FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

October 2015

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Industry News By Company

ams Rolls Truly Voltage-Scalable CMOS Transistors

The full service foundry division of ams has expanded of its 0.35µm high-voltage CMOS specialty process platform. The advanced "H35" process now includes a set of truly voltage scalable transistors offering significant area and performance improvements, stated the company.

The voltage scalable high-voltage NMOS and PMOS transistor devices are optimised for various drain-source voltage levels (VDS) from 20V to 100V and provide significant lower on-resistance thus resulting in area savings. Using an optimised 30V NMOS transistor in power management applications instead of a fixed 50V transistor results in an area saving of about 50 per cent. A 60V optimised NMOS device results in 22 per cent less area when compared to a standard 120V NMOS transistor.

Apple Speeds Up Electric-Car Work

Apple Inc. is accelerating efforts to build an electric car, designating it internally as a “committed project” and setting a target ship date for 2019, according to people familiar with the matter.

The go-ahead came after the company spent more than a year investigating the feasibility of an Apple-branded car, including meetings with two groups of government officials in California. Leaders of the project, code-named Titan , have been given permission to triple the 600-person team, the people familiar with the matter said.

Broadcom Intros Automotive-Grade Wireless Chips

Broadcom Corp. has announced a couple of automotive-grade wireless chips that feature the latest in 5G Wi-Fi and Bluetooth Smart technology. The devices allow car makers and tier one integrators to deliver high-speed connectivity within and beyond the vehicle, providing Internet, cloud applications and entertainment content via telematics or hot spot connections, stated the company.

Broadcom offers the 5G Wi-Fi/Bluetooth Smart 2X2 MIMO combo chip with Real Simultaneous Dual Band (RSDB) support as well as a stand-alone tri-mode Bluetooth Smart (version 4.2) SoC. Optimised to meet the rigorous standards of the automotive industry, all products have been tested to AECQ100 automotive environmental stress requirements, are manufactured in TS16949 certified facilities and offer full production part approval process (PPAP) support.

Dialog Semiconductor To Buy Atmel For $4.6 Billion

Dialog Semiconductor PLC announced a $4.6 billion cash-and-stock deal to buy Atmel Corp. , the latest sign that chip makers are betting on a technology trend called the Internet of Things.

Dialog, a U.K.-based company, sells chips used to manage power in high-end smartphones from Apple Inc. and others. Atmel, based in San Jose, Calif., is best known for chips called microcontrollers that provide computing power for many kinds of consumer and business hardware.

Jalal Bagherli, Dialog's chief executive, said the deal will help the company reduce its dependence on a few smartphone makers. At the same time, he said, acquiring Atmel's customer base and line of products will make Dialog a major player in chips for connected cars, wearable devices and other networked gadgets lumped under the catchall phrase Internet of Things, or IoT.

Foxconn Comes Back Bigger And Better

Foxconn, a Taiwan-based contract electronics manufacturer, has returned to India, and it seems that the investments this time are more stable and far-reaching.

The Taiwanese company appears to be taking several steps to build a bigger R&D and manufacturing base in India, according to reports.

A noteworthy one is presumed to be linked to the Indian government's "Make in India" campaign, a national programme aimed at attracting investment and talent, extending its manufacturing infrastructure and encouraging innovation.

IBM To Ditch Silicon For Carbon Nanotubes To Make Ultra-Powerful, Ultra-Efficient 1.8-Nanometer Chips

IBM has revealed a new semiconductor technology that it says will allow it to develop faster, smaller transistors down to the 1.8-nanometer node by using carbon nanotubes to replace the traditional silicon-based chips used today.

Big Blue's announcement could pave the way into a future without silicon in our gadgets. Silicon, which has long been used to create transistors for humongous mainframes to the tiny wrist-based computers we call smartwatches, is nearing its physical limit, so much so that Moore's Law might finally meet its end.

IQE Licenses Translucent's III-V-On-Silicon Technology

IQE has signed an agreement with Silex System's subsidiary, Translucent, for the exclusive licence of Translucent's crystalline Rare Earth Oxide (cREO) semiconductor technology, and taken an option to subsequently acquire the technology.

Translucent's cREO technology offers a new approach to the manufacture of a wide range of compound semiconductor on silicon products, including GaN on silicon for the growing power switching and RF technologies markets. It is protected by a wide ranging IP portfolio consisting of 74 granted patents, and 13 additional patent applications.

Translucent's crystalline rare earth epitaxial layers are designed to be high quality templates for the MOCVD growth of III-V and III-N devices on silicon substrates. Available in both 150mm and 200mm diameters, the templates have been used for the grown of power GaN HEMT epiwafers. These templates provide an entry point for new adopters of power GaN supporting both AlN first MOCVD but also enabling GaN first growth processes not currently available for MOCVD growth on silicon.

NXP-Freescale Merger Nears Completion

While waiting for regulatory approvals in China and in the United States, the pending acquisition of Freescale by NXP remains "on track," according to Steve Wainwright, general manager of EMEA (Europe, the Middle East and Africa), vice president, sales and marketing at Freescale Semiconductor.

Speaking with EE Times at Freescale's event "Designing with Freescale," Wainwright was upbeat about the opportunity for the merged entity. NXP will become the world's fourth largest non-memory semiconductor company, after Intel, Texas Instruments and Broadcom; and will become the world's biggest automotive semiconductor supplier.

Sony Restructure To Grow Image Sensor Business

Sony has formed a new company for its semiconductor business, which includes its image sensor technology, called Sony Semiconductor Solutions Corporation. The new company will begin operations on 1 April 2016.

Sony has also completed the acquisition of Belgian time-of-flight image sensor company Softkinetic Systems, which has become a wholly-owned subsidiary of Sony.

The aim of the change in operational structure, Sony says, is to ‘enable each of the three main businesses within this segment, namely the semiconductor, battery and storage media businesses, to more rapidly adapt to their respective changing market environments and generate sustained growth.’

ARM-Based Chipsets Target HD HEVC Entry Stbs

STMicroelectronics has rolled out its line of HD HEVC Liege3 chipsets for entry set-top-box (STB) markets composed of satellite variants (STiH337/STiH332), cable-market products (STiH372) and IPTV STB devices (STiH307/STiH302).

More than just an upgrade of previous-generation devices, the chipset family combines the latest architectures used in ST's Cannes (STiH310/STiH312/318) products with optimised IPs to deliver future-proof SoCs with high integration, stated the company. This will enable large-scale migration of entry set-top boxes towards high efficiency video coding (HEVC)

STMicroelectronics Drives The Pace Of Sat-Nav Progress With Enhanced Support For 3D Apps On TESEO Navigation Engines

GENEVA, Sept. 27, 2015 (GLOBE NEWSWIRE) -- STMicroelectronics (NYSE:STM), a global semiconductor leader serving customers across the spectrum of electronics applications, is bringing next-generation satellite navigation to today's drivers with the launch of enhanced, always-available, always-accurate 3D positioning on its TESEO III automotive-navigation ICs.

The new TESEO DRAW firmware for ST's multi-constellation positioning chips enables navigation devices to provide continuous, accurate location and turn-by-turn instructions even when satellite signals are poor or unavailable, such as in tunnels, covered car parks, or multi-level highways. TESEO DRAW also enhances performance in built-up areas, such as in urban canyons, where conventional navigation systems can lose accuracy.

Chinese, German Semiconductor Manufacturers Set for Memory Market Invasion

In the global memory semiconductor market, which is being led by Korean firms such as Samsung Electronics and SK Hynix, the recent actions of Chinese and German producers are alarming.

The U.S. still has the majority of the global semiconductor market.According to foreign media reports including the EE Times on Sept. 21, new semiconductor firm FMC, which consists of workers from German semiconductor company Qimonda that filed for bankruptcy in 2008, will soon be officially established. Currently, FMC is separating from the Technical University of Dresden and is raising funds from numerous investors, including the government.

FMC is a company that was funded after being recognized for ferroelectric semiconductor technology using hafnium oxide (HfO2). The firm is trying to produce Ferroelectric RAM (FRAM), which is called “dream memory,” by using hafnium, a chemical element with atomic number 72. FRAM has all the advantages of next-generation RAM. Many countries, including Korea, have been studying FRAM, but the research has come to a standstill, since there are many problems in terms of materials and the degree of integration. Samsung Electronics has also been studying FRAM since the 1990s.

Kostal And Infineon Equip The Car With 6th Sense For Increased Traffic Safety

Munich and Luedenscheid, Germany – September 15, 2015 – Throughout Europe 25,700 people were killed on the roads last year – an average of 70 traffic fatalities a day. Most of these accidents happened because the motorists weren’t paying attention. A new system has been designed to assist the driver and significantly reduce the number of accidents. At the 2015 International Motor Show (IAA), Leopold Kostal GmbH & Co. KG, is presenting a camera-based driver assistance system with know-how from Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY).

This system detects whether the driver is showing signs of drowsiness (nodding off) or is distracted. And the car instantly responds – with a vibrating seat or a warning tone, for instance. The less attentive the driver gets, the more attentive the car gets. In order to respond quickly and accurately, the assistance and the emergency braking systems can automatically activate in advance of a potential emergency.

Epiwafer Yields 20% Efficiency On Solar Cells

In order to bring the Fraunhofer Institute for Solar Energy Systems ISE's kerfless EpiWafer technology to the market and rapid commercialisation, NexWafe GmbH was spun out of the institute. In the EpiWafer technology, a thick crystalline silicon layer is epitaxially deposited and subsequently detached after growth to produce a freestanding wafer of standard thickness.

Due to the radical changes in the manufacturing value chain, EpiWafers can be produced at an appreciably lower cost compared to the traditional wafer manufacturing process. The EpiWafer is a direct substitute for conventional n- or p-doped silicon mono-crystalline wafers.

LED Lighting Brightens Car Headlight Market

According to the latest data published by just-auto's QUBE automotive analysts, traditional halogen front headlight bulbs will continue to lead OE fitment worldwide. With a fitment rate of more than 80 per cent this year, accounting for some 73 million front headlight sets, analysts believe that halogen is still the leading automotive front light technology solution for the global industry.

However, just-auto's analysts believe that, although fitment will decline to about 75 per cent by 2030, volume will increase by nearly 35 per cent to some 99 million headlight sets due to continued total industry volume (TIV) growth.

This performance of halogen, while losing market share, will translate to a CAGR for the 2015-2030 period of a narrow two per cent, slightly below the TIV CAGR of 2.6 per cent for the same period.

Self-Driving Cars Promise Remarkable Battery Cost Savings

According to the latest report from Lux Research, plug-in vehicles can save up to $1,800 in battery costs, or extend driving range by 24 miles with the addition of autonomous features such as self-parking, making electric vehicles (EVs) more affordable.

Recently multiple academic studies indicate that autonomous features including self-parking, expected as early as 2016, may boost fuel efficiency by as much as 10 per cent, when compared with human drivers. This translates into $1,800 in battery cost savings in a Tesla, or an addition of 24 miles to driving range.

Berkeley Lab Unveils 2D Atomic-Thin Semiconductor

LONDON—Researchers at the Department of Energy (DOE)'s Lawrence Berkeley National Laboratory (Berkeley Lab) have managed to grow atomically thin 2D sheets of organic-inorganic hybrid perovskites from a solution. The ultrathin sheets are claimed to be of high quality, large in area, and are square-shaped.

Because they are ionic materials, these hybrid organic-inorganic perovskites boast special properties such as photoluminescence, color-tunability, and a unique structural relaxation not found in covalent semiconductor sheets such as graphene, boron nitride, and molybdenum disulfide.

New Process Makes Low-Cost Wafers For Solar Cells

Fraunhofer researchers developed a manufacturing technique that cuts material losses to silicon wafers, which are critical in developing solar cells. The new process allows material savings of 50 per cent and reduction in energy costs of up to 80 per cent.

Current manufacturing techniques result in loss of half of the silicon during production of the wafers. This is not the case with the new process developed by researchers at the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg.

"With our method, we can avoid almost all of the losses that occur during the conventional production process," says researcher Dr Stefan Janz at the ISE. "This means we are reducing material losses by 50 per cent while using 80 per cent less energy."

Organic Semiconductor Crystals Grown Vertically For First Time

Semiconductors are the backbone of modern electronics — tablets, smartphones, laptops, medical equipment, high-tech sensors, solar cells and more.

Soon, those semiconductors could be more powerful and efficient, thanks to a breakthrough by scientists at the UCLA's California NanoSystems Institute. Materials scientists there have found a way to grow a type of organic semiconductor crystals vertically, a first.

The semiconductor material tetraaniline is prized by electronics engineers for its unique electrical and chemical characteristics.

Now, scientists have enhanced those characteristics by growing tetraaniline crystals vertically in a graphene substrate — a single layer of carbon atoms. Currently, semiconducting crystals are grown horizontally within an inorganic substrate like silicon.

Russian IT And Telecom Tech Solutions Pitched To Samsung Hqs

Russian innovative companies, operating in a range of technology fields, primarily IT and telecom, have pitched their projects to the Samsung headquarters outside Seoul, in South Korea, the Skolkovo Foundation website announced.

Some of them are already present in South Korea. For example, MobilityLab, a Russian developer, has come to a partnership agreement with Samsung, being now Russia's first developer of corporate mobile apps to join the Samsung Enterprise Alliance Program (SEAP). The SEAP partner status, awarded this past May, is expected to help the Russian company promote its WorksPad business app in the global corporate software market.

New Super-Strong And Ultra-Light Material Awaits Testing In Urals

Researchers at the Yekaterinburg-based Institute of Engineering Science (a Ural branch of the Russian Academy of Sciences) have received a $70,000 government grant for the development of technology to make super-strong and ultra-lightweight material for aerospace and sports applications, the Russian news agency TASS reported, citing a source at the Sverdlovsk Regional Ministry of Industry and Science.

The new material is reportedly being developed as a compound based on aluminum which is strengthened with silicon carbide.

Smart Watches Move Into The Russian Payments Market

Russian banks now offer customers a new way to pay for purchases. In mid-July, Alfa Bank started selling Austrian Watch2pay watches, and it was soon followed by Center-Invest, based in Rostov-on-Don. Gazprombank and AK Bars in Kazan, however, introduced the gadget even earlier, in April 2013.

The watch has a built-in bank card with MasterCard PayPass support for contactless payment. Currently, the watches can only be used at 1,564 shops in Moscow, 610 in Kazan, a little over 100 in St. Petersburg, and only a few dozen in other major cities. These are primarily supermarkets and fast food restaurants, such as McDonald's and Subway. You can also pay the fare on some bus routes in Moscow and St. Petersburg.

Telenor To Sell $2.3bn Vimpelcom Stake

Norwegian telecoms group Telenor is looking to end its fractious relationship with VimpelCom by selling its $2.3bn stake in the Russian mobile phone operator.

Telenor said it would seek a buyer for its 33 per cent of shares in the New York-listed company amid a bribery investigation of VimpelCom's activities in Uzbekistan.

The decision comes three years after a struggle with Russian billionaire Mikhail Fridman for control of the group, which left Telenor in a weakened minority position.

Svein Aaser, chairman of the board of Telenor, said: “The VimpelCom asset, where Telenor holds a minority position without the possibility to fully control the company, has been challenging.

World Economic Round Up

The International Monetary Fund (IMF) said that the world economy will grow at its slowest pace this year since the global financial crisis with a deep slowdown in China and other emerging economies masking a strengthening recovery in rich countries. 2015 will mark the fifth consecutive year that average growth in emerging economies has declined, the fund predicts in its twice-yearly world economic outlook. This drag on global growth is sufficient to pull it down to 3.1 percent this year even though advanced economies will post their best performance since 2010. With downgrades to its growth forecasts, the fund called for countries to redouble efforts to boost domestic spending and reform their economies to improve the potential for expansion

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 2015

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 16 November 2015
- Industry Forecast Briefing, London – 19 January 2016

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 16th November 2015
AND
INDUSTRY FORECAST BRIEFING
THURSDAY 19th January 2016

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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