leading supplier of automotive

electronics worldwide, together with Allystar, a spin-out from CEC Huada Electronic Design Co. Ltd. and a leading Chinese GNSS chip designer, announce their cooperation to develop and market GNSS (Global Navigation Satellite Systems) solutions for automotive products and other applications.

GNSS solutions and technologies, including China's BeiDou navigation system, are playing an ever-increasing role in many different domains, related to smart mobility. Specifically, enhanced-precision location technology enabled by multi-constellation GNSS solutions, in combination with radars, cameras, and various sensors, will be a key enabler for autonomous cars.

ST and Allystar are already co-marketing highly reliable products for the automotive market and cost-competitive products for the consumer market.

"GNSS positioning technologies are vital for a variety of services and applications and will be one of the key building blocks for autonomous-driving solutions. Working closely with Allystar, the Chinese leader in GNSS/BeiDou solutions, allows ST to better address the enormous positioning market of China and Asia," said Marco Monti, Executive Vice President and General Manager, Automotive and Discrete Group, STMicroelectronics.

Qualcomm Unveils Product For Lower-Priced Cell Phones

Qualcomm Inc. is introducing a new product designed to bring faster wireless service to basic, lower-priced cellphones in emerging markets, an attempt to bolster the chip giant's reach among consumers who can't afford smartphones.

The new product, which starts shipping in the second quarter, includes a processor along with other hardware and software that will enable so-called feature phones to take advantage of today's faster wireless networks, the company said. The new offering—designed for phones to be sold in markets such as India, Latin America and Southeast Asia—allows for longer battery life and faster access to social media and other content, it said.

In those markets, Qualcomm said, feature phones typically cost from $15 to $50 and were designed for older generation — 2G and 3G — wireless networks. Feature phones made with the new Qualcomm chips will cost about $50 and be designed for the current 4G wireless network.

5 IoT Trends to Watch in 2017

Networking, security and machine learning are among five key areas to track this year as the Internet of Things goes mainstream.

Enterprises across many different verticals are now well-aware of the potential benefits of the IoT, although most are still in the early stages of thinking about how, when and where to deploy IoT solutions. Consumers are also getting in on the act, thanks to smart home devices and platforms such as Amazon's Alexa.

The smart home market alone is predicted to grow to more than 1.4 billion units by 2021, up from 224 million in 2016. Following are five key IoT trends engineers need to track this year.

LPWA goes mainstream: Licensed spectrum low-power wireless access (LPWA) technologies are coming into the market in earnest in 2017. LPWA is opening the door to low-cost, long-battery life devices for a variety of applications that can also be reliably and securely integrated with and tracked by mobile network operators.

Solar-Powered Skin Paves Way For Lifelike Prosthetics

Engineers at Glasgow University are turning to the sun's rays to power a new type of artificial skin that is more sensitive than our own.

Dr. Ravinder Dahiya, from the University of Glasgow's School of Engineering, and his colleagues at the Bendable Electronics and Sensing Technologies (BEST) group previously developed an electronic skin for prosthetic hands made from graphene.

This time, Dahiya and his colleagues have integrated power-generating photovoltaic cells into their electronic skin for the first time. In their research paper published in the journal Advanced Functional Materials, the researchers described how graphene's optical transparency, which allows around 98% of the light which strikes its surface to pass directly through it, makes it ideal for gathering energy from the sun to generate power.

Quantum Transport Goes Ballistic For Future Computers

IBM scientists have successfully shot an electron through an III-V semiconductor nanowire integrated on silicon, which could pave the way for sophisticated quantum wire devices for future integrated circuits used in advanced powerful computational systems.

For their research, published in the journal Nano Letters, the IBM team led by Dr. Johannes Gooth went "ballistic," but at the nanoscale.

To do this, the researchers fired electrons from one contact electrode, letting them fly through the nanowire without being scattered until they hit the opposed electrode. The nanowire acts as a perfect guide for electrons, such that the full quantum information of this electron (energy, momentum, spin) can be transferred without losses, Gooth explained.

Insulator Enables 7nm And Beyond

The IEEE International Reliability Physics Symposium (IRPS) last week saw IBM discussing an insulator formulation that the company said will help it reach the 7nm node and smaller process geometries. The information was offered during the keynote titled "System Level Reliability Challenges with Technology Scaling," presented by Ronald Newhart, IBM Distinguished Engineer in the IBM Systems & Technology Group (pictured above).

IBM's insulator comes in two forms — silicon-boron-carbon-nitride (SiBCN) and silicon-oxygen-carbon-nitride (SiOCN) — both of which, it said, improve performance and increase yields.

The company also showed how to model line edge roughness (LER) variations filled with SiBCN or SiOCN between wires on a chip as well as new techniques to better measure failure rates by pre-screening chip tests for optimal performance.

LSA Spec Paves Way For Spectrum Sharing

ETSI, an independent association that produces globally-applicable standards for information and communications technology, has announced that its technical committee for reconfigurable radio systems (TC RRS) has completed the specification for the support of Licensed Shared Access (LSA), which will enable spectrum sharing coordination between LSA licensees and existing spectrum licensees.

The recently completed specification, ETSI TS 103 379 addresses information elements and protocols for the operation of LSA in the 2,300MHz-2,400MHz band. The document defines the application protocol, also known as LSA1 protocol, on the interface between the LSA Controller and the LSA Repository.

ETSI TC RRS's new specification completes the group's set of specifications that will allow interoperable implementation of LSA Repositories and LSA Controllers to support LSA deployments in the initial target band (2,300MHz-2,400MHz). Extensions to other bands are not precluded, in response to future regulatory requirements. It is the intention

to take such future requirements as well as additional features into consideration when starting a new release of the LSA specifications, according to the association.

Wi-Fi Fingerprints Power Indoor Positioning System

A system developed by a team of researchers at KAIST uses Wi-Fi signals to provide global indoor localisation.

The method, which makes use of numerous smartphones to collect fingerprints of location data, can be utilised in any building in the world, provided the floor plan is available and there are Wi-Fi fingerprints to collect, said Professor Dong-Soo Han of the School of Computing Intelligent Service Lab.

To accurately collect and label the location information of the Wi-Fi fingerprints, the research team analysed indoor space utilisation. This led to technology that classified indoor spaces into places used for stationary tasks (resting spaces) and spaces used to reach said places (transient spaces), and utilised separate algorithms to optimally and automatically collect location labelling data.

Growing Economy Spurs Expansion In Manufacturing Industry

An international team of scientists featuring researchers from Russia's Skoltech (the university founded by the Skolkovo Foundation and MIT) appears to have found a way of making a storage battery, including that for a smartphone, much more efficient and durable, portal Naked-science.ru reported.

The researchers are said to have been able to change the crystal lattice in the Li-ion battery cathode to boost its efficacy and longevity considerably without compromising safety. The study has been published in English in Nature Materials.

Lithium-ion batteries are used widely across electronics in portable products such as laptops, tablets, mobile phones and photo cameras. Lithium is the charge carrier; when the battery is charging, Li ions leave the crystal lattice of a transition metal (d-metal)'s oxide which can change its oxidation level. In modern batteries, a layered cobalt/lithium oxide structure is typically used.

Russian IT Companies Look To Self-Regulate Big Data Sector

Russia's largest IT and telecom companies have proposed to the Russian government that they create a new self-regulating organization to oversee the "big data" sector, or the collection and analysis of extremely large sets of data to find trends, the US-Russia Business Council (USRBC) reported, citing the Russian news daily Kommersant.

The companies are reportedly concerned about recent indications that the government will begin to over-regulate big data usage, leading to reduced investment and a drag on the development of a digital economy in Russia. The companies involved are reportedly modeling their approach in part on the EU's Big Data Value Association (BDVA).

Alexander Zharov, who heads a major national telecom watchdog called Roskomnadzor, said back in November that the Presidential Working Group on the Development of the Internet was beginning to draft legislation pertaining to regulation of big data, while Presidential Aide Igor Shchegolev said that the regulation of big data could begin this year.

Russian Fintech Start-Up Gets Y Combinator Backing

Collectly, a Russian start-up that facilitates for banks and companies the automation of bad loan collection, has raised $500K from the U.S.' Y Combinator and an angel investor consortium. Portal Firrma.ru reported the news citing Levon Brutyan, the co-founder of the one-year-old company.

According to Mr. Brutyan, the American accelerator program shelled out $120K, with the remaining $380K coming from some yet-unspecified private investors. The investments were raised in February.

Collectly uses digital communications channels, such as email, open social network accounts, etc., and machine learning technology to analyze each debt case in real time and then generate personified debt collection strategies. The start-up is currently working on a new bot to automate communication.

In November 2016, Collectly announced the raising of $100K from international angel investors and Nordea Startup Accelerator, a Finnish fintech program. The latter invested $12K.

World Economic Round Up

The International Monetary Fund has reported that the global economy is on course for its best performance in several years despite trade tensions and looming geopolitical threats. Investors are skittish over a potential U.S. standoff with North Korea, France's elections and Washington's fresh use of force in the Middle East and Afghanistan, but global investment, manufacturing and consumer confidence are signalling strength. U.S. growth is projected to accelerate. Europe and Japan are finally showing signs of recovery.

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 2017

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – Please Contact For Next Date
- Industry Forecast Briefing, London – 19th September 2017

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

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

Download Future Horizons Full Events Calendar Here

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY 12th June 2017
AND
INDUSTRY FORECAST BRIEFING
TUESDAY 19th September 2017

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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