

APPLICATION OF PHOTONICS TECHNOLOGY IN THE SEMICONDUCTOR INDUSTRY

Asia Photonics Expo (APE), a world's leading comprehensive photonics platform, will be held at the Sands Expo and Convention Centre in Singapore from 26 to 28 February 2025. It focuses on cutting-edge technologies and emerging markets in the fields of optical communication, optics, laser, infrared, sensing, and display, including **optoelectronic chips, sensors, semiconductor materials, and semiconductor manufacturing/packaging and testing equipment**. It serves as a one-stop platform for professionals in the semiconductor industry to seek upstream and downstream products, innovative technologies, engage in trade negotiations, and facilitate procurement.

Exhibit Profile

Optoelectronic Chips: VCSEL chips, sensor chips, high-speed modulator chips, pump laser chips, DFB and EML chips, etc.

Sensors: MEMS sensors, image sensors, vision sensors, infrared sensors, laser sensors, etc.

Semiconductor

Semiconductor Materials: Indium phosphide, gallium nitride, gallium arsenide, monocrystalline silicon, organic germanium, wafers, silicon substrates, target materials, mold materials, grinding materials, etc.

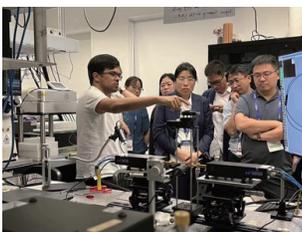
Semiconductor Equipment: Chip epitaxial equipment, chip dicing machines, pick-and-place machines, cleaning machines, scribing machines, semiconductor packaging and testing equipment, etc.

CONCURRENT ACTIVITIES



Gala Dinner

Over 120 top-level executives of our exhibitors and partners attended the gala dinner and took the opportunity to engage in high-level discussions, exchange ideas, and explore potential collaborations.



Site Tour

APE co-organized with Singapore University of Technology and Design and LUX Photonics Consortium to curate a site tour which attracted over 40 companies to join, aiming to link between academia and industry.



Happy Hours

It will be held at VIP lounge to facilitate the networking and collaboration between exhibitors and VIP visitors.

CONCURRENT CONFERENCES

Application Forum

A series of application programmes will be dedicated to showcasing the application fields within manufacturing, medical, consumer electronics, etc.

Industry Forum

Explore the cutting-edge optoelectronic technology and gain in-depth insights into its latest developments across various photonics application fields, thereby driving innovation in upstream and downstream products.



BOOTH APPLICATION

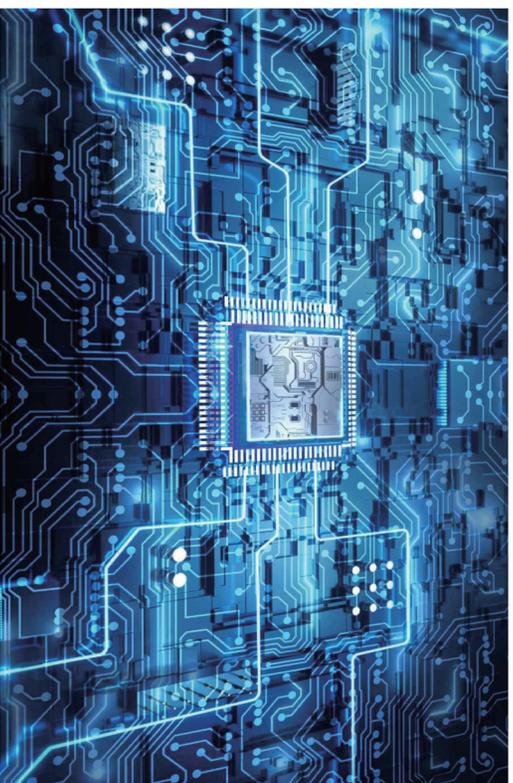


APE AT A GLANCE

*Only part of exhibits, listed in no order.

Semiconductor Material

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| <p>Silicon Wafer</p> <ul style="list-style-type: none"> -8-inch Back-illuminated Hybrid Bonding Wafer -VCSEL/InSb/s Epitaxial Wafer -Infrared Temperature Sensor Wafer | <p>Material</p> <ul style="list-style-type: none"> -Indium Phosphide / Gallium Nitride/Gallium Arsenide Epitaxial Layer -Aluminum Nitride Single Crystal Thin Film | <p>Ceramics</p> <ul style="list-style-type: none"> -CSP Ceramic Packaging Shell -HTCC (High-Temperature Co-fired Ceramic) -Laser Ceramic Reflector / Diffuser |
| <p>Polishing Slurry/ Pad</p> <ul style="list-style-type: none"> -SiC Polishing Slurry -Silicon Dioxide Polishing Slurry -Polyurethane Series Polishing Pad -Sapphire Polishing Pad | <p>Grinding Material</p> <ul style="list-style-type: none"> -Diamond Grinding Fluid -Grinding Pad -Fiber Optic Grinding Discs | <p>Photoresist</p> <ul style="list-style-type: none"> -Photoresist Verification -Heat-Assisted UV Imprint Photoresist -Full Range of Nanomprint Material |
| <p>Target / UV Anti-reflective Coating</p> <ul style="list-style-type: none"> -Sputtering Target -Metal Oxide Semiconductor Target -UV Debonding Film | <p>Substrate</p> <ul style="list-style-type: none"> -Silicon Carbide Thermal Management Substrate -Aluminum Oxide Ceramic Substrate -Silicon Nitride Ceramic Substrate | <p>Grinding Wheel / Solder Ball</p> <ul style="list-style-type: none"> -Thinning Grinding Wheel -Resin Grinding Wheel -Ceramic Diamond Grinding Wheel -Gold Solder Ball |



Optoelectronics

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| <p>Optoelectronic Chip</p> <ul style="list-style-type: none"> -APD Chip -800G Silicon Optical Chip -Detector Chip -High-Speed Optical Detector Chip -800G DR8 Transmitting Chip | <p>Electronic Chip</p> <ul style="list-style-type: none"> -LD Driver Chip -TIA Chip -DSP -OLT Chip | <p>Sensor Chip</p> <ul style="list-style-type: none"> -LiDAR VLR Chip -SiPM -High-Precision Multi-channel Signal Processing ASIC Chip -5D-Megapixel Intelligent Temperature Sensing Chip |
| <p>Optical Communication Component</p> <ul style="list-style-type: none"> -Active Optical Component -Passive Optical Component -Optical Module | <p>Optical Display Component</p> <ul style="list-style-type: none"> -LED -OLED -MiniLED -MicroLED | <p>Photodiector</p> <ul style="list-style-type: none"> -Avalanche Photodiode -Photomultiplier Tube -PIN Photodiode |

Manufacturing Equipment

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| <p>Lithography / Etching Equipment</p> <ul style="list-style-type: none"> -SiC Polishing Slurry -Silicon Dioxide Polishing Slurry -Polyurethane Series Polishing Pad -Sapphire Polishing Pad | <p>Annealing Furnace / Oxidation Furnace</p> <ul style="list-style-type: none"> -Vacuum Bridging Furnace -De-gas Furnace -Vacuum Reflow Furnace -Wet Oxidation Furnace | <p>Thin Film Deposition Equipment</p> <ul style="list-style-type: none"> -CVD Equipment -Nano Film Layer Deposition System -Linear Multi-chamber Thin Film Deposition System |
| <p>Polishing Machines / PVD Equipment</p> <ul style="list-style-type: none"> -CMP Polishing Machine -PVD Coating Equipment -Roll-to-Roll PVD Vacuum Coating Equipment | <p>Electroplating Equipment / CVD Equipment</p> <ul style="list-style-type: none"> -CVD Equipment -Plasma Enhanced CVD Equipment -Water Electroplating Equipment | <p>Cleaning Machine</p> <ul style="list-style-type: none"> -Water Cleaning Machine -Plasma Cleaner -Single Water Cleaner -Ultrasonic Cleaner |

Packaging & Testing Equipment

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| <p>Thinning / Lamination machine</p> <ul style="list-style-type: none"> -Fully Automatic Thinning Machine -Water Thinning Machine -Automatic Lamination Machine | <p>Coupling Machine</p> <ul style="list-style-type: none"> -Automatic Optical Path Coupling Machine -Waveguide Combiner System -Coupling Alignment System | <p>Bonding Machine</p> <ul style="list-style-type: none"> -High-Precision Chip Bonding Machine -Wire Bonding Machine -Multi-Function Bonding Machine |
| <p>Mounting Machine / Oven</p> <ul style="list-style-type: none"> -Micro-Precision Mounter -High-Precision Epoxy Mounter -UVLED Oven -Vacuum Pressure Oven | <p>Sorter</p> <ul style="list-style-type: none"> -Fully Automatic High-Precision Sorter -Chip Sorter -Water Laser Sorter | <p>Die Bonder</p> <ul style="list-style-type: none"> -High-Speed Die Bonder -COB Die Bonder -Semiconductor Dual-Head Die Bonder |
| <p>Dicing Machine</p> <ul style="list-style-type: none"> -LD/FP Chip Dicing Machine -Dual-Axis Precision Dicing Machine -8-inch Single-Axis Semi-Automatic Dicing Machine | <p>Cleaning / Welding / Cutting Equipment</p> <ul style="list-style-type: none"> -Laser Cleaning Machine -Solder Ball Welding Machine -Fully Automatic PCB Laser Marking Machine -Semiconductor Cutting Equipment | <p>3D Vision</p> <ul style="list-style-type: none"> -CMOS Image Sensor -3D TOF (Time-of-Flight) Vision Sensor -TOF Ranging Sensor -Infrared Sensor and Image Sensor |

Intelligent Sensor

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| <p>LiDAR</p> <ul style="list-style-type: none"> -Multi-line Mechanical LiDAR -Ultra-Wide Angle Blind Spot Laser Radar -Single-point Ranging LiDAR | <p>MEMS Sensor</p> <ul style="list-style-type: none"> -Material Sensor -Detection Sensor -Temperature Sensor | <p>Industrial Sensor</p> <ul style="list-style-type: none"> -Gas Leakage Detection Sensor -Infrared Carbon Dioxide Sensor -Capacitive Angle Sensor |
| <p>Other Sensors</p> <ul style="list-style-type: none"> -Projector Module -Micro Electrostatic Sensor -Fiber Optic Gyroscope Sensor | <p>Optical Inspection Equipment</p> <ul style="list-style-type: none"> -Mask AOI Equipment -AOI Intelligent Appearance Inspection Equipment -Semiconductor Wafer AOI | <p>3D Imaging Microscope</p> <ul style="list-style-type: none"> -3D Imaging Microscope -Stereo Microscope -Ultra-Deep Focus Video Microscope |

Measuring & Test Instrument

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| <p>Testing / Measurement Instrument</p> <ul style="list-style-type: none"> -Temperature Cycling Test Chamber (Hot and Cold Shock Testes) -Semiconductor Laser COS Testing Equipment | <p>Interferometer</p> <ul style="list-style-type: none"> -Multi-wavelength Laser Interferometer -Vertical Laser Interferometer -Non-contact Laser Interferometer | <p>Profiler</p> <ul style="list-style-type: none"> -3D Optical Profiler -Line Laser Profiler -Probe Based Surface Profiler |
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| <p>Probe Station</p> <ul style="list-style-type: none"> -VCSEL Water Probe Station -Silicon Photonics Probe Station -Probe Testing Equipment | <p>Measuring Instrument</p> <ul style="list-style-type: none"> -Water Warp and Stress Measuring Instrument -High-Precision Vision Measuring Instrument -3D Topography Measuring Instrument | <p>Spectrometer</p> <ul style="list-style-type: none"> -Cooling Spectrometer -Near-Infrared Spectrometer -Picometer Spectrometer |
| <p>Infrared Thermal Imaging</p> <ul style="list-style-type: none"> -Infrared Thermal Imager -Infrared Detection Instrument -ASIC-Based thermal imaging core solution | <p>Microscope</p> <ul style="list-style-type: none"> -3D Imaging Microscope -Stereo Microscope -Ultra-Deep Focus Video Microscope | <p>Optical Inspection Equipment</p> <ul style="list-style-type: none"> -Mask AOI Equipment -AOI Intelligent Appearance Inspection Equipment -Semiconductor Wafer AOI |

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| <p>QR Code</p> <p>Scan to download APE 2024 POST SHOW REPORT</p> |
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