

# APPLICATION OF PHOTONICS TECHNOLOGY IN THE INTELLIGENT DRIVING 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 **automotive perception, smart cockpit, vehicle optical communication and manufacturing/processing equipment**. It serves as a one-stop platform for professionals in the intelligent driving industry to seek upstream and downstream products, innovative technologies, engage in trade negotiations, and facilitate procurement.

## Exhibit Profile

**Automotive Perception:** Lidar, In-Vehicle Infrared Night Vision, In-Vehicle Cameras, etc.

**Smart Cockpit:** Display Screens, HUD, Optical Components/Materials, 3D TOF Cameras, MEMS Sensors, etc.

**Vehicle Optical Communication:** Optical Fibers, Optical Modules, VCSEL, etc.

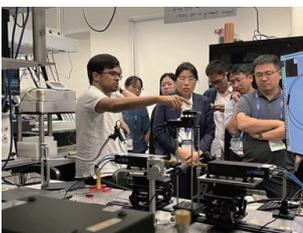
**Production and Manufacturing:** Laser Equipment/Lasers, Robots, Automation/Semiconductor Equipment, Inspection & Testing Measurement Systems, Vacuum Coating Equipment, Lens Assembly Equipment, etc.

## 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.

## Vehicle Perception

### Automotive Camera and Module

- Lens and Module**
- Vehicle Lens Module
  - Front-Mounted Vehicle Lens
  - Smart Headlight Projection Lens
  - Camera Module

- Automotive Optical Solution
- Ground Projection Miniature Lamp Module
- Automotive-Grade Lens Module

- CMOS**
- CMOS Image Sensor
  - CMOS Image Sensor Chip
  - Global Shutter CMOS Module
  - CMOS Image Sensor and Module

- Optical Lens**
- Colored Optical Glass Lens
  - Glass Aspheric Optical Lens
  - Water-level Glass Lens
  - Spherical Glass Lens

- Filter**
- LiDAR Filter
  - Optical Filter
  - Optical Coating Filter
  - Camera Filter
  - Colored Filter

- Core Component**
- VCSEL
  - Linear Array SPAD Detector
  - Active Meta-surface Optical Control Chip
  - LiDAR Light Source
  - Optical Scanning Rotating Mirror Module

- LiDAR**
- Automotive-Grade LiDAR
  - Solid-State Vehicle LiDAR
  - Hybrid Solid-State LiDAR
  - Unmanned LiDAR Sensor
  - Image-level Optical Fiber LiDAR
  - Optical Scanning Rotating Mirror Module

- Infrared Night Vision**
- Crystal-Level Infrared Lens
  - Short-Wave Infrared Lens
  - Continuous Zoom Infrared Lens

- Infrared Night Vision Device**
- Automotive Infrared Thermal Imaging Night Vision Device
  - Automotive Infrared Night Vision System
  - High-End Industrial Thermal Imaging Camera
  - Infrared Thermal Imaging Meta surface Lens System

### Robot

- Industrial Robot
- Intelligent Robot
- Polishing System
- Mobile Composite Robot

- Parallel Six-Degree-of-Freedom Robot
- Suction Screw Locking Robot
- Robot Grinding and Polishing Integrated Machine

### Automation/Semiconductor Equipment

- Fully Automatic High Precision Extractic Machine
- Semiconductor Cutting Equipment
- Fully Automatic Multi-Function Solder Paste Printing
- Automatic Glue Dispensing and Solder Paste Printing Machine

- Online Temperature Monitoring Semiconductor Heating System
- Grinding Machine
- Glue Dispenser
- Soldering Equipment

### Inspection, Testing, and Measurement System

- ADAS Camera Testing Solution
- Vehicle Module Assembly and Testing Production Line Equipment
- LiDAR Assembly and Testing Line
- Compact High Precision Optical Transfer Function Measurement Instrument

- 3D Optical Profiler
- Industrial Microscope
- Freeform Surface Measurement System
- 3D Optical Surface Shape Measurement System

## Smart Cockpit

### Display Screen

- Material and Module**
- Mini LED Vehicle Backlight Source
  - Driving Panel
  - Organic Electro-luminescent Device
  - Metal Oxide Semiconductor Target

- Display Panel**
- Mini LED Vehicle Display
  - OLED Miniature Display
  - AMOLED Vehicle Human-Machine Interaction
  - Flexible Micro-LED Display

### HUD

- AR-HUD**
- AR HUD Large Size Optical Waveguide
  - Extended FOV-ARHUD
  - Holographic Waveguide AR-HUD

- AR Optical Module**
- Optical Solution Module
  - AR Diffractive Optical Waveguide
  - Holographic Waveguide Module
  - AR Optical Solution

### Optical Component/Material

- Mini Display Optical Device
- Diffractive Optical Element
- Vehicle HUD Optical Component
- HUD Optical Component
- Optical Lens

### 3D ToF Camera

- 3D ToF Sensor
- 3D-dToF Sensor
- Array dToF Sensor
- ToF Ranging Sensor
- 3D ToF Imaging Array Product

- ToF Sensor Chip
- dToF Sensor
- ToF Lens
- Single Point Ranging Sensor Module

### Light Source

- Vehicle Backlight Source
- Multi-Channel High-Brightness LED Light Source
- Small Angle Emitting LED Light Source
- Transilluminator

- L-Type Multi-Spectral Light Source Device
- DNP Light Source
- OTP Burn-in Light Source
- UV Laser Light Source

### MEMS Sensor

- Pressure Sensor
- Vibration Sensor
- Material Sensor
- Detection Sensor
- Temperature Sensor
- Gas Leak Detection Sensor
- Infrared Carbon Dioxide Sensor
- Capacitive Angle Sensor

### Optical Fiber

- Multimode Fiber
- Fiber Optic Array
- Plastic Optical Fiber
- High Temperature Fiber

- Quartz Fiber Optics Solution
- Special Fiber Optics and Product
- Special Fiber Array

### VCSEL

- 2.5G/10G DFB Laser
- 25Gbps Direct Modulated DFB Laser
- VCSEL Epitaxial Wafer
- VCSEL Optical Chip

### Optical Module

- Optical Module

## Production & Manufacturing

### Laser Equipment and Laser

- Laser Cutting Equipment
- Laser Solder Ball Jet Solder Machine
- Dual-Station Laser Solder Welding Machine
- Intelligent Laser Welding System

- All-Solid-State High-Power Femtosecond Laser
- Semiconductor Laser
- Infrared Picosecond Fixed Lasers
- Automotive Industry Detection Linear Laser



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