



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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CEA-LETI DISCLOSES DETAILS OF €830M PILOT LINE FOR EUROPE

CEA-Leti announced the launch of FAMES, a fully depleted silicon-on-insulator (**FD-SOI**) pilot line for applications with nonvolatile embedded memories, 3D integration, RF components and power management ICs to ensure European sovereignty.

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TERAHERTZ RADIATION DETECTORS USING CMOS COMPATIBLE SOI SUBSTRATES

In this review, the different types of Terahertz (THz) detectors exploiting silicon-on-insulator (**SOI**) substrate are discussed, and their key performances in terms of responsivity, noise equivalent power (NEP), bandwidth, and dynamic range are compared.

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ATOMERA ENABLES BREAKTHROUGH RF SUBSTRATES FOR 5G ADVANCED AND 6G PRODUCTS

Atomera announces the availability of an MST® solution to dramatically enhance performance of **RFSOI** wafer substrates for leading-edge cellular communication products. The company will demonstrate the effectiveness of this solution on experimental 300mm RF-SOI wafers with an ultra-thin active layer utilizing a new formulation of Atomera's MST® technology.

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PSEMI INTRODUCES NEW HIGH-POWER, HIGH-LINEARITY SP4T RF SWITCH

pSemi announces the introduction of PE42447, a high power and linearity SP4T RF switch manufactured on pSemi's advanced silicon-on-insulator (**SOI**) technology. It delivers extremely low insertion loss and high linearity with high input power handling capability, making it ideal for hybrid beamforming in wireless infrastructure as well as any other applications in broad market that requires such exceptional performance.

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SOI ECOSYSTEM NEWS

WOLFSPEED ANNOUNCES KEY MILESTONES AND OPERATIONAL UPDATE

Wolfspeed's Mohawk Valley silicon carbide fab has reached 20% wafer start utilization. Additionally, Wolfspeed's Building 10 Materials facility has achieved its 200mm wafer production target to support approximately 25% wafer start utilization at the Mohawk Valley fab by the end of calendar year 2024.

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GLOBALWAFERS GETS EU FUNDING FOR 12-INCH CHIP PLANT IN ITALY

According to GlobalWafers, the potential 103 million euros in public funding aims to support the European industrial deployment of microelectronics and communication technologies across the EU value chain, under the IPCEI-ME/CT (Important Project of Common European Interest in Microelectronics and Communications Technologies) Program.

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DIRECT BANDGAP QUANTUM WELLS IN HEXAGONAL SILICON GERMANIUM

The recently developed hexagonal Si1-xGex semiconductor features a direct bandgap at least for x > 0.65, and the realization of quantum heterostructures would unlock new opportunities for advanced optoelectronic devices based on the SiGe system. This study demonstrates the synthesis and characterization of direct bandgap quantum wells realized in the hexagonal Si1-xGex system.

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ANNEAL-FREE ULTRA-LOW LOSS SILICON NITRIDE INTEGRATED PHOTONICS

New techniques are needed to maintain the state-of-the-art losses, nonlinear properties, and CMOS-compatible processes while enabling this next generation of 3D silicon nitride integration. This work reports a significant advance in silicon nitride integrated photonics, achieving the lowest loss to date for an anneal-free silicon nitride waveguide.

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COMPOUND SEMICONDUCTOR

GLOBALFOUNDRIES ACQUIRES TAGORE TECHNOLOGY'S GAN TECHNOLOGY TO ACCELERATE DISRUPTIVE POWER MANAGEMENT SOLUTIONS

The acquisition expands GF's power IP portfolio and broadens access to market leading GaN IP that will enable GF customers to quickly bring differentiated products to market. As a part of the acquisition, a team of experienced engineers from Tagore, dedicated to the development of GaN technology, will be joining GF.

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TI AND DELTA OPEN GAN LAB IN TAIWAN

There will be phases of development for next-generation automotive power solutions. In phase three, the two companies will collaborate to develop the next generation of automotive power solutions, capitalizing on TI's more than 10 years of experience in developing and manufacturing products with gallium nitride (GaN) technology.

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4H SILICON CARBIDE BULK ACOUSTIC WAVE GYROSCOPE WITH ULTRA-HIGH Q-FACTOR FOR ON-CHIP INERTIAL NAVIGATION

The selection of a substrate with a small Akhiezer dissipation is crucial to achieve a breakthrough in the next-generation MEMS gyroscope. This study explores silicon carbide, specifically its monocrystalline 4H polytype, as a substrate to improve gyroscope performance due to its low phonon Akhiezer dissipation and its isotropic hexagonal crystal lattice.

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PERFORMANCE ASSESSMENT OF INGAAS-SOI-FINFET FOR ENHANCING SWITCHING CAPABILITY USING HIGH-K DIELECTRIC

Indium Gallium Arsenide (InGaAs) is a compound semiconductor that has gained attention in the field of semiconductor devices. This work presents a high-k In0.53Ga0.47As silicon-on-insulator FinFET (InGaAs-SOI-FinFET) for high-switching and ultra-low power applications at 7 nm gate length.

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SEMI BLOG

ATHINIA AND SEMI COLLABORATE TO ADVANCE SEMICONDUCTOR SUPPLY CHAIN AGILITY

An agile semiconductor supply chain is becoming increasingly important to prepare for and respond quickly to market changes and unforeseen events in order to ensure supply chain continuity. To increase supply chain efficiencies, shorten time to market, and improve data quality and sustainability, Athnia is working with the SEMI Supply Chain Management (SCM) to bring value chain players together to share, aggregate, and analyze data.

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SEMI NEWS HIGHLIGHT

NEW SEMI GOVERNING COUNCIL FOR SMART MEDTECH INITIATIVE TO CONNECT SEMICONDUCTOR AND LIFE SCIENCE COMMUNITIES

SEMI announces the formation of a governing council for its Smart MedTech Initiative that will guide the initiative in its vision to revolutionize global healthcare through innovation, democratization, and pioneering advances in preventative care. By focusing on wearables, AI, and commercialization strategies, the initiative aims to democratize healthcare access and reduce costs through preventative solutions.

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