

APPLICATION OF PHOTONICS TECHNOLOGY IN THE ROBOTICS 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 **core materials, core components and production & manufacturing**. It serves as a one-stop platform for professionals in the robotics industry to seek upstream and downstream products, innovative technologies, engage in trade negotiations, and facilitate procurement.

Exhibit Profile

Core Materials: Optical Materials, Laser Materials, Lidar Core Components, Display Materials, etc.

Core Components: Industrial Sensors, 3D Vision Systems, Lidar, Industrial Cameras, MEMS Sensors, Lasers, Guide Rails, etc.

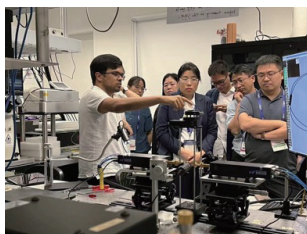
Production and Manufacturing: Robot Bodies, Automation Equipment, Laser Equipment, Semiconductor Equipment, etc.

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.

Key Material

Optical Material

- Hydrophilic Film
- Optical Glass Strip
- Optical Coating Material
- Optical Window
- Hemispheric, Hyper Hemispheric Dome
- Spherical Lens
- Cylindrical Lens
- Ultra-precision Optical Component

Laser Material

- Laser Wafer
- Fiber Crystal
- Fast Axis Collimating Lens
- Collimator / Focus lens
- Fresnel Lens
- Fiber Lens
- Bessel Beam Diffraction Axis Conical Mirror
- Beam Expander
- Laser Galvanometer Mirror
- Laser Protective Lens
- Integrated TOF LiDAR Receiver Chip
- LiDAR EEL Chip
- Semiconductor Laser Chip
- Semiconductor Laser Diode
- High Uniformity Beam Sampling Grating
- Broadband Gold-plated Grating

LiDAR Core Component

- Array SPAD Sensor
- Area Array SPAD Detector
- Multi-Junction VCSEL Array
- LiDAR Scanning Module
- FMCW LiDAR Dedicated MEMS Mirror

Display Material

- Organic Luminescent Material
- Microcrystalline Glass
- Anti-Reflection and High-Transmission Coating
- OLED Light-focusing High-refractive Layer
- ITO Target Material
- Metal Oxide Semiconductor Target Material

Core Component

Industrial Sensor

- Vibration Sensor
- Pressure Sensor
- Force Sensor
- LVDT Displacement Sensor
- 6D Force Torque Sensor
- Fiber Optic Acceleration Sensor
- CMOS Image Sensor
- CMOS Industrial Sensor
- Fiber Bragg Grating Sensor

3D Vision

- 3D Structural Light Vision Module
- 3D Binocular Stereo Vision Module
- 3D Vision AI Chip
- IoT Solution
- CMOS Image Sensor
- Vision Sensor
- TOF Ranging Sensor

LiDAR

- Multi-Line Mechanical LiDAR
- ToF LiDAR
- Single Point Ranging LiDAR
- DToF LiDAR
- Industrial Grade LiDAR
- Solid State LiDAR
- Single-wire High-speed LiDAR
- LiDAR Light Source - EEL & VCSEL
- Ultra-wide Angle Blind Spot LiDAR

Industrial Camera

- Industrial Camera
- Ultra-high-speed Industrial Camera
- 4K Industrial Camera
- Infrared Camera
- High-speed Camera
- Industrial Grade RGB-D ToF Camera

MEMS Sensor

- 3D-dToF Sensor
- Single-photon 1D-dToF Sensor
- Two-Dimensional Electromagnetic Actuated MEMS
- MEMS Mirror
- MEMS Galvanometer

Motor

- XY Micro-Linear Motor Platform
- Stepper Motor
- Miniature DC Hollow Cup Motor
- Sealed Spindle Rotary Table Motor Servo
- Indexing disk motor servo
- Small Size Alignment Motor Servo

LiNp Linear Motor

- LiNp Linear Motor
- DD Motor
- Hollow Cup Motor
- SMC Micro Servo Driver
- Servo Driver
- Optoelectronic Encoder

Display Screen

- Silicon-based OLED Micro Display
- Micro-LED Miniature Micro Display
- Seamless U-shaped (Wedge-shaped) Folding Screen
- Flexible Micro-LED Display

Reducer/Controller

- Hollow Cup Planetary Reducer
- Low-Temperature Reducer Motor
- DC Reducer Motor
- DC Brushless Motor
- DC Brushed Hollow Cup Motor
- Piezo Controller/Amplifier/Driver
- Crystal Oscillation Type Deposition Controller

Laser

- Optical Fiber Laser
- Solid-state Laser
- Semiconductor Laser
- High-power RF Laser
- Solid-State UV Laser
- Super Luminescent Light Emitting Diode
- Spatially Coupled Fiber Laser
- High-energy Picosecond Infrared Laser
- All-solid-state High-energy Picosecond Laser
- Beam Adjustable Continuous Fiber Laser
- High-power Quasi-continuous Fiber Laser
- High Reliability Femtosecond Fiber Laser

Guide Rail

- Linear Guide Rail
- XYZ Axis Linear Ball Guide Rail
- VR Series Cross Roller Guide Rail
- TGHK Circular Guide Rail
- TGHK Vertical Circular Guide Rail
- Precision Arc Cross Roller Guide Rail
- Anti-creep Cross Roller Guide Rail
- Cross Roller Guide Rail

Light Source

- Full Spectrum Light Source
- Transmissive Light Source
- Semiconductor Light Source
- Laser Light Source
- Industrial Vision Light Source
- Multifunctional High-speed Picosecond Pulse Light Source
- DNP Light Source
- Detector Light Source
- White Laser Series Light Source

Production & Manufacturing

Robot

- SMR Mobile Composite Robot
- Non-invasive Physical Examination Robot
- Single Axis Robot
- Industrial Robot
- Robot Grinding and Polishing Machine
- XR Evaluation of Bionic Robot
- Six-degree-of-freedom Parallel Robot
- Robot Vacuum
- Screw Robot
- MID Composite Robot

Automation Equipment

- Flexible Gripper
- High-load Gripper
- Pneumatic Gripper
- High Vacuum Ball Valve
- XYZ TR Manual Slide Table
- UUV Alignment Platform
- XY Micro-linear Motor Platform
- Precision Electric Linear Displacement Slide Table
- Axis Precision Electric Displacement Stage
- Fully Automatic Chip Four-sided Appearance Inspection Equipment
- Automated Standard Edition Sorter

Laser Equipment

- Handheld Laser Marker
- 3D Laser Marker
- Solder Ball Welding Machine
- Laser Solder Welding Machine
- Laser Cutting Machine
- Line Laser Profiler
- Laser Etching Equipment

Semiconductor Equipment

- Three-wavelength Spatial Optical Coupling Module
- Automatic Optical Path Coupling Machine
- Coupling Alignment System
- Chip Coupling System
- Butterfly Laser Automatic Coupling System
- Micron Die Bonder

Service Robot

Humanoid Robot

Industrial Robot

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APE 2024 POST SHOW REPORT