



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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2023 SOI Workshop & Forum - October 24-25

Registration is now open for the **2023 International RF-SOI Workshop** that will be held at Pudong Shangri-La hotel in Shanghai on October 24th, 2023. It is organized by VeriSilicon and Simgui, and supported by SEMI China and SOI Industry Consortium. The Workshop will be focused on the application and its opportunity for SOI Industry.

FEATURED IN THIS EDITION

INTEGRATED SPATIAL LIGHT RECEIVERS BASED ON INVERSE DESIGN

Photonic integrated spatial light receivers play a crucial role in free space optical communication systems. Using an inverse design method, this paper proposes a 4-channel and 6-channel spatial light receiver based on a silicon-on-insulator (SOI).

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X-FAB TO PROVIDE FOUNDRY SERVICE FOR PASSIVE DEVICE INTEGRATION

X-Fab has added integrated passive device fabrication to its 130nm RFSOI manufacturing process. Target applications include 5G and 6G cellular communications and radar and satellite communications where there is an increasing need for wider frequency support.

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HIGH-PERFORMANCE SILICON POLARIZATION BEAM SPLITTER ASSISTED BY THE SUB-WAVELENGTH STRUCTURES

A high-performance polarization beam splitter (PBS) is proposed and experimentally demonstrated on the 220-nm silicon-on-insulator (SOI) platform. Results show that the fabricated PBS has excellent performance of IL < 0.8 dB and PER > 24.5 dB over the bandwidth of 1.53-1.61 μm .

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EVIDENCE OF TRANSPORT DEGRADATION IN 22 NM FD-SOI CHARGE TRAPPING TRANSISTORS FOR NEURAL NETWORK APPLICATIONS

Charge trap transistors (CTT) are promising candidates for in-memory computing and available as commercial off the shelf CMOS technologies requiring no additional process complexities. This study reports on the characterization and analysis of 22 nm FD-SOI CMOS technology-based CTT and their application in neural networks.

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SOI ECOSYSTEM NEWS

GLOBALFOUNDRIES OFFICIALLY OPENS EXPANSION FACILITY IN SINGAPORE

As Singapore's most advanced semiconductor facility to date, the expansion fab will produce an additional 450,000 wafers (300mm) annually, raising GF Singapore's overall capacity to approximately 1.5 million wafers (300mm) each year.

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SEMILAB ZRT. AND FRAUNHOFER IISB ESTABLISH A UNIQUE JOINT DEMO LAB TO DEVELOP ADVANCED TECHNIQUES FOR SIC PROCESS CONTROL

The strategic partnership between Semilab and Fraunhofer IISB will allow the utilization of their respective resources and global networks in order to develop new, innovative silicon carbide processes and metrologies.

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UMICORE COLLABORATES WITH RENA TECHNOLOGIES TO DEVELOP THE NEXT GENERATION OF GERMANIUM WAFERS

The collaboration between Umicore EOM and RENA Technologies carries the potential to reshape the landscape of the space solar cell market, underpinned by a steadfast commitment to innovation and sustainability.

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IQE ANNOUNCES STRATEGIC COLLABORATION WITH VISIC TECHNOLOGIES

IQE and VisiC Technologies will collaborate to develop 200mm (8") D-Mode GaN power epiwafers that will be developed at IQE's UK facilities, leveraging IQE's well-established expertise in GaN technology.

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SEMI NEWS HIGHLIGHT

SEMI SEMICONDUCTOR CLIMATE CONSORTIUM AND BCG ISSUE FIRST INSIDER REPORT OF SEMICONDUCTOR VALUE CHAIN'S CARBON EMISSIONS

Titled Transparency, Ambition, and Collaboration: Advancing the Climate Agenda of the Semiconductor Value Chain, the report sheds light on carbon footprints, identifies emission hotspots, and proposes strategies for reducing environmental impact in the semiconductor industry.

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SEMI BLOG

INSPIRING FUTURE GENERATIONS OF CHIP INDUSTRY WORKERS

We invite you to be a part of this critical journey as the SEMI Foundation continues to support the semiconductor industry in attracting, developing, and retaining talent. Join us in our STEM education work and strengthen your company's brand recognition by sponsoring High Tech U in the Classroom kits in your local community.

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EVENTS



2023 Shanghai SOI Forum
Date: Oct 23 – 24, 2023
Location: Shanghai, China

Mark your calendars now for SOI Forum 2023 & RF-SOI Workshop - October 23-24, 2023 in Shanghai, organized by VeriSilicon Holdings Co., Ltd. and Shanghai Simgui Technology Co., Ltd.

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

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