



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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Check out the [full agenda for the SOI Market & Technology Symposium](#), scheduled as the culmination for SEMICON West, July 13, 2023

FEATURED IN THIS EDITION

X-FAB LAUNCHES 110NM BCD-ON-SOI FOUNDRY PROCESS

The XT011 BCD-on-SOI platform reflects the growing need for greater digital integration and processing in analog and power applications and brings together the appealing attributes associated with both SOI and deep trench isolation for bipolar designs.

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MONOLITHIC QUANTUM DOT DISCRETE MODE LASER ON SOI

A unique InAs/GaAs quantum dot discrete mode (DM) laser directly grown on a **silicon-on-insulator (SOI)** substrate with embedded silicon gratings has been demonstrated here, which is regrowth-free and compatible with integrated silicon photonics.

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SUPER-COMPACT UNIVERSAL QUANTUM LOGIC GATES WITH INVERSE-DESIGNED ELEMENTS

Using the inverse-designed method on a silicon photonic chip with an integrated source, this study reports the implementation of super-compact universal quantum logic gates. The quantum chip is designed on the **silicon-on-insulator (SOI)** platform with the 220-nm-thick Si layer.

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A TUNABLE AND VERSATILE 28NM FD-SOI CROSSBAR OUTPUT CIRCUIT FOR LOW POWER ANALOG SNN INFERENCE WITH ENVM SYNAPSES

A co-design methodology of an analog SNN crossbar output circuit designed in a 28nm **FD-SOI** technology node is reported here, which comprises a tunable current attenuator and a leak-integrate and fire neurons that would enable the integration of emerging non-volatile memories (eNVMs) for synaptic arrays based on various technologies.

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SOI ECOSYSTEM NEWS

INAs QUANTUM DOT LASERS ON SILICON CARBIDE SUBSTRATE

University of California Santa Barbara and King Abdullah University of Science and Technology have reported enhanced thermal performance from an indium arsenide (InAs) quantum dot (QD) laser flip-chip bonded on silicon carbide (SiC).

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GESN VCSE P-I-N DIODES BONDED ON 200MM SILICON WAFERS

Researchers based in Singapore, the USA and China claim the “first demonstration” of 200mm (8-inch) wafer-scale germanium tin (GeSn) multiple-quantum-well (MQW) vertical-cavity-surface-emitting (VCSE) p-i-n structures and diodes.

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CEA-LETI PROOF OF CONCEPT DEMONSTRATES ELECTRONS MOVE FASTER IN GERMANIUM TIN THAN IN SILICON OR GERMANIUM

CEA-Leti research scientists have demonstrated that electrons and other charge carriers can move faster in germanium tin than in silicon or germanium, enabling lower operation voltages and smaller footprints in vertical than in planar devices.

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PROGRESSIVE QUANTUM LEAPS—HIGH-SPEED, THIN-FILM LITHIUM NIOBATE QUANTUM PROCESSORS DRIVEN BY QUANTUM EMITTERS

A research team at the University of Copenhagen and the University of Münster developed an integrated photonic platform with thin-film lithium niobate. The scientists integrated the platform with deterministic solid-state single photon sources using quantum dots in nanophotonic waveguides.

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SEMI NEWS HIGHLIGHT

WOMEN IN SEMICONDUCTORS 2023: BRIDGING THE GENDER GAP THROUGH ALLYSHIP

Hosted by the SEMI Foundation, the Women in Semiconductors (WiS 2023) was an opportunity for women and men to discuss the importance of allyship, mentorship, overcoming biases, all of which bridge the gender gap and create a work environment in which women can grow, succeed, and find belonging.

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BOOSTING ELECTRONICS SUPPLY CHAIN AGILITY WITH DIGITAL TWINS

Increasingly adopted by supply chain managers, digital twin technology enables supply chain managers to create a virtual model of their operations, allowing them to simulate various scenarios and optimize their processes to improve resiliency and efficiency while reducing costs.

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EVENTS



EMG WEBINAR

Date: Jun 21, 2023
Location: Zoom

In recent years, sustainability has emerged as a critical aspect of global development, demanding increased attention across industries. Join us as we foster knowledge sharing and collaborations to create a sustainable future for the semiconductor industry and the planet.

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SEMICON CHINA

Date: Jun 29- July 1, 2023
Location: Shanghai New International Expo Centre (SNIEC), China

SEMICON China connects you to the world's fastest-growing and most dynamic microelectronics market, and gives you the platform to showcase your products, technologies, and brand in front of the most qualified audience of industry professionals in China.

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SOI MARKETS & TECH SYMPOSIUM

Date: July 13, 2023
Location: Moscone Center, San Francisco, US

This is a single day event exploring applications, design and success stories for SOI wafers used in RF, Edge IOT, Automotive and design and manufacturing updates. Industry experts will provide updates on FD-SOI and RF-SOI and their complete ecosystems. Open forum opportunities will allow engagement time with experts and all speakers from the fabless, foundry and EDA/IP communities. Anyone needing an update or considering the benefits which SOI technology brings to semiconductor performance should attend.

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