



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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Special Announcement

Just Announced: October 23: Shanghai FD-SOI Forum 2024 & October 24: 2024 International RF-SOI Workshop – both at the Pudong Shangri-La, Shanghai. Plan now to participation and watch this space for more details!

FEATURED IN THIS EDITION

AMD PARTNERS WITH IIT-B INCUBATED SINE TO DEVELOP ENERGY-EFFICIENT SNN CHIPS

Under this partnership, AMD will provide grants to IIT-B incubated startups working on the development of energy-efficient Spiking Neural Network (SNN) chips. The first grant was awarded to Numelo Technologies for developing SNN chips using ultralow power quantum tunnelling on silicon on insulator (SOI) technology.

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U.S. IN PRELIMINARY \$400M DEAL WITH GLOBALWAFERS TO BUILD 300MM SILICON WAFER FABs

The U.S. Department of Commerce announced a proposed \$400 million CHIPS + Science Act investment to build what the agency said would be the first domestic fab for 300mm silicon wafers and expand production of silicon-on-insulator (SOI) wafers.

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SIGNAL HOUND INTRODUCES NEW SP8T ANTENNA SWITCH BASED ON SILICON-ON-INSULATOR TECHNOLOGY

Signal Hound introduced the addition of the RFS8 to its expanding product line. The RFS8 is a single pole eight-throw (SP8T) absorptive solid-state switch. Using silicon-on-insulator (SOI) technology, the RFS8 provides RF switching across eight ports at up to 8 GHz.

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TUNABLE QUANTUM EMITTERS ON LARGE-SCALE FOUNDRY SILICON PHOTONICS

This study introduces a platform for integrating tunable single photon emitters on large-scale photonic integrated circuits (PICs). By hybrid integration of InAs/InP chiplets with a state-of-the-art silicon-on-insulator (SOI) PIC, researchers have demonstrated scalable emission wavelength programmability with individual emitter resolution.

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SOI ECOSYSTEM NEWS

NEXPERIA PARTNERS WITH AIXTRON FOR 200MM SiC AND GAN POWER

AIXTRON SE will support Nexperia B.V. in the ramp-up of its 200mm volume production for silicon carbide (SiC) and gallium nitride (GaN) power devices. Both GaN and SiC epitaxial films are essential for the design of next-generation energy-efficient Field-Effect (FET) or Metal-Oxide-Field Effect (MOSFET) transistors to be used in various power conversion applications.

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ONSEMI ACCELERATES SILICON CARBIDE INNOVATION TO POWER THE TRANSITION TO ELECTRIFICATION

onsemi introduced its latest generation silicon carbide technology platform, EliteSiC M3e MOSFETs, which will play a fundamental role in enabling the performance and reliability of next-generation electrical systems at lower cost per kW, thus influencing the adoption and effectiveness of electrification initiatives.

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NUMERICAL AND EXPERIMENTAL DEMONSTRATION OF A SILICON NITRIDE-BASED RING RESONATOR STRUCTURE FOR REFRACTIVE INDEX SENSING

Silicon nitride (SiN) photonics plays a crucial role in optical communication and sensing. This study showcases a comprehensive investigation into a silicon nitride platform-based ring resonator device designed to detect refractive index variations in the ambient medium.

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ON MORPHOLOGY OF ALUMINUM–GALLIUM NITRIDE LAYERS GROWN BY HALIDE VAPOR PHASE EPITAXY

This research contributes to a deeper understanding of the growth mechanisms involved in the halide vapor phase epitaxy of aluminum–gallium nitride, and furthermore it suggests a trajectory for the optimization of growth parameters so as to obtain high-quality materials for advanced optoelectronic and electronic applications.

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COMPOUND SEMICONDUCTOR

CANADA INVESTS \$120M IN CHIPS

The five-year initiative called FABrIC is expected to provide resources to create new manufacturing processes for Compound Semiconductors, Quantum Technologies, Photonics, and MEMS and encourage innovation through a series of Challenge Calls – calls to small and medium sized businesses and researchers.

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AXUS TECHNOLOGY RECEIVES ORDERS FROM WORLD'S TOP SiC DEVICE MAKERS

Axus Technology announced strong sales momentum for its innovative Capstone® CS200 Series – the industry's latest CMP processing tool. In recent months, the company has received orders from silicon carbide (SiC) semiconductor makers based in Europe, Asia and North America.

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PROJECT TO DEVELOP EV-GRADE 1.2 KV SiC MOSFETS

Oxford Instruments will be working with Hitachi Energy Switzerland and the University of Warwick to improve SiC power MOSFET gate technology using ALD oxides. This proof-of-concept project will demonstrate the viability and advantages of utilizing ALD deposited oxides in a commercial SiC MOSFET device.

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DIRECT HIGH-TEMPERATURE GROWTH OF GAN ON Si USING TRIMETHYLALUMINUM PREFLOW ENABLING VERTICALLY-CONDUCTING HETEROSTRUCTURES

Researchers at École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland claims the first demonstration of direct growth of gallium nitride (GaN) at high temperature on silicon (Si) substrates simply by using a trimethyl-aluminium (TMAI) preflow, without any intentional AlN buffer.

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SEMI BLOG

SEMI EUROPE AND ESIA DRIVE POSITIVE OUTCOMES THROUGH PFAS ADVOCACY

While the industry recognizes the importance of transitioning away from Per- and polyfluoroalkyl substances (PFAS), and research to that effect is ongoing, current technological limitations do not allow the industry to manufacture semiconductors without the use of PFAS or to discover scientifically viable alternatives that can effectively substitute their use. Considering the criticality of the PFAS issue for the semiconductor industry, SEMI and the European Semiconductor Industry Association (ESIA) have greatly strengthened their joint advocacy efforts over this past year concerning the ECHA's PFAS restriction proposal.

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SEMI NEWS HIGHLIGHT

SEMI STANDARDS LEADERS HONORED AT SEMICON WEST 2024

SEMI announced honors awarded to industry leaders for their outstanding accomplishments in developing Standards for the electronics and related industries. The North America SEMI Standards International Awards were presented on July 9 at the SEMI International Standards reception at SEMICON West 2024 at the Moscone Center in San Francisco.

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EVENTS



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