



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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FEATURED IN THIS EDITION

SINGLE EVENT RESPONSE OF FERROELECTRIC SPACER ENGINEERED SOI FINFET AT 14 NM TECHNOLOGY NODE

With technology node scaled down, spacer configuration plays an important role in the overall device performance. Based on the calibrated 3D model for silicon-on-insulator (SOI) FinFET at 14 nm technology node, the impact of spacer on SET is investigated for the first time.

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NEW PATH FOR DENSE PHOTONIC INTEGRATION REVEALED BY UNEXPECTED COUPLING

Utilizing Floquet boundary simulations, researchers designed practically implementable SWG waveguides on a standard silicon-on-insulator (SOI) platform that is readily available in the industry, demonstrating remarkable crosstalk suppression and increased coupling lengths by over two orders of magnitude compared to strip waveguides.

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TEMPERATURE DEPENDENCE OF ESD EFFECTS ON 28 NM FD-SOI MOSFETS

The failure mechanisms caused by electrostatic discharge (ESD) effects at ambient temperatures ranging from -75 to 125°C are investigated by Silvaco TCAD simulator. The devices are NMOS transistors fabricated with 28 nm fully depleted silicon-on-insulator (FDSOI) technology.

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RESEARCH ON HIGH-DOSE-RATE TRANSIENT IONIZING RADIATION EFFECT IN NANO-SCALE FDSOI FLIP-FLOPS

In order to investigate the high-dose-rate transient ionizing radiation response of a Nano-Scale **FDSOI** circuit with an ultra-thin top silicon film under different dose rates and supply voltages, this paper presents an experimental study of a Nano-Scale FDSOI DFFs circuit.

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SOI ECOSYSTEM NEWS

ONSEMI AND BORGWARNER EXPAND STRATEGIC COLLABORATION FOR SILICON CARBIDE

The strategic partnership between onsemi and BorgWarner for silicon carbide (SiC) is being expanded. BorgWarner will integrate onsemi EliteSiC 1200 V and 750 V silicon carbide power devices into its VIPER power modules for traction inverter solutions to increase performance of EVs.

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HIGH LEVEL PROGRAMMING CHIP FOR ADVANCED HEARING AIDS

The Smart Hearing Aid Processor (SmartHeAP) is based on the Cadence Tensilica Fusion G6 DSP and Xtensa LX7 processor, the Cadence digital full flow and the GlobalFoundries 22FDX low power fully depleted silicon on insulator platform.

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IEEE CONFERRED HONORARY AWARD 2022 ON PASQUALE PISTORIO, PRESIDENT & CEO OF STMICROELECTRONICS

The Italy Section of the IEEE has conferred its Honorary Award 2022 on Pasquale Pistorio, President & CEO of STMicroelectronics from its foundation in 1987 to 2005. The award was presented to him on 6 July 2023 in Turin, during the IEEE EUROCON 2023.

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ACTIVE SELF-ASSEMBLY OF PIEZOELECTRIC BIOMOLECULAR FILMS VIA SYNERGISTIC NANOCONFINEMENT AND IN-SITU POLING

Piezoelectric biomaterials have attracted great attention owing to the recent recognition of the impact of piezoelectricity on biological systems and their potential applications in implantable sensors, actuators, and energy harvesters. This study presents an active self-assembly strategy to tailor piezoelectric biomaterial thin films.

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SEMI NEWS HIGHLIGHT

SMARTER SYSTEMS THROUGH HETEROGENEOUS INTEGRATION: HIGHLIGHTS FROM 3D & SYSTEMS SUMMIT

The rise of heterogeneous integration is being fueled by new patterns of demand for electronics systems. "Rather than just one megatrend as in the past, we have several megatrends at the same time – autonomous vehicles, 5G and soon 6G connectivity, the IoT, and AI – driving the exponential growth to \$1 trillion industry by 2030", said Laith Altimime, President of SEMI Europe, in his opening remarks at the 3D & Systems Summit 2023.

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PODCAST: TAKING AIM AT ELECTRONICS SUPPLY CHAIN CHALLENGES AND SOLUTIONS AT SEMICON WEST 2023

In the latest episode of the SEMICON West 2023 podcast series, Francoise von Trapp of 3D InCites spoke with Weiss and Bindhya Vakil, CEO and Founder of Resilinc and one of the panelists, last week at the event about how to deal with the complexities of the semiconductor supply chain. The conversation explores why the chip industry continues to struggle with supply chain disruptions after two years and their connection to sustainability.

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EVENTS



VETWORKS: HIRING FROM THE MILITARY COMMUNITY

Date: August 10, 2023
Location: Virtual

This webinar intends to provide SEMI members with the tools and resources needed to create, implement, and/or expand a military hiring program. The military community is a diverse, skilled, and talented pool that your company should consider as a pool of potential employees that can provide solutions to many of your talent needs.

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ADVANCED PACKAGING SUMMIT 2023

Date: Sept 5, 2023
Location: Suwon Convention Center, South Korea

The summit brings together leading experts, researchers, and industry professionals to share their insights and experiences on advanced packaging solutions that enable high-density, high-bandwidth, and low-latency interconnects for HPC systems.

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SEMICON TAIWAN 2023

Date: Sept 6 – 8, 2023
Location: TaiNEX 1&2 Taipei, Taiwan

With the key focus of "Inspire Innovation. Empower Sustainability.", the exhibition will gather more participants from major companies than ever before, including 850 exhibitors, covering 3,000 booths, and attracting over 50,000 visitors!

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