汎銓科技　AI晶片分析平台

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Msscorps (6830) 2026 Operational Outlook

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- MSS's actual results or developments may differ materially from those indicated by these forward-looking statements as a result of various factors and uncertainties, including but not limited to market demand, change in legal, financial and regulatory frameworks, government policies, financial market conditions, and other risks and factors beyond our control.
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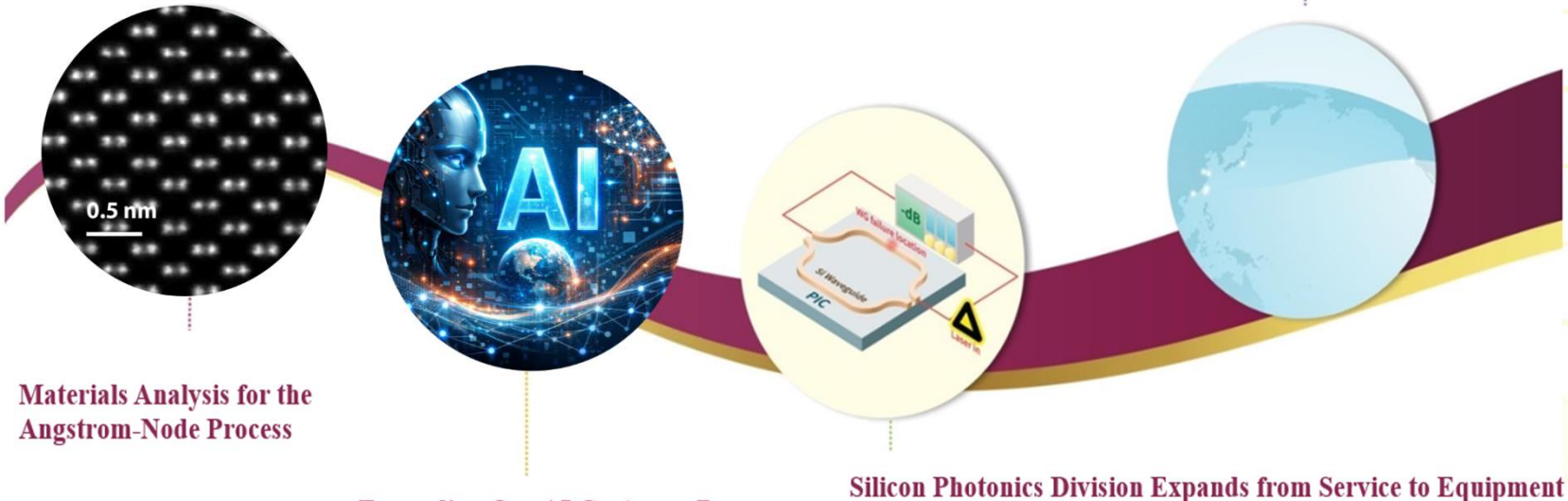
2026 Operational Outlook: The Harvest Year

Completed Global Footprint: Taiwan, China, U.S., and Japan — Accelerated Synchronized Growth in 2026



Materials Analysis for the Angstrom-Node Process

Expanding Our AI Customer Base

Silicon Photonics Division Expands from Service to Equipment Sales

In addition to the three silicon photonics analysis systems already developed and assembled in-house, Photon Engineering has secured patents in Taiwan, the United States, Japan, and Korea. In response to customer demand, the company plans to further launch silicon photonics testing equipment in 2026 for use in production-end process development (PD) and quality assurance (QA), thereby extending its business from analytical services to **equipment sales and licensing, and expanding into a new operating model.**

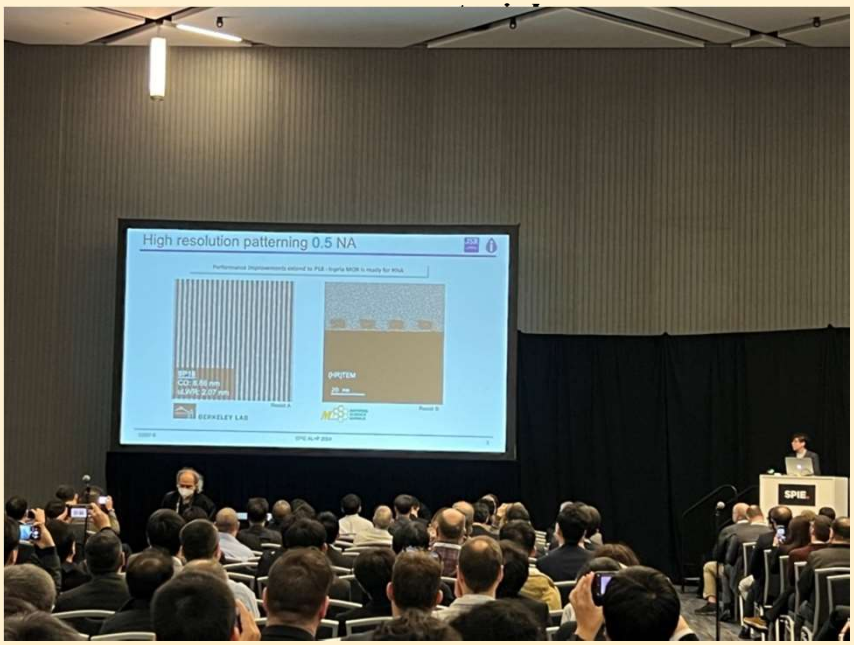
Deepening Technology Capabilities in the Angstrom Era

As advanced semiconductor manufacturing enters the Angstrom-node era, MSSCORPS continues to strengthen and specialize in next-generation analytical technologies, including MOR materials analysis and APT. The Company has completed the establishment of the SAC-TEM Center, which has recently passed customer audits and is set to commence operations, contributing to revenue growth.

MOR – Ultra-Sensitive Materials Analysis

Entering High-NA EUV Next-Generation Materials Analysis

Establishing a strategic entry point into advanced



Atomic-Scale Analysis Technology: APT

Providing atomic-scale compositional and defect analysis capabilities

Pushing the frontier of analytical technology

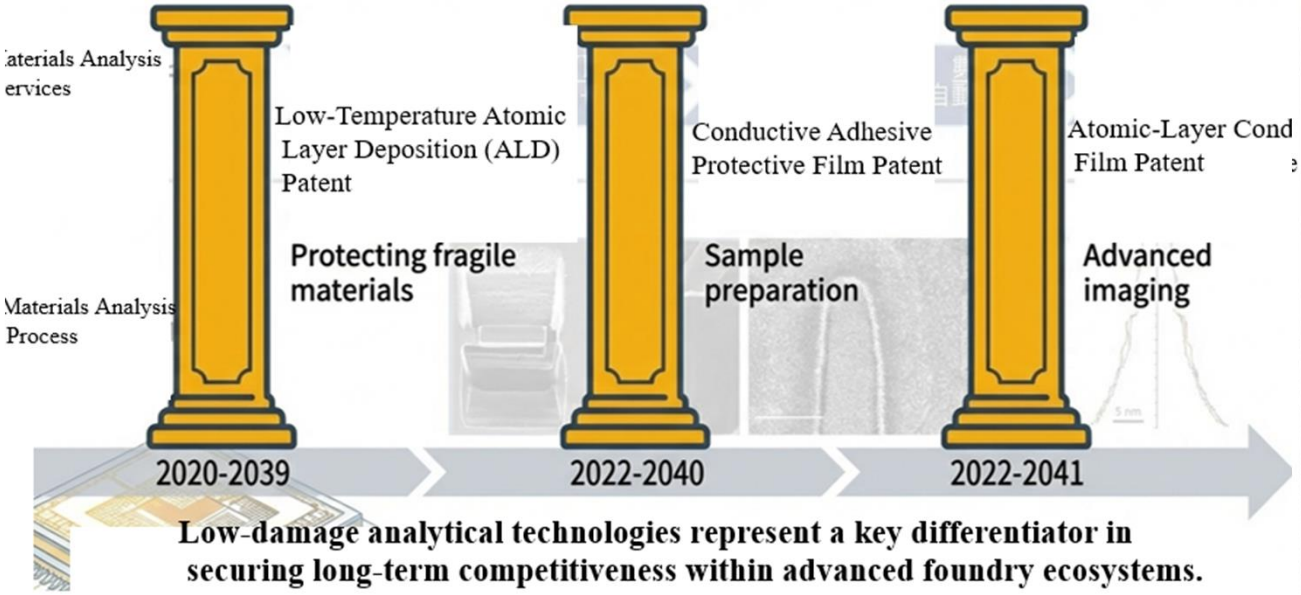
CS-TEM Facility Deployment and Equipment Installation

State-of-the-Art TEM Infrastructure

Enhancing comprehensive materials analysis capabilities
Supporting advanced process R&D and volume production demands

The SAC facility is built to world-class materials analysis standards, featuring a fully controlled environment and precision instrument installation space. The facility design meets stringent semiconductor industry requirements for vibration isolation and electromagnetic shielding.

Strengthening Our Proprietary IP Portfolio
Building High Barriers to Entry Through Technology Leadership



Low-damage analytical technologies represent a key differentiator in securing long-term competitiveness within advanced foundry ecosystems.

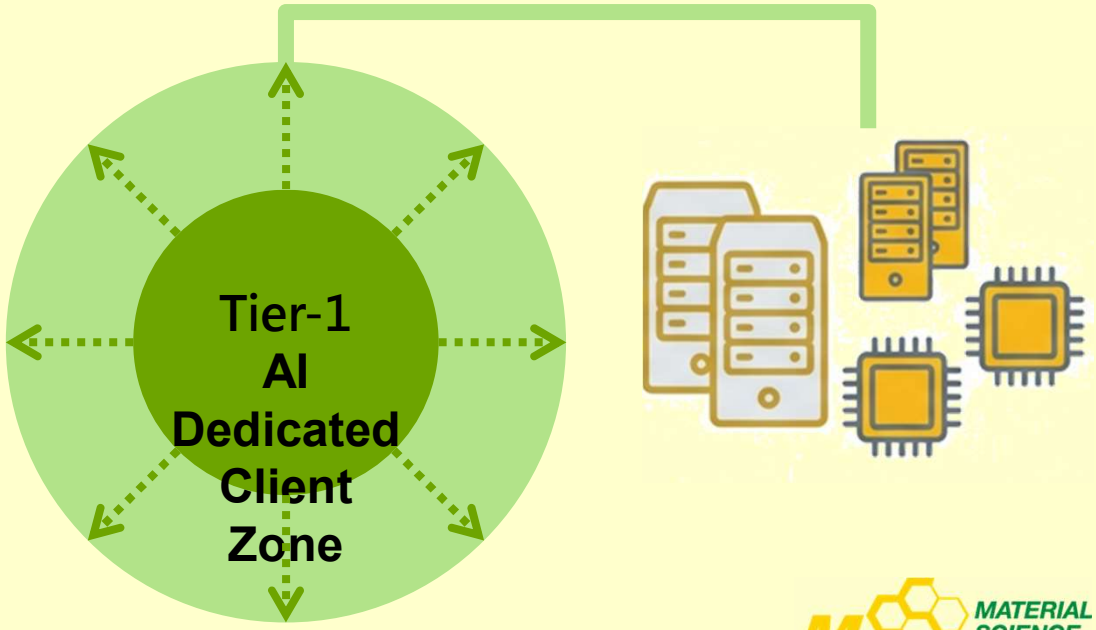
2026 and Beyond – Four Strategic Growth Engines

Scaling the Zhubei AI Client Hub to Support Tier-1 AI Industry Leaders

Expansion of the Tial-1 AI Client Zone

Tier-1 AI customers have partnered with MSSCORPS to establish a dedicated **AI Client Zone**, with continued expansion underway.
Amid explosive growth in AI chip demand, requirements for advanced packaging and heterogeneous integration analysis have increased significantly. MSSCORPS has become a key strategic partner to leading U.S. AI semiconductor manufacturers.

- **Exclusive AI Zone:** Premium security protocols and priority production support
- **Sustained Tier-1 Growth Momentum:** Continued expansion of demand from leading AI players
- **Strategic Co-Development:** Early involvement in advanced AI chip and silicon photonics innovation



MSS HG (Helmet Gecko)

Live status of in-house equipment at MSS

Sales Version (Mechanical Schematic Diagram)

Standard functions:

1. Automatic Laser Coupling Platform
2. IL / RL
3. Optical Loss & Leakage Localization
4. Swept Laser Measurement
5. Optical Intensity Variation Measurement (50 mW / 17 dBm)

Optional Features:

1. Optical Frequency Domain Reflectometry (OFDR)
2. High-Power Measurement (1000 mW)
3. High-Power Automatic Polarizer
4. Optical Polarization Measurement (PDL)
5. Switch Multi-Channel Measurement
6. OVNA Measurement (70 / 110 / 170 GHz)
7. Eye Diagram Measurement (70 / 110 / 170 GHz)
8. BERT Module (64 / 120 GBd)

『MSS HG』 Customer Categories & Analysis Needs

Customer categories	Client commissioned projects	MSS HG device configuration
FAB (PIC wafer fabrication)	Support R&D characterization / Spice Model calibration / FA Lab Debug	Prober stage, optical loss detection device, standard Tester configuration, optional Tester configuration...
PIC chip design company (IC design)	PIC component parameter confirmation Product Data Sheet / Debug	Prober stage, optical loss detection device, standard Tester configuration, optional Tester configuration...
CPO Packaging Plant	Optical path debugging,...	Prober stage, optical loss detection device, standard Tester configuration, optional Tester configuration...
Optical module manufacturer / system manufacturer	CPO module Debug, ...	Prober stage, optical loss detection device, standard Tester configuration, optional Tester configuration...

Tester Standard function：
1. Automated Laser Coupling Platform
2. Optical Loss Measurement (IL / RL)
3. Optical Loss and Leakage Location
4. Frequency Sweep Laser Measurement
5. Optical Intensity Variation Measurement (50 mW / 17 dBm)

Tester Optional Features:
1. Optical Frequency Domain Reflectometry (OFDR)
2. High Power Measurement (1000 mW)
3. High Power Automatic Polarizer
4. Optical Polarization Measurement (PDL)
5. Switch Multichannel Measurement
6. OVNA Measurement (70 / 110 / 170 GHz)
7. Eye Diagram Measurement (50 / 70 / 110 GHz)
8. BERT Module (64 G / 128 GBd)

MSS Silicon Photonics Strategic Positioning：

From RD debug to mass-production inspection, MSS is building a global patented platform for optical-loss localization.

★ MSS focuses on RD and FA debug.

★ For mass-production optical-loss and light-leakage localization, MSS will work with international equipment vendors through patent licensing to enable production-line testing.

- MSS does not compete with production-line equipment vendors; instead, MSS positions itself as their strategic partner.
- MSS’ s goal is to build a patent platform.
- MSS HG is responsible for the RD and FA markets.

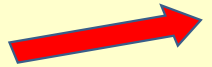
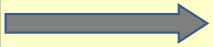
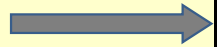
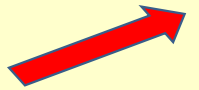
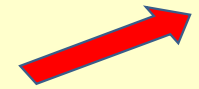
- The mass-production market will be scaled up through a licensing model.
- Looking ahead, MSS’ s revenue streams in the silicon photonics value chain will include analytical services, debug equipment sales, patent licensing, and revenue sharing from production-line equipment sales.

MSS 全球佈局運營 Worldwide Operation

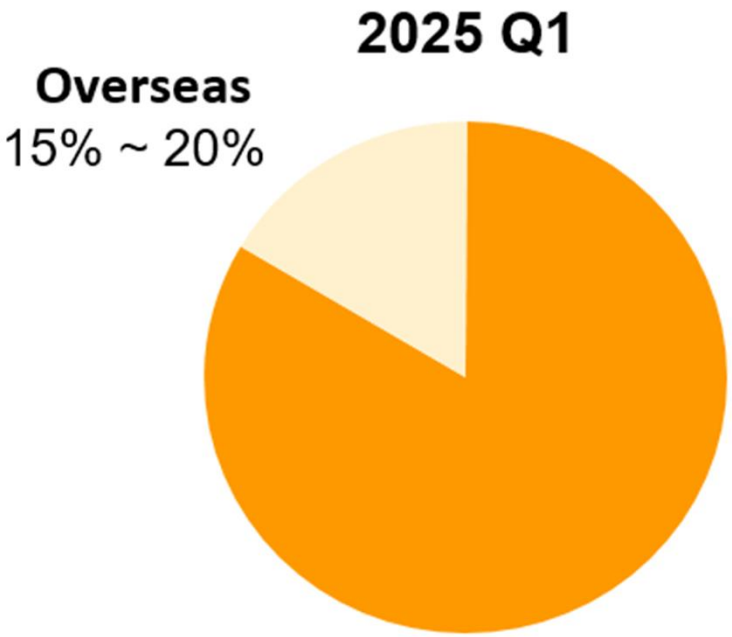
Semiconductor equipment/materials research and development

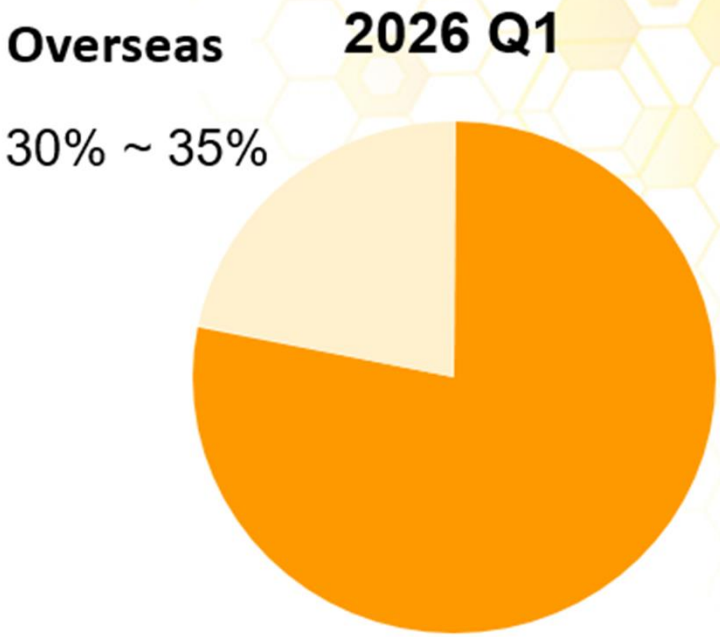
Global Collaboration Strategy Across the Semiconductor Development Cycle	U.S. Equipment Vendors	Japan Equipment Vendors
Equipment Vendor R&D Engagement • Global equipment leaders develop next-generation etch platforms within dedicated R&D centers • Define critical tool parameters and performance benchmarks • Optimize process windows and validate material compatibility	United States – Silicon Valley	Greater Tokyo Area, Japan(Tokyo, Yokohama, Kawasaki, Tsukuba, etc.)
Customer-Side Demonstration & Process Optimization •Localized prototype deployment near key customers •Hands-on operation by customer R&D teams •Joint optimization of process parameters and material integration •Data-driven benchmarking (throughput, yield, CD uniformity, roughness) to define final tool settings and production-ready recipes	**Hsinchu** *(R&D FAB)*	**Hsinchu** *(R&D FAB)*
Technology Transfer to Volume Production FAB •Align production FAB quality with R&D reference standards •Standardize materials and validated process recipes •Perform tool-by-tool PRS qualification prior to release •Confirm parity across critical KPIs (CD control, profile integrity, defect density, throughput) before production ramp	**Hsinchu / Tainan / Taichung** *(Volume Production FAB)*	**Hsinchu / Tainan / Taichung** *(Volume Production FAB)*

Classification and growth potential of MSS analysis techniques

Category	item	Technology	MSS niche	2025 1-5 Revenue proportion	2026 1-5 Revenue proportion	Expected growth in 2025-2026
Advanced processes (Angstrom era)	MA	PR protection technology	3rd generation EUV PR protection technology	52.7% 86.25 million	43.7% 86.93 million	
	MA		Advanced EUV PR protection technology			
	MA		Selective deposition sample preparation technology			
	MA	low-k protection technology	BEOL: low-k structure protection technology			
	MA		BEOL: low-k damage analysis technology			
	MA		Novel 2D materials analysis method			
	MA	Ultra-thin sample method	Ultra-thin sample protection method			
	MA		FEOL: GAA etch byproduct bonding state analysis			
	MA		MEOL: ALE etch byproduct comparison platform			
	MA		High aspect ratio structural TEM analysis technology			
	MA	Auto-measurement	Artificial intelligence for automatic measurement			
Mature processes	MA	ML ball height/ML defect	Optical component analysis technology: ML ball height/ML defect	9.6% 15.56 million	7.3% 14.63 million	
	MA		Wearable device AR/VR product lens integration analysis			
	MA	Compound Semiconductor	Epitaxial defect quantitative analysis technology			
	MA		Carrier concentration distribution analysis in compound semiconductors			
	MA		Integrated stress analysis technology			
	MA	OLED	Ultra-low contrast imaging technology for layer structures			
	MA	CCL/FCCL	Soft material slicing technology			
	MA		General materials analysis (SEM/FIB CS/Reversed MA/SIMS)			
IC failure analysis	FA	Compound Semiconductor	High voltage and high temperature test (1000V, 300C)	10.1% 16.54 million	8.0% 15.97 million	
	FA		Ultrathin sample preparation technology for EFA			
	FA	Circuit edit technology	Signal lead technology			
	FA		Backside signal lead technology			
	FA		Adding external multiple passive components technology			
	FA		Precise local RDL removal technology			
	FA		Filpchip front side FIB technology			
	FA		General failure analysis (decap/delayer/electrical property/CRD/IC Reverse/SAT/3D Xray)			
Silicon photonics	MA	Silicon photonics structure	Large-area rapid cutting method for silicon photonics/Conductive preparation method for silicon photonics/Low-curtain effect cutting method for silicon photonics	7.3% 12.01 million	8.0% 15.98 million	
	FA	Silicon photonics photoelectricity test	Light characteristics and attenuation detection for silicon photonics			
	FA		Optical path abnormality positioning, circuit break, light leakage detection for silicon photonics			
	FA		12-inch silicon photonic photometric platform with fully automatic light scanning			
	MA	Advanced package	PFIB/hybrid metal bond/TSV分析技術			
	FA	FA for advanced process chips	3nm製程去層次技術/um to nm positioning, direct nano probe measurements on devices			
	FA	Advanced package	Large IC packaging and carrier board separation technology/THZ-TDR open /Thermal xyz fault isolation/3D Xray			
Abroad	MA	Special ALD coating/ultra-thin sample technology	Advanced photoresist protection, low-k structure protection, and high depth-width TEM technologies.	20.2% 33.07 million	32.9% 65.59 million	
SiPh Testing Equipment HG Sales	Equipment sales	"Optical-Loss Detection Device" Technology	MSS has already assembled three in-house systems that are stably serving multiple customers for silicon photonics RD analysis. The company plans to expand its service model and provide patented-technology–based mass-production testing equipment to customers.			

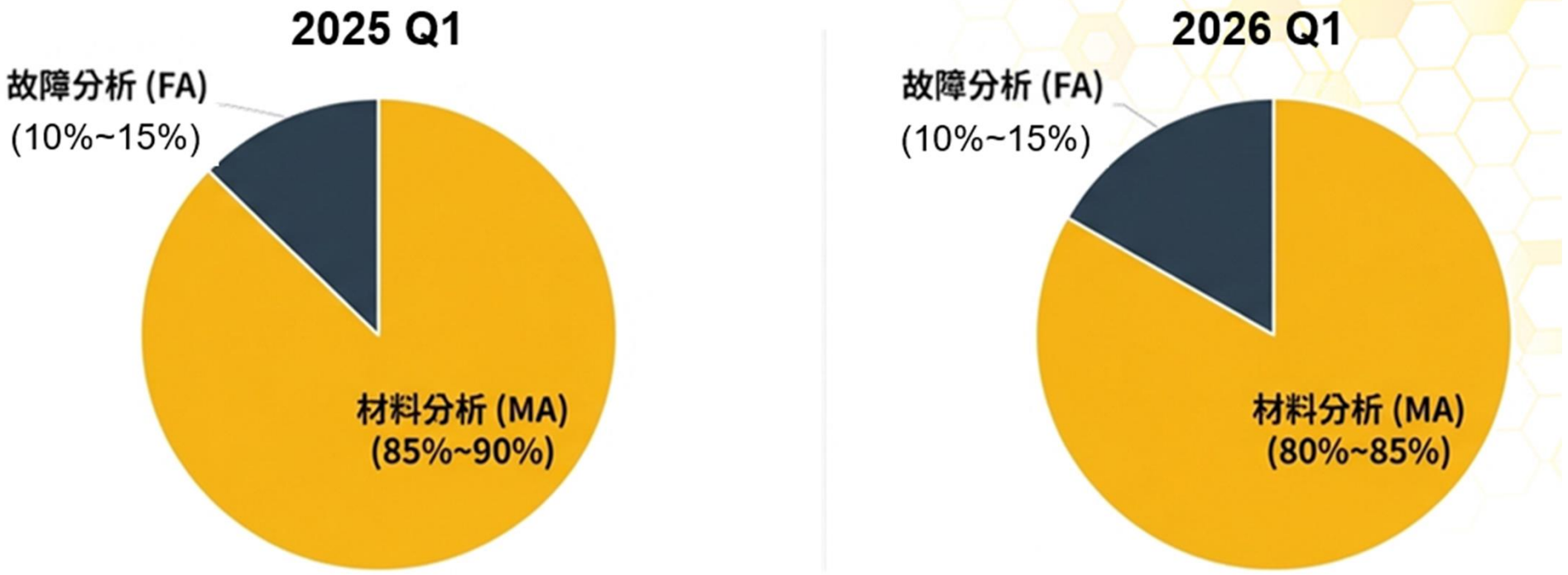
Key Institutional Investor Focus: Changes in Market Landscape





- Changing global market dynamics are opening new growth avenues and influencing our strategic positioning.
- Revenue exposure to Mainland China continues to rise, driven by accelerated semiconductor development and increasing demand for advanced materials characterization services

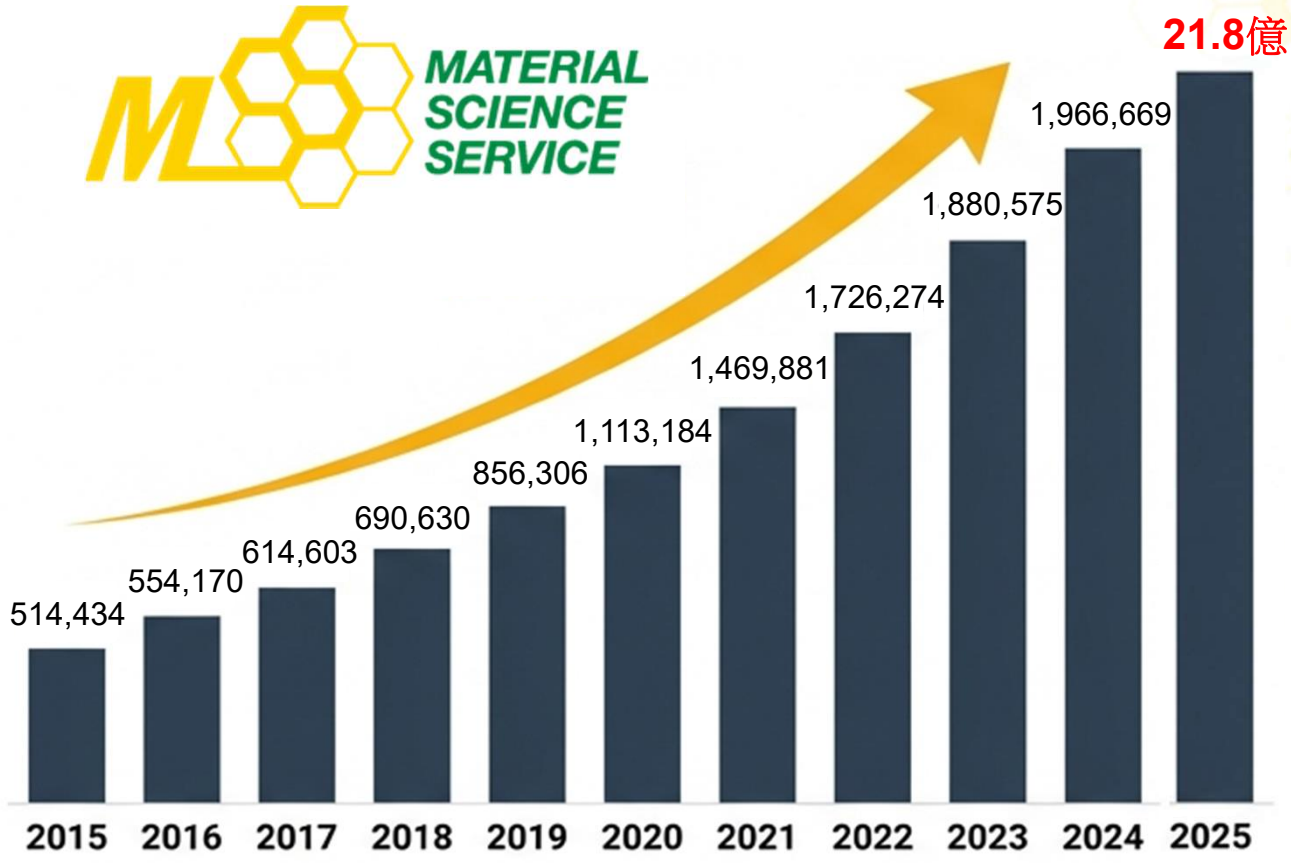
Key Institutional Investor Focus: Changes in Market Mix



高技術門檻的 MA 服務佔比穩居 80% 以上，確保整體毛利率結構優於同業。

Sustained >80% Mix of High-Barrier MA Services
Ensuring a Structurally Superior Gross Margin Profile

Strategic Inflection Point: From Steady Profit to Structural Explosion

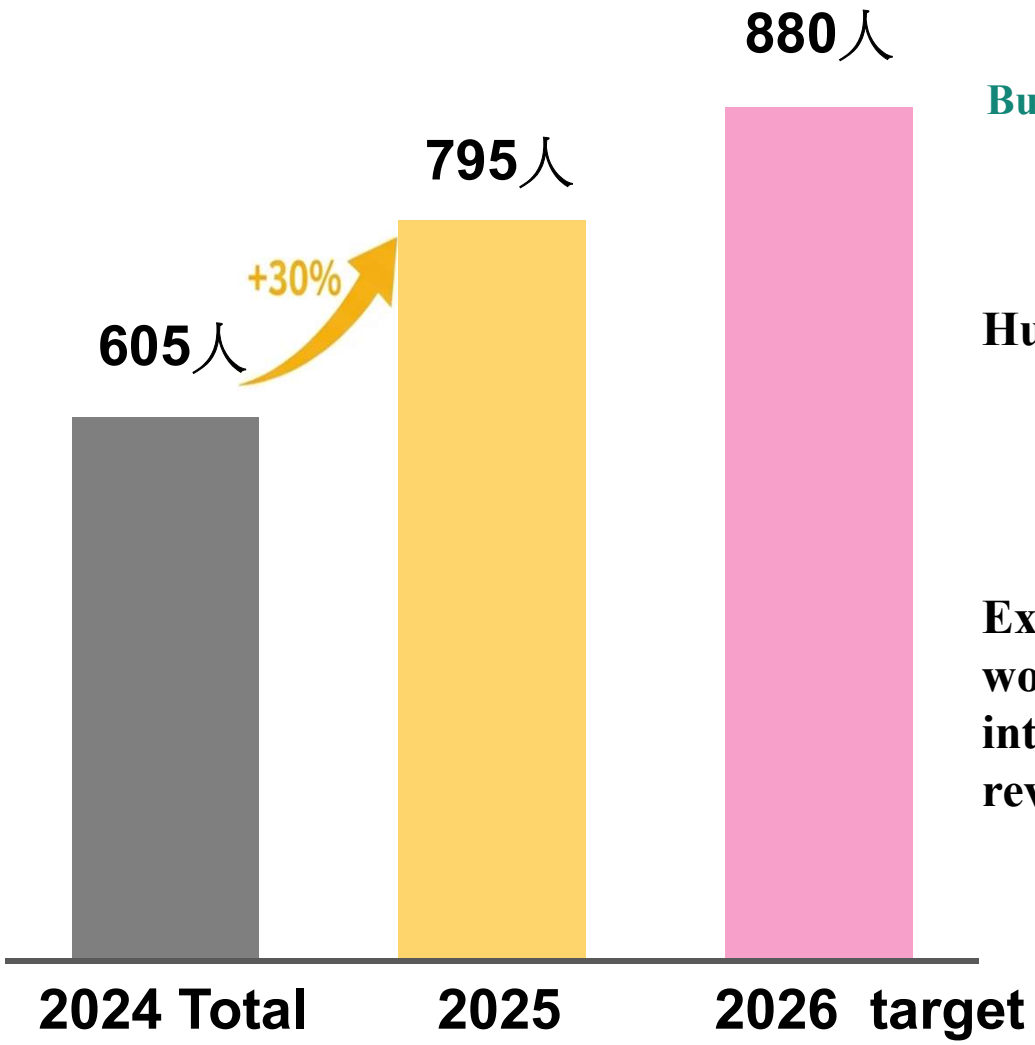


Four Major Growth Drivers for 2026

- Angstrom Generation
- Silicon Photonics
- AI Zone (Expansion of US Clients)
- Global Layout

2015-2025 Revenue Compound Growth Rate (CAGR) 14.5%

Talent Arms Race: Preparing for Explosive Demand in 2026



Strategic Investment in Human Capital. Building a Strong Foundation for Sustainable Future Growth

Human Capital as a Growth Multiplier

- Scaling high-end technical talent aligned with advanced-node demand
- Strengthening silicon photonics testing and R&D capabilities

Execution capacity begins with people — workforce readiness directly translates into scalable production output and revenue growth.

Company Overview

MSSCORPS CO., LTD. (MSS)

Established	Listed	Founder
July 27, 2005	Officially listed on August 31, 2022	Gino Liu Chairman / President

NT$534 Million	795
Capital	Employees
NTD	Technical and Engineering Teams

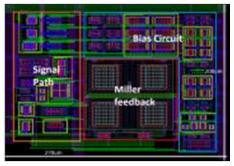
Core Service Offerings

- **Materials Analysis (MA)**- Providing advanced process R&D support to foundries and equipment/material suppliers
- Failure Analysis (FA)- Assisting IC design houses and manufacturers in rapid root cause identification and defect resolution

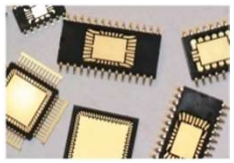
The role of MSS in the semiconductor industry supply chain-FA

Item & Positioning

Failure analysis service (IC Hospital)



IC Design / Photomask



Packaging / Substrate / Flexible Board / PCB Applications

Content

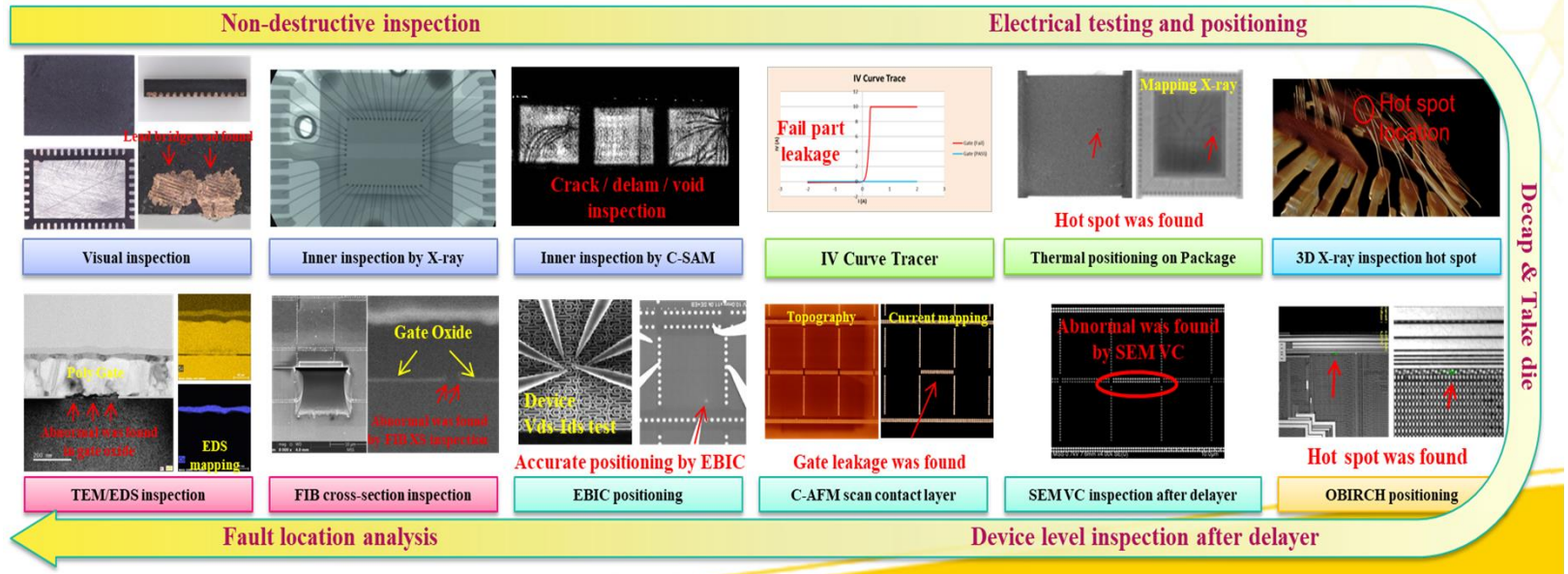
Resolving IC Design Errors and Identifying Root Causes of IC Failures to Accelerate Time-to-Market

- IC debugging and repair, enabling designers to pinpoint design flaws and validate corrective actions
- Post-production analysis of defective units, including re-measurement, fault localization, structural and compositional analysis using EFA & PFA technologies to determine root causes

MSSCORPS' Low-Damage Analytical Technologies

- Originated from leading foundry requirements and extended downstream across the semiconductor ecosystem
- Increasing material diversity, hardness variation, thinner layers, and weaker interlayer bonding demand advanced protection techniques
- Developed proprietary protection processes and patents to minimize thermal and electrical interference and prevent human-induced defects

Failure analysis Process



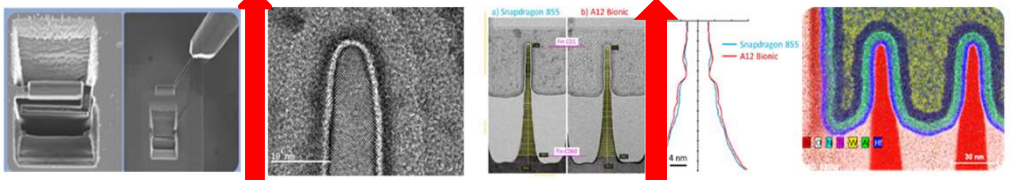
The role of MSS in the semiconductor industry supply chain-MA

Item & Position	Content	
Materials Analysis (R&D leader)	Providing transistor structure and composition analysis enables FAB to quickly achieve the following tasks: 1. Developing state-of-the-art processes, determining new equipment models/new materials/process parameters 2. Implementing mass production; newly built production line equipment must demonstrate consistency with the RD line 3. During mass production, continuously improving production line yield	If MSS's technology stagnates or slows down, our clients' R&D schedules will be delayed!

Fab Eqpt. Materials

MA process

Case in Preparation → FIB FIB+Pick up → TEM Imaging+EDS → Data AI auto-meas. → Report Data org.

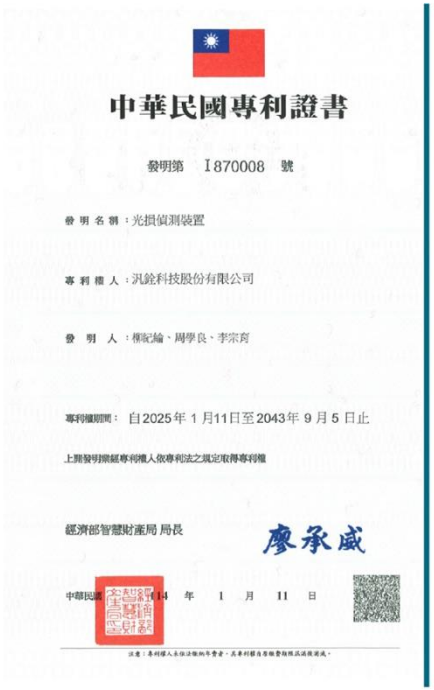


Patent

Patent	低溫原子層鍍膜專利	導電膠保護膜專利	原子層導電膜專利	影像自動量測專利
Patent period	2020~2039	2022~2040	2022~2041	2022~2040

MSSCORPS

Silicon Photonics "Optical Loss Detection Device" - Invention Patent Certificates in Taiwan, Japan, and the United States



中華民國專利證書

發明第 I870008 號

發明名稱：光損偵測裝置

專利權人：汎銓科技股份有限公司

發明人：柳紀綸、周學良、李宗育

專利權期間：自2025年1月11日至2043年9月5日止

上開發明經專利權人依專利法之規定取得專利權

經濟部智慧財產局 局長 廖承威

中華民國 114 年 1 月 11 日

特許証

特許第7600349号

発明の名称 光損失測定装置

特許権者 台湾 300 新竹市埔頂路27號1樓

国籍・地域 台湾

汎銓科技股份有限公司

発明者 柳 紀綸

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特許庁長官

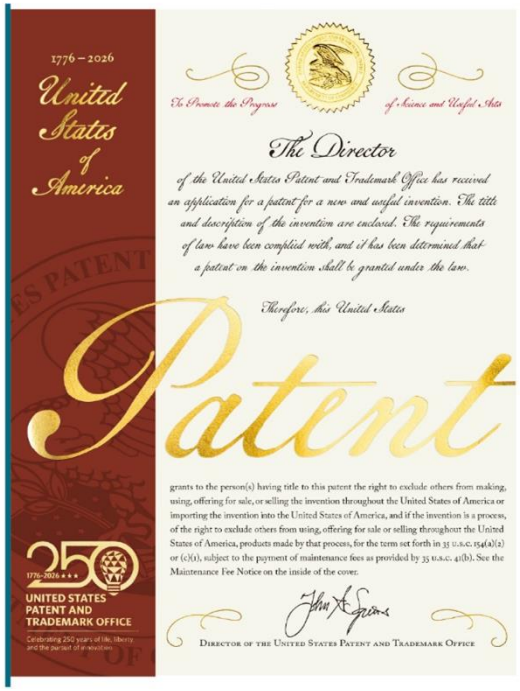
小野洋太

特許証

特許第7600349号

発明者 李 宗育

以下余白



1776 – 2026

United States of America

UNITED STATES PATENT AND TRADEMARK OFFICE

To Promote the Progress of Science and Useful Arts

The Director

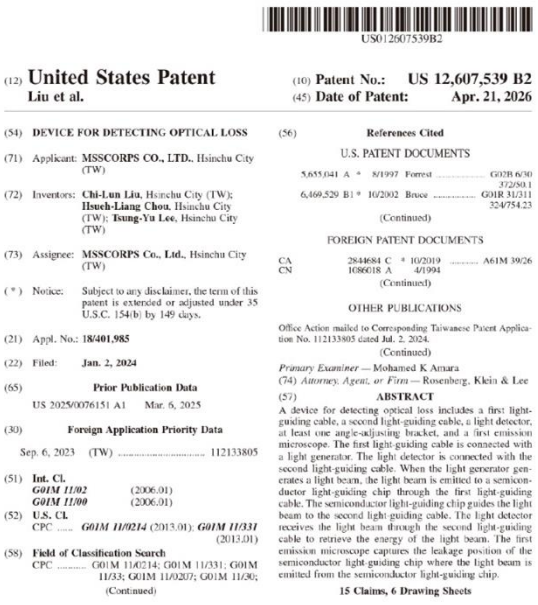
of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(1) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Director of the United States Patent and Trademark Office



US012607539B2

(12) United States Patent
Liu et al.

(10) Patent No.: US 12,607,539 B2
(45) Date of Patent: Apr. 21, 2026

(54) DEVICE FOR DETECTING OPTICAL LOSS

(71) Applicant: MSSCORPS CO., LTD., Hsinchu City (TW)

(72) Inventors: Chi-Lun Liu, Hsinchu City (TW); Hsueh-Liang Chou, Hsinchu City (TW); Tsung-Yu Lee, Hsinchu City (TW)

(73) Assignee: MSSCORPS Co., Ltd., Hsinchu City (TW)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 149 days.

(21) Appl. No.: 18/401,985

(22) Filed: Jan. 2, 2024

(65) Prior Publication Data
US 2025/0076151 A1 Mar. 6, 2025

(30) Foreign Application Priority Data
Sep. 6, 2023 (TW) 112133805

(51) Int. Cl.
G01M 11/02 (2006.01)
G01M 11/00 (2006.01)

(52) U.S. Cl.
CPC G01M 11/0214 (2013.01); G01M 11/331 (2013.01)

(58) Field of Classification Search
CPC G01M 11/0214; G01M 11/331; G01M 11/33; G01M 11/0207; G01M 11/30;
(Continued)

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(Continued)

OTHER PUBLICATIONS

Office Action mailed to Corresponding Taiwanese Patent Application No. 112133805 dated Jul. 2, 2024.
(Continued)

Primary Examiner — Mohamed K Amara
(74) Attorney, Agent, or Firm — Rosenberg, Klein & Lee

(57) ABSTRACT

A device for detecting optical loss includes a first light-guiding cable, a second light-guiding cable, a light detector, at least one angle-adjusting bracket, and a first emission microscope. The first light-guiding cable is connected with a light generator. The light detector is connected with the second light-guiding cable. When the light generator generates a light beam, the light beam is emitted to a semiconductor light-guiding chip through the first light-guiding cable. The semiconductor light-guiding chip guides the light beam to the second light-guiding cable. The light detector receives the light beam through the second light-guiding cable to retrieve the energy of the light beam. The first emission microscope captures the leakage position of the semiconductor light-guiding chip where the light beam is emitted from the semiconductor light-guiding chip.

15 Claims, 6 Drawing Sheets

Taiwan

Japan

US

MATERIAL SCIENCE SERVICE

感謝各位先進的聆聽

Thank you for listening, and welcome your guidance

以下開放Q&A