



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

Share 

SPECIAL EVENT



FEATURED IN THIS EDITION

TOSHIBA INTRODUCES 32GBPS 2:1 MULTIPLEXER/1:2 DEMULTIPLEXER SWITCHES FOR HIGH-SPEED SIGNALS

The two new products offer a -3dB bandwidth (differential) of 26.2GHz or 27.5GHz (typ.) at a maximum DC current in active mode of 150μA, ensuring high signal integrity levels. Toshiba achieves these high-performance characteristics by adopting the company's original silicon-on-insulator complementary metal oxide semiconductor (SOI-CMOS) front-end process technology.

[Read More](#)

MICROSTRUCTURAL CHARACTERIZATION OF INP FILMS ON SOI (001) SUBSTRATES GROWN BY SELECTIVE LATERAL METAL-ORGANIC VAPOR-PHASE EPITAXY

This study reported a detailed microstructural analysis of InP films that were fabricated on (001) silicon-on-insulator (SOI) substrates by using metal-organic vapor-phase epitaxy and the lateral aspect ratio trapping (LART) method.

[Read More](#)

HIGHLY PHOTORESPONSIVE VERTICALLY STACKED SILICON NANOWIRE PHOTODETECTOR WITH BIPHASIC CURRENT STIMULATOR IC FOR RETINAL PROSTHESES

This paper presents the integration of fabricated vertically stacked silicon nanowires (SINWs) photodetectors with a switched capacitor stimulator circuit to demonstrate their feasibility for retinal prosthesis applications. The photodetector is fabricated on a p-type (100) silicon-on-insulator (SOI) wafer.

[Read More](#)

ZERO-CROSSTALK SILICON PHOTONIC REFRACTIVE INDEX SENSOR WITH SUBWAVELENGTH GRATINGS

Researchers have successfully demonstrated an ultracompact silicon photonic refractive index sensor utilizing unique zero-crosstalk responses enabled by subwavelength grating (SWG) anisotropic metamaterials. The device is designed on a 220 nm thick silicon-on-insulator (SOI) platform.

[Read More](#)

SOI ECOSYSTEM NEWS

STMICROELECTRONICS UNVEILS NEW GENERATION OF SILICON CARBIDE POWER TECHNOLOGY TAILORED FOR NEXT-GENERATION EV TRACTION INVERTERS

While serving the needs of both the automotive and industrial markets, the new technology is particularly optimized for traction inverters, the key component of electric vehicle (EV) powertrains. The company plans to introduce further advanced SiC technology innovations through 2027 as a commitment to innovation.

[Read More](#)

GROWTH OF LOW-TEMPERATURE EPITAXIAL LITHIUM NIOBATE THIN FILMS AND GUIDED-WAVE OPTICAL PROPERTIES

Lithium niobate (LiNbO₃, LN) is an excellent ferroelectric material due to its piezoelectric and electro-optical properties, high Curie temperature (1210 °C), significant resistivity, and high piezo-response. This study aims to investigate the crystallinity and optical properties of LiNbO₃ films deposited on sapphire by chemical beam vapor deposition at a lower deposition temperature than previously reported.

[Read More](#)

SOITEC AND RESONAC ANNOUNCE THE SIGNING OF A JOINT DEVELOPMENT AGREEMENT IN SMARTSiC™ TO ACCELERATE HIGH-PERFORMANCE SILICON CARBIDE ADOPTION IN NEXT-GENERATION ELECTRIC VEHICLES

Resonac Corporation and Soitec have signed an agreement to develop 200mm (8-inch) SmartSiC™ silicon carbide (SiC) wafers using Resonac substrates and epitaxy processes, in a major step for the deployment of Soitec's high-yielding silicon carbide technology in Japan and other international markets.

[Read More](#)

USING BOTH FACES OF POLAR SEMICONDUCTOR WAFERS FOR FUNCTIONAL DEVICES

So far, only a single face of c-axis-oriented GaN single-crystal wafers is used for either photonic or electronic devices. In this work, the two polarities on the opposite faces of a GaN single crystal are combined to realize a photonic device on one side and an electronic device on the other.

[Read More](#)

COMPOUND SEMICONDUCTOR

US-INDIA FAB PACT TARGETS COMPOUND SEMIS

The India-US semiconductor pact will manufacture infrared, GaN and SiC semiconductors, enabled by support from the India Semiconductor Mission as well as a strategic technology partnership between Bharat Semi, 3rdTech, and the US Space Force.

[Read More](#)

DESIGN AND SIMULATION OF A HIGH-RESPONSIVITY DIELECTRIC METASURFACE SI-BASED INGAAS PHOTODETECTOR

A Si-based InGaAs photodetector with a dielectric metasurface based on aspect ratio trapping (ART) epitaxial structures is presented. By growing high-quality InGaAs/InP multiple quantum well structures on a Si substrate and introducing a dielectric metasurface structure in the top layer of the device, it can effectively improve the light confinement ability and locally enhance the light absorption ability.

[Read More](#)

UK GOVERNMENT BUYS COMPOUND SEMI FAB

The UK Government has acquired Coherent's GaAs fab in Newton Aycliffe, County Durham, as a crucial supply chain to UK defence. The site is said to be the only secure facility in the UK with the skills and capability to manufacture GaAs semiconductors, vital for a number of military platforms.

[Read More](#)

WAFER-SCALE FABRICATION OF INGAP-ON-INSULATOR FOR NONLINEAR AND QUANTUM PHOTONIC APPLICATIONS

This work presented an InGaP-on-insulator 100-mm wafer-scale fabrication process with 200 nm feature sizes using direct wafer bonding and substrate removal, deep-UV photolithography, and dry-etching methods. The results establish InGaP as a promising candidate for a wide range of nonlinear photonic applications.

[Read More](#)

SEMI BLOG

CLIMATE WEEK NYC: A CALL FOR SEMICONDUCTOR INDUSTRY CORPORATE LEADERSHIP IN K-12 SUSTAINABILITY ENGAGEMENT

In line with SEMI Sustainability Initiative participation at Climate Week NYC, SEMI is preparing a groundbreaking pilot program at the intersection of youth empowerment, workforce development, and climate action. To help the semiconductor industry develop a climate-literate workforce, the SEMI Climate Equity & Social Impact Working Group and the SEMI Foundation have partnered to develop a global K-12 program open to all SEMI members for participation and sponsorship.

[Read More](#)

SEMI NEWS HIGHLIGHT

GLOBAL SEMICONDUCTOR PACKAGING MATERIAL MARKET OUTLOOK SHOWS RETURN TO GROWTH STARTING IN 2024

Powered by strong semiconductor demand across diverse end applications, the global semiconductor packaging materials market is expected to start a growth cycle with a 5.6% compound annual growth rate (CAGR) projected through 2028, SEMI, TECHCET and TechSearch International announced in their latest Global Semiconductor Packaging Materials Outlook (GSPMO) report. The report highlights AI as an expected growth driver for advanced packaging applications, despite currently low unit volumes due to the newness of the market segment.

[Read More](#)

EVENTS



Thank you for reading this newsletter. For feedback, please email hhoffman@semi.org.

Subscribe