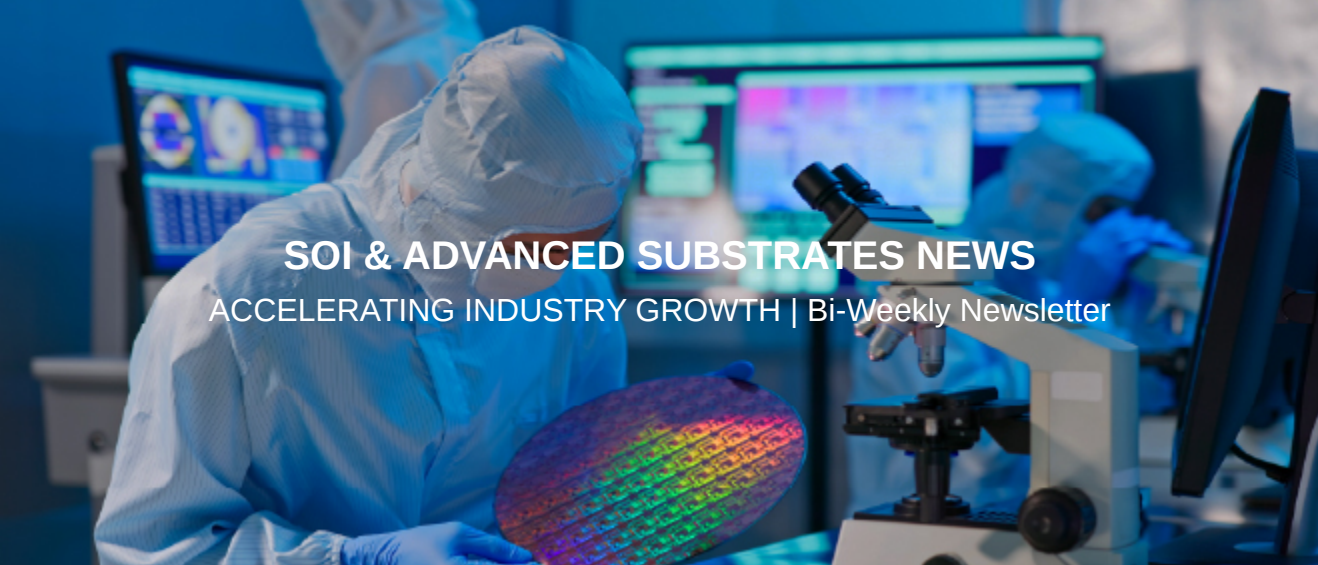




SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

Share 

FEATURED IN THIS EDITION

GLOBALFOUNDRIES AND NXP TO DELIVER NEXT-GENERATION 22FDX SOLUTIONS FOR AUTOMOTIVE, IOT AND SMART MOBILE

This collaboration leverages GF's 22FDX® process technology platform and global manufacturing footprint to optimize the power, performance and time-to-market of NXP's solutions. Purpose-built for intelligence at the edge, 22FDX optimizes energy management to deliver up to 50% higher performance and 70% less power used versus other planar CMOS technologies.

[Read More](#)

IMPACT OF TOTAL IONIZING DOSE ON RADIO FREQUENCY PERFORMANCE OF 22 NM FULLY DEPLETED SILICON-ON-INSULATOR NMOSFETS

The significant suppression of short channel effects by the 22 nm ultra-thin bulk body and buried oxide (UTBB) fully depleted silicon-on-insulator (FDSOI) technology has attracted more and more attention in recent years. This study tried to explore the effect of different total ionizing dose (TID) levels on the RF characteristics of the 22 nm UTBB-FDSOI device.

[Read More](#)

DESIGN OF A NOVEL SIP INTEGRATED RF FRONT-END MODULE BASED ON SOI SWITCH AND SAW FILTER

A novel System-in-Package (SiP) integrated architecture that incorporates Silicon-On-Insulator (SOI) switches and Surface Acoustic Wave (SAW) filters within the chip was proposed, aiming to fulfil the demands for miniaturization and multi-functionality for application in emerging wireless technologies.

[Read More](#)

STIMULATED BRILLOUIN SCATTERING IN A NON-SUSPENDED ULTRA-LOW-LOSS THICK-SOI PLATFORM

Harnessing stimulated Brillouin scattering (SBS) in silicon-on-insulator (SOI) platforms attracts great interests for its potential in narrow-linewidth lasers and microwave photonics. This work reports, for the first time, the SBS response in a non-suspended ultra-low-loss thick-SOI waveguide platform.

[Read More](#)

SOI ECOSYSTEM NEWS

INFINEON UNVEILS THE WORLD'S THINNEST SILICON POWER WAFER

Infineon has reached a breakthrough in handling and processing the thinnest silicon power wafers ever manufactured, with a thickness of only 20 micrometers and a diameter of 300 millimeters, in a high-scale semiconductor fab. The ultra-thin silicon wafers are only a quarter as thick as a human hair and half as thick as current state-of-the-art wafers of 40-60 micrometers.

[Read More](#)

PHOTONDELTA LAUNCHES €50,000 GLOBAL PHOTONICS ENGINEERING CONTEST

The winner of the contest will receive €50,000 in services from the ecosystem, backed by a €60 million startup fund. Industry leaders, including imec, Lionix, SMART Photonics, PHIX Photonics Assembly, Epiphany, and Bright Photonics, join forces to transform the winning idea into reality.

[Read More](#)

OPTIMIZATION OF LPCVD DEPOSITION CONDITIONS OF SILICON-RICH SILICON NITRIDE TO OBTAIN SUITABLE OPTICAL PROPERTIES FOR PHOTOLUMINESCENT COATING

Silicon-rich silicon nitride (SRSN) has been considered as a down-conversion film for solar cells in the photovoltaic industry. In this work, SRSN films have been obtained by the Low-Pressure Chemical Vapor Deposition (LPCVD) technique at low to moderate deposition temperatures with a variation in the precursor gas pressure ratio.

[Read More](#)

INTEGRATED NON-RECIPROCAL MAGNETO-OPTICS WITH ULTRA-HIGH ENDURANCE FOR PHOTONIC IN-MEMORY COMPUTING

A new approach to encoding optical weights for in-memory photonic computing was proposed, using magneto-optic memory cells comprising heterogeneously integrated cerium-substituted yttrium iron garnet on silicon micro-ring resonators.

[Read More](#)

COMPOUND SEMICONDUCTOR

TI CONVERTS JAPANESE 200MM FAB TO GAN, QUADRUPLES CAPACITY

It's reported that Texas Instruments (TI) has begun the production of gallium nitride (GaN) semiconductors at a 200mm wafer fab in Aizu, Japan. Together with production at Dallas, Texas, this will quadruple TI's GaN manufacturing capacity and allow it to reduce dependence on outsourced supply.

[Read More](#)

RESEARCHERS FIND WAY TO 'HEAR' DEFECTS IN HBN

An international research team led by NYU Tandon School of Engineering and KAIST (Korea Advanced Institute of Science and Technology) has pioneered a new technique to identify and characterise atomic-scale defects in the 2D compound semiconductor hexagonal boron nitride (hBN).

[Read More](#)

WAFER-SCALE VERTICAL INJECTION III-NITRIDE DEEP-ULTRAVIOLET LIGHT EMITTERS

A ground-breaking strategy of AlGaN-based DUV-LEDs stacked on GaN templates is demonstrated to realize the wafer-scale fabrication of devices in vertical injection configuration.

[Read More](#)

PERSPECTIVES ON EPITAXIAL INGaP FOR QUANTUM AND NONLINEAR OPTICS

This paper offers an overview of the emerging InGaP $\chi(2)$ nonlinear integrated photonics platform and its experimental achievements. Additionally, it also examined the current limitations of the InGaP platform and proposed potential solutions to fully unlock its capabilities.

[Read More](#)

SEMI BLOG

SENSING THE WORLD: INNOVATING TO CREATE A MORE CONNECTED FUTURE

With the rapid proliferation of electronics applications with more powerful embedded intelligence, demand for smarter, more efficient sensors is increasing to help devices connect to the world around them. SEMI spoke with Simone Ferri, Vice President and General Manager at STMicroelectronics (ST), about current trends and challenges in the MEMS and imaging sensors market and how ST is driving innovation in this rapidly evolving industry.

[Read More](#)

SEMI NEWS HIGHLIGHT

SEMI EUROPE ANNOUNCES 2024 20 UNDER 30 AWARDS CELEBRATING INNOVATION AND LEADERSHIP

SEMI Europe and the SEMI European Advisory Council for Diversity and Inclusion announced the 2024 20 Under 30 Award Recipients, honoring exceptional young professionals who are driving innovation and success in the semiconductor industry. This prestigious award highlights the most promising leaders under 30-years-old who are making significant contributions within the microelectronics supply chain, fostering a more diverse and inclusive environment in a critical sector.

[Read More](#)

EVENTS



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

Subscribe