



SOI & ADVANCED SUBSTRATES NEWS

ACCELERATING INDUSTRY GROWTH | Bi-Weekly Newsletter

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In Memory of Adele Hars

The world of microelectronics has recently lost one of the most tenacious and conscientious journalists - Adele Hars, a polymath who covered everything from Fully Depleted Silicon On Insulator (FD-SOI), Silicon Carbide (SiC) to Gallium Nitride (GaN) and Quantum computing, passed away on July 23rd, 2023, after a long battle against breast cancer.

Here's a tribute from Carlos Mazure, Former Chairman & Executive Director of the SOI Industry Consortium.

Goodbye Adele

Adele was a humanist, very cultured and above all an unconditional of the semiconductor industry. Working with Adele was always enriching. I had the chance to interact with Adele very closely, first, through Soitec; later, through the SOI Industry Consortium. She was instrumental in building the communication for the SOI Industry Consortium. Despite her sickness, she remained highly engaged to her work and commitments. Always available, ready to travel to capture the essence of the events she was covering, curious about the culture of the visited countries which gave a different depth to her articles. Her interviews were unconventional mingling the big picture and the role of the interviewee's company. Adele was a fighter. This attitude transcended to her work, to her writing and to her network. She was not the person to give up. She understood the supply chain and the value which different companies brought to the ecosystem.

Highly appreciated by engineers and executives alike, the departure of Adele is a big loss for the semiconductor world.

Farewell Adele, we will miss you.

*Carlos Mazure,
Former Chairman & Executive Director of the SOI Industry Consortium, Former CTO of Soitec.*

FEATURED IN THIS EDITION

REVOLUTIONISING OPTICAL SYSTEMS: INL'S CUTTING-EDGE MICRO-MIRROR TECHNOLOGY

In collaboration with the University of Minho and Bosch, INL researchers have developed ground-breaking 1D and 2D micro-mirror technology using state-of-the-art MEMS **silicon-on-insulator (SOI)**-based bulk micromachining, paving the way for more efficient and cost-effective solutions.

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STMICROELECTRONICS DEVELOPED A LOW-POWER SENSOR WITH MICROMACHINED THERMAL TRANSISTORS

The STHS34PF80 sensor contains thermal MOSFETs (TMOS) that are sensitive to the heating effects of infrared radiation incident on their gates, as well as digital readout circuitry integrated efficiently on the same chip using **SOI CMOS** technology.

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CHARACTERIZATION OF RESIDUAL STRESS IN SOI WAFERS BY USING MEMS CANTILEVER BEAMS

The residual stress in **SOI** wafers has been a significant concern impacting the reliability of microsystem devices and the performance of MEMS devices. Here a high-precision, easy-to-implement, and cost-effective characterization method is proposed for measuring residual stress in SOI wafers.

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FIBER-TO-CHIP THREE-DIMENSIONAL SOI EDGE COUPLERS WITH HIGH EFFICIENCY AND TOLERANCE

Three-dimensional (3D) edge couplers with high efficiency and tolerance are proposed in this study. The 3D edge couplers were fabricated on a 5 µm thick top silicon device layer of SOI with a 1 µm thick SiO₂ buried layer and a 400 µm thick silicon handle layer.

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SOI ECOSYSTEM NEWS

INFINEON TO BUILD WORLD'S LARGEST 200MM SiC FAB IN KULIM

The investment will lead to an annual SiC revenue potential of about seven billion euros by the end of the decade. The planned expansion is backed by customer commitments covering about five billion euros of new design-wins in automotive and industrial applications as well as about one billion euros in pre-payments.

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GLOBALFOUNDRIES ACCELERATES ITS DEVELOPMENT IN CHINA

It is reported that in Chengdu Hi-tech West District, the GlobalFoundries plant has been completed with very high standard. GlobalFoundries now through the leadership's market research, to accelerate the construction of the FD-SOI production line and the pace of production.

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ONSEMI AND MAGNA TO INVEST IN SILICON CARBIDE MANUFACTURING FOR THE EV MARKET

The two companies announced a long-term supply agreement for Magna to integrate onsemi's EliteSiC silicon carbide intelligent power solutions into its eDrive systems. It is said that Magna will also contribute roughly \$40 million to the purchase of new SiC equipment at onsemi's facilities.

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REFINING GAN SUBSTRATE THINNING

Engineers at Osaka University are claiming to have broken new ground by thinning GaN substrates with a hydrogen-based plasma. The team's technique, which is capable of an etching rate of up to 4 µm/minute, provides a promising approach to thinning the substrate of vertical power devices.

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SEMI NEWS HIGHLIGHT

DRIVING SMART CITY, TRANSPORTATION AND COMMUNICATIONS INNOVATIONS THROUGH ELECTROMAGNETIC SIMULATION

System level electromagnetic (EM) simulation is becoming an increasingly important technology needed to support the design of next-generation smart cities and transportation as well as global communications systems. Bob Smith, executive director of the ESD Alliance, recently spoke with CEMWorks' President, Jonatan Aronsson, and Cielo Gerrie, Vice President of Business Development, about the challenges and opportunities that are driving the need for automating EM simulation.

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SEMI ANNOUNCES INTENT TO HOST SEMICON INDIA IN PARTNERSHIP WITH INDIA SEMICONDUCTOR MISSION

SEMI is in discussions with Electronic Industries Association of India (ELCINA) and Messe München India (MMI) as key partners to stage its flagship event. The collaboration would build on the successful execution of ISM's two editions of SemiconIndia and continue SEMI's tradition of bringing together stakeholders in the global end-to-end semiconductor ecosystem.

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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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