

# INTEGRATED PHOTONICS

## POWERING THE FUTURE OF DATA, TELECOM, QUANTUM AND BEYOND

Asia Photonics Expo (APE), Asia's premier platform for photonics innovation, will take place at the Sands Expo and Convention Centre in Singapore from 4 to 6 February 2026. A key highlight of the event is the dedicated **Integrated Photonics Pavilion**, focusing on core products and solutions such as **silicon photonic chips and photonic integrated circuits**. In collaboration with the Semiconductor Pavilion, it will construct a comprehensive "materials-design-manufacturing-packaging" industry chain, demonstrating how photonic chips empower the emerging application fields.

Integrated photonics stands as a national priority for Singapore, backed by substantial public investment and cross-agency collaboration. The LUX Photonics Consortium, launched by the National Research Foundation (NRF) in 2015, reflects this commitment with S\$75 million in research grants for photonics technologies. Meanwhile, A\*STAR's National Semiconductor Translation and Innovation Centre (NSTIC), supported by S\$180 million, drives R&D in flat optics and silicon photonics—cornerstones of integrated photonics. Highlighted by The Business Times as pivotal to Singapore's Smart Nation initiative, this technology enables high-speed, energy-efficient data transmission—critical for data centres, LiDAR, autonomous systems, healthcare, and quantum computing, etc.

### Part of Integrated Photonics Enterprises



### Integrated Photonics Supply Chain

**IC Design and Chip:** Chip Design, Communication Chip, Memory Chip, CPU Chip, Sensor Chip, Analogue Chip, Digital Chip, Power Management & Power Chip, RF Chip, Driver Chip

**Semiconductor Materials:** organic Germanium, III-V Semiconductors (e.g., GaAs, InP, InGaAs), Silicon Nitride ( $\text{Si}_3\text{N}_4$ ), Lithium Niobate ( $\text{LiNbO}_3$ ), II-VI Semiconductors (e.g., ZnSe, CdTe), 2D Materials (e.g., Graphene,  $\text{MoS}_2$ ), Perovskites, Wafers, Silicon Substrates, Target Materials, etc.

**Advanced Packaging:** Flip Chip Packaging, Bumping Packaging, Wafer Level Packaging, 2.5D/3D Advanced Packaging, Fan-out Wafer Level Packaging

**Test and Measurement Equipment:** Leak Detection Systems, Thickness/Flatness Measurement, Microscopes, Spectrometers, Substrate Metrology, Optical Test Systems, Package Test Systems, Linear Test Systems, Parametric Test Systems, Probing Equipment, etc.

**Processing and Manufacturing Equipment:** Dicing / Sawing / Scribing Equipment, Die Bonding Equipment, Pick-and-Place Machines, Dispensing Systems, Lithography Equipment, Marking / Labeling Equipment, Alignment Machines, Bumping Systems, Polishing Equipment, PVD / Sputtering Equipment, Epitaxy Equipment, Etching Equipment, Cleaning Machines, etc.

### Application Fields

- DATA CENTER & TELECOM
- MEDICAL
- SENSING
- QUANTUM



## CONCURRENT CONFERENCES

APE hosts a series of industry-focused, application-driven forums designed to empower the global photonics community for communication, exchange, and learning. Renowned keynote speakers from leading photonics companies, research institutes, and universities will explore forefront technology innovations, share valuable insights, and explore emerging trends throughout the photonics industry.

### Related Topics:

- Photonics@SG Conference
- Asia Semiconductor Conference
- Forum on Advanced Photonics and Flat Optics
- High-Performance Optoelectronic Integrated Chips Technology Forum
- Photonics Technology Empowering Semiconductor Manufacturing Forum
- Optical Semiconductor Inspection Technology Forum
- Nanoimprint Manufacturing Technology Forum
- Laser Technology Enabling Pan-Semiconductor Industry Manufacturing Forum



## CONCURRENT NETWORKING ACTIVITIES

### Gala Dinner

Over 140 global industry players—including association leaders, chamber representatives, academic experts, and corporate executives from Singapore, Malaysia, Thailand, Germany, the United States, Hong Kong, China, and beyond—gathered to exchange ideas, engage in discussions on industry achievements, and forge cross-border partnerships.



### Site Tour

The site tour offered an exclusive opportunity for over 60 professionals with exclusive access to Singapore's premier research hubs and photonics innovators, fostering deeper industry-academia collaboration and driving innovation. Spanning two days, attendees gained firsthand insights into groundbreaking technologies and research.



### Happy Hour

Over 100 exhibitors and VIP visitors have joined the event to share ideas, exchange contacts, and foster new connections in a relaxed atmosphere over drinks and light bites. This is the perfect setting to spark conversations that lead to meaningful collaborations and future opportunities.



### Exhibition Tour

At APE 2025, 48 international visiting groups participated in curated exhibition tours, including over 20 association-led delegations with tailored itineraries to address sector-specific challenges and unlock new opportunities.



APE 2025 HIGHLIGHTS



EXHIBIT AT APE 2026