

# Results of Operations

for the Second Quarter of the Fiscal Year Ending March 31, 2024

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C. Uyemura & Co., Ltd.

Standard Market of the Tokyo Stock Exchange (Stock Code : 4966)

November 13, 2023

Updated on November 24, 2023

# Overview of Consolidated Financial Results

## for the Second Quarter of the Fiscal Year Ending March 31, 2024

### Period under review

In Japan (2 companies): April–September / Overseas (10 companies): January–June

- **Surface finishing materials business**

- Both segment sales and profit of the mainstay plating chemicals for package PWBs saw a year-over-year decrease. This was due to the capital investment restraints that lasted from the second half of the previous year in the server market for data centers and the inventory adjustment made for the lower sales volume of PCs and smartphones.

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- **Surface finishing machinery business**

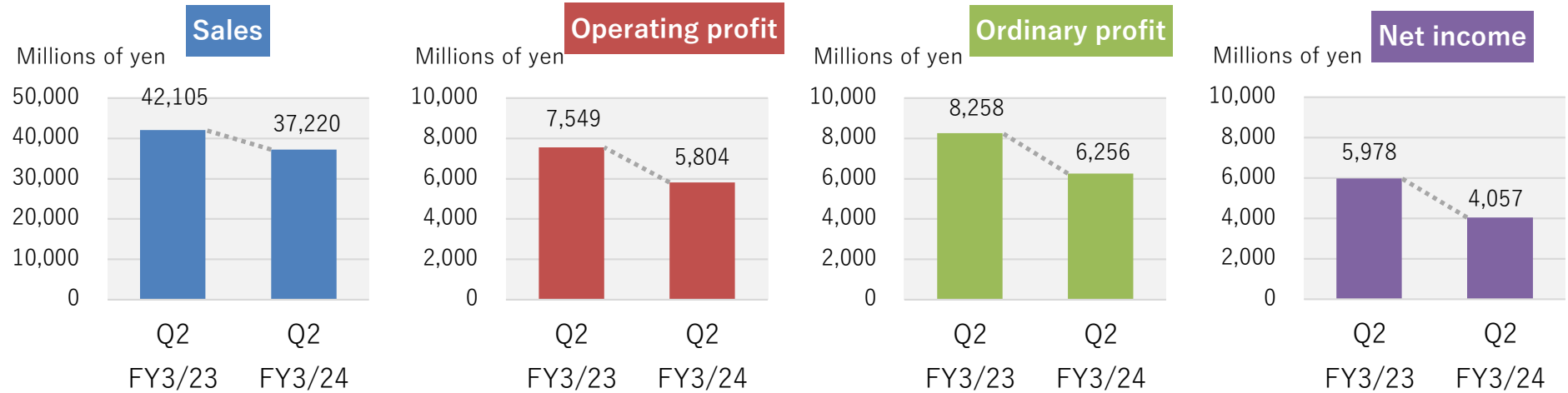
- Both segment sales and profit of the surface finishing machinery business saw a year-over-year increase thanks to the increased sales of plating equipment for semiconductors and electronic components in Japan and China.

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- **Plating job business**

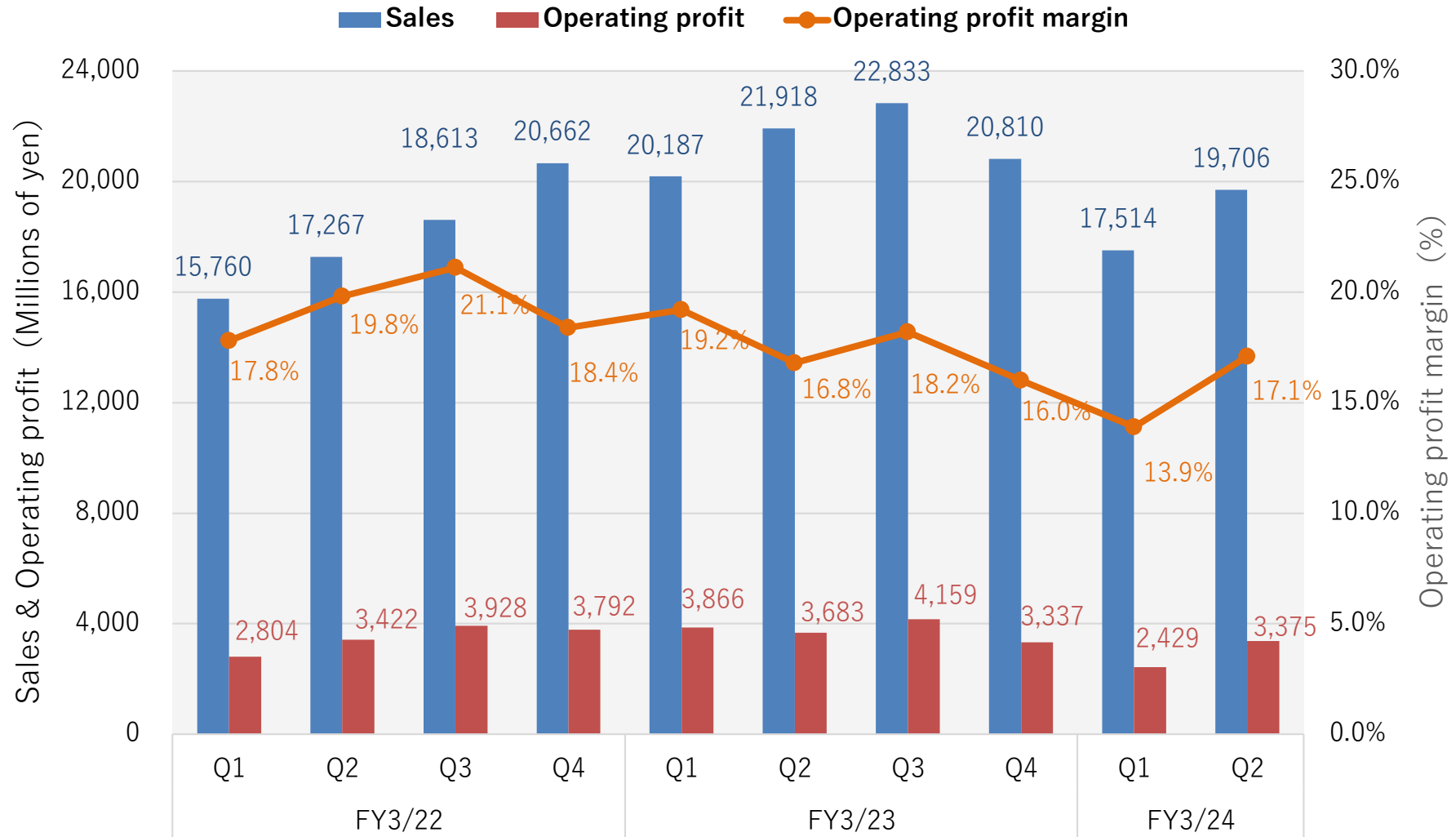
- The plating job business saw a year-over-year decrease in segment sales and reported a segment loss. This was due to the sluggish demand for plastic plating job as the automobile industry in Thailand and Indonesia faced the rapid spread of electric vehicles and the increasing adoption of painted parts.

# Q2 FY3/24 Financial Results

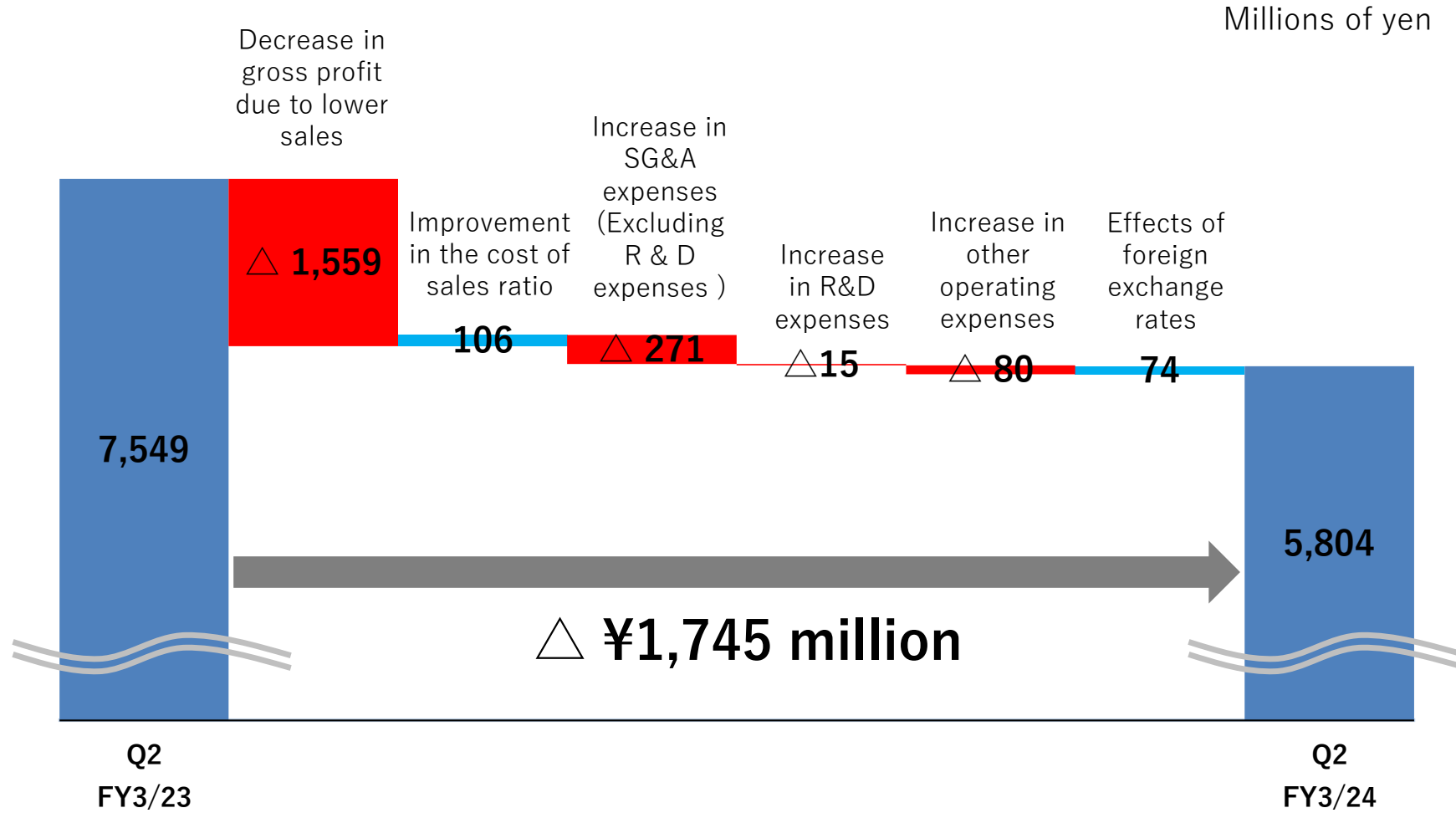


Millions of yen	Q2 FY3/23 Results	Q2 FY3/24 Forecast	Q2 FY3/24 Results	YoY change	Vs. Initial forecast
Sales	42,105	27,290	37,220	△ 4,885 (△ 11.6%)	+ 9,930 (+ 36.4%)
Operating profit	7,549	4,000	5,804	△ 1,745 (△ 23.1%)	+ 1,804 (+ 45.1%)
Ordinary profit	8,258	4,130	6,256	△ 2,002 (△ 24.2%)	+ 2,126 (+ 51.5%)
Net income	5,978	3,070	4,057	△ 1,921 (△ 32.1%)	+ 987 (+ 32.1%)
Exchange rate: \$US	123.14 yen	133.53 yen	135.00 yen	+ 11.86 yen	+ 1.47 yen

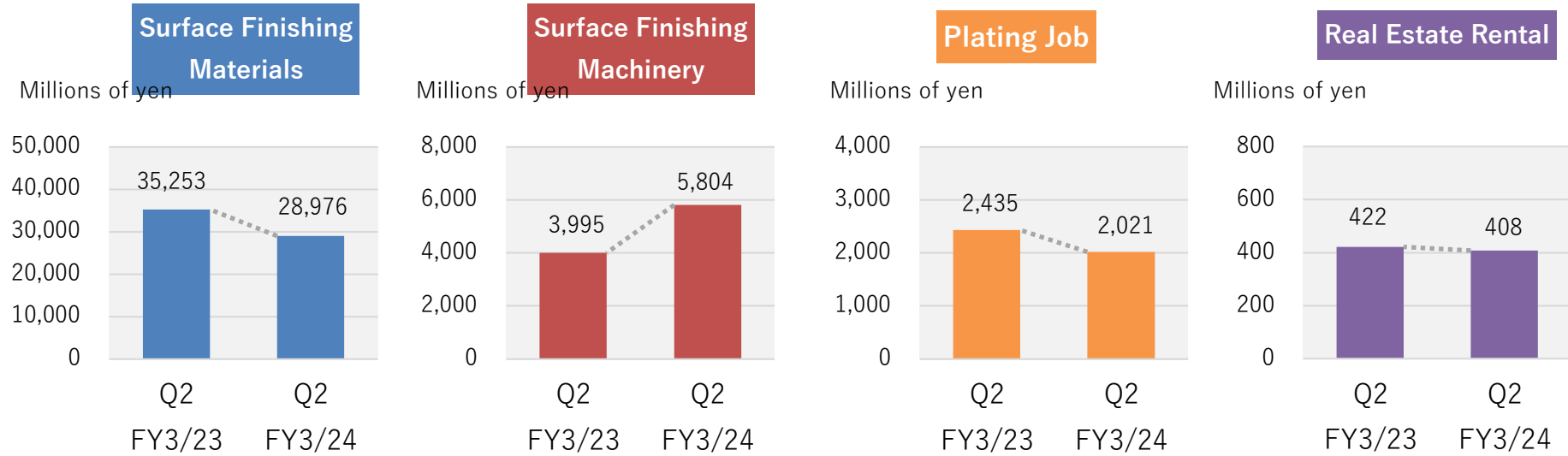
# Quarterly Results



# Changes in Operating profit

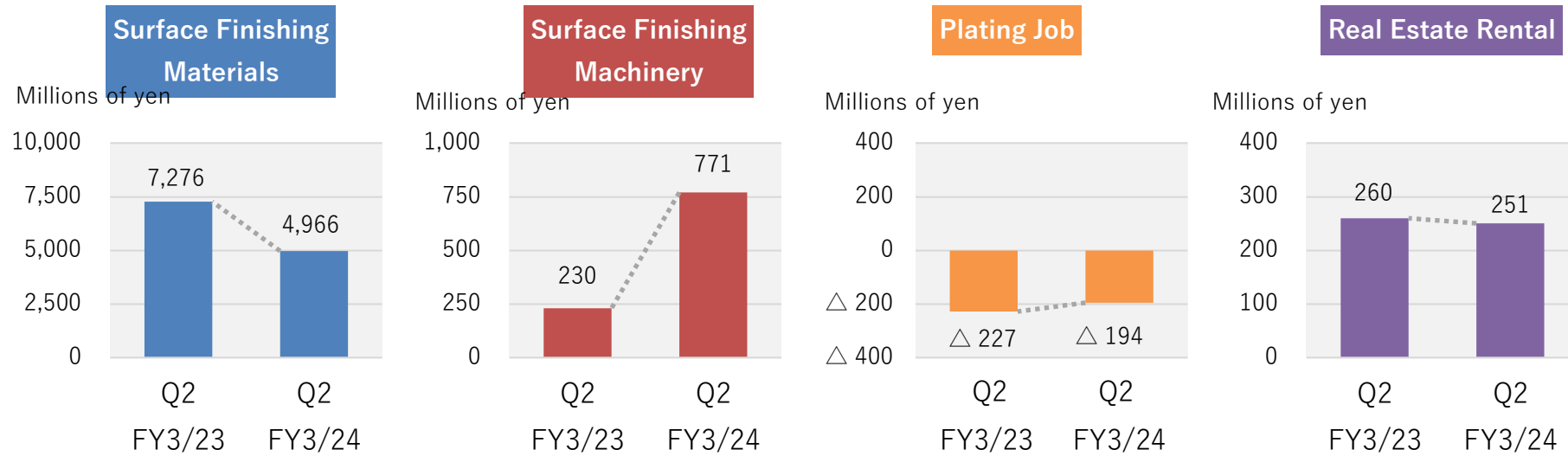


# Sales by Business Segment



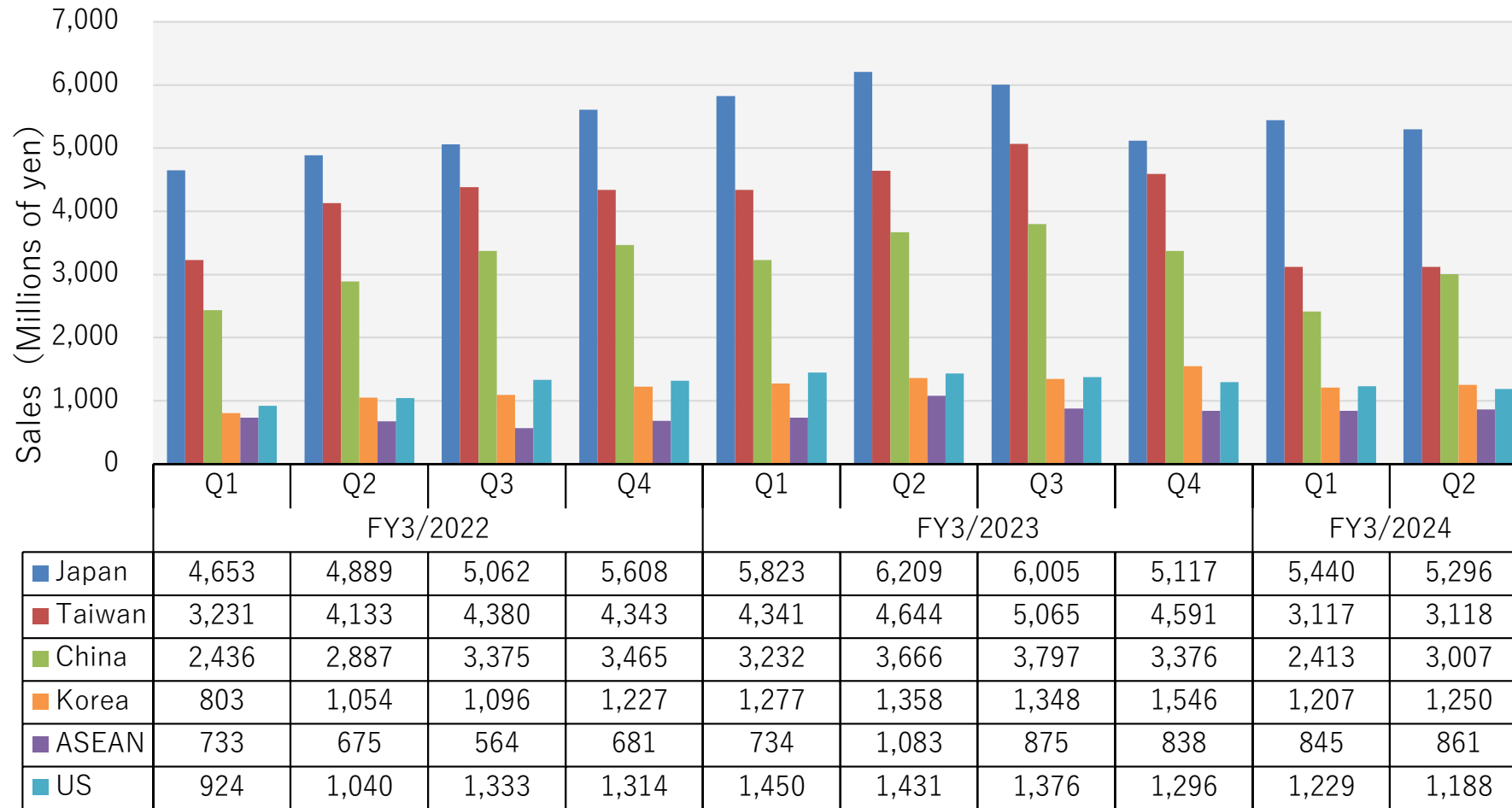
Millions of yen	Q2 FY3/23 Results	Q2 FY3/24 Results	Change	Percentage change
Surface Finishing Materials	35,253	28,976	△ 6,276	△ 17.8%
Surface Finishing Machinery	3,995	5,804	+ 1,809	+ 45.3%
Plating Job	2,435	2,021	△ 413	△ 17.0%
Real Estate Rental	422	408	△ 14	△ 3.4%

# Operating Income by Business Segment



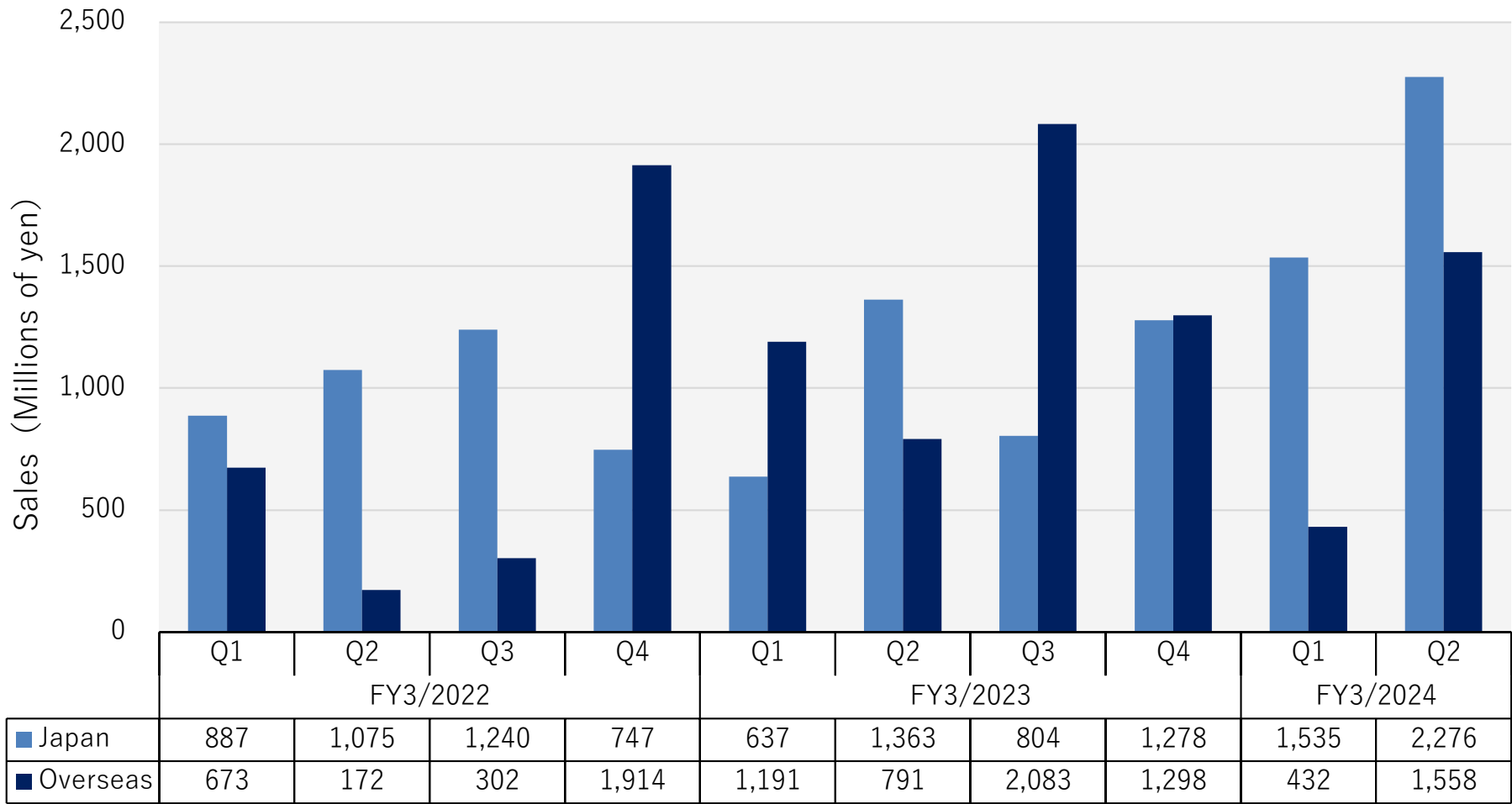
Millions of yen	Q2 FY3/23 Results	Q2 FY3/24 Results	Change	Percentage change
Surface Finishing Materials	7,276	4,966	△ 2,310	△ 31.7%
Surface Finishing Machinery	230	771	+ 541	+ 235.0%
Plating Job	△ 227	△ 194	+ 33	-
Real Estate Rental	260	251	△ 8	△ 3.4%

# Surface Finishing Materials Business Sales

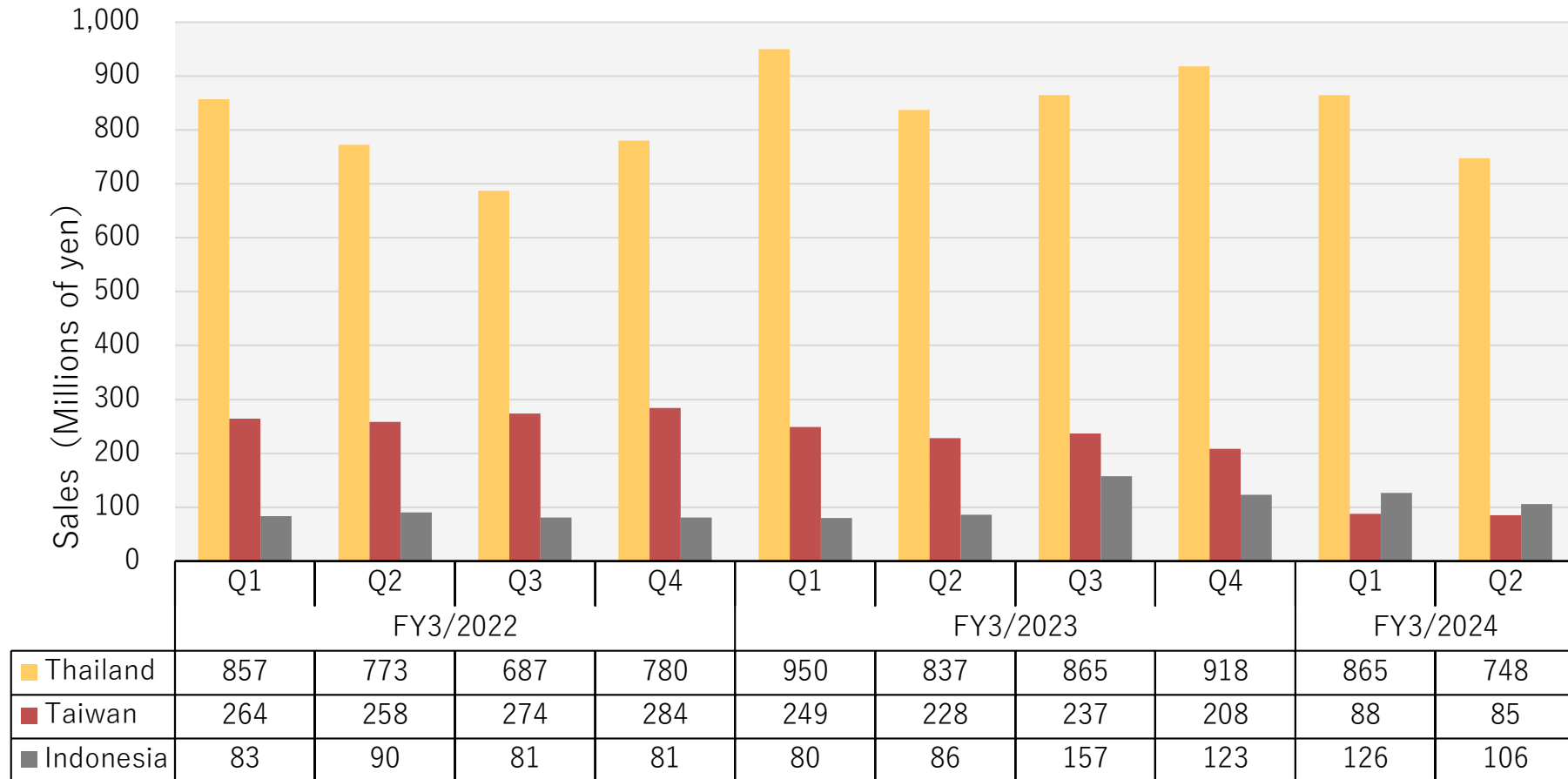




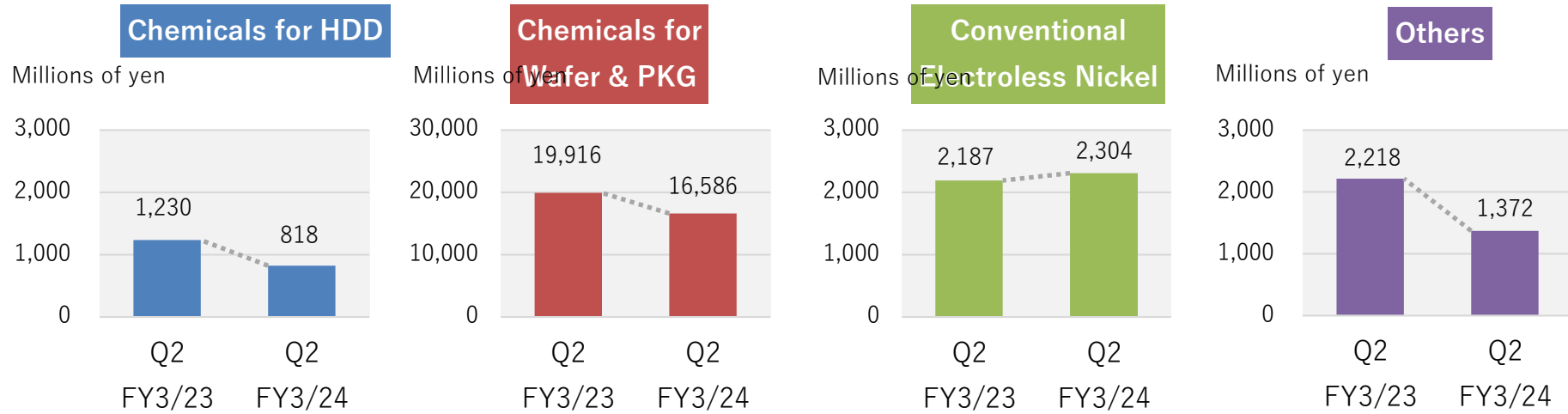
# Surface Finishing Machinery Business Sales



# Plating Job Business Sales



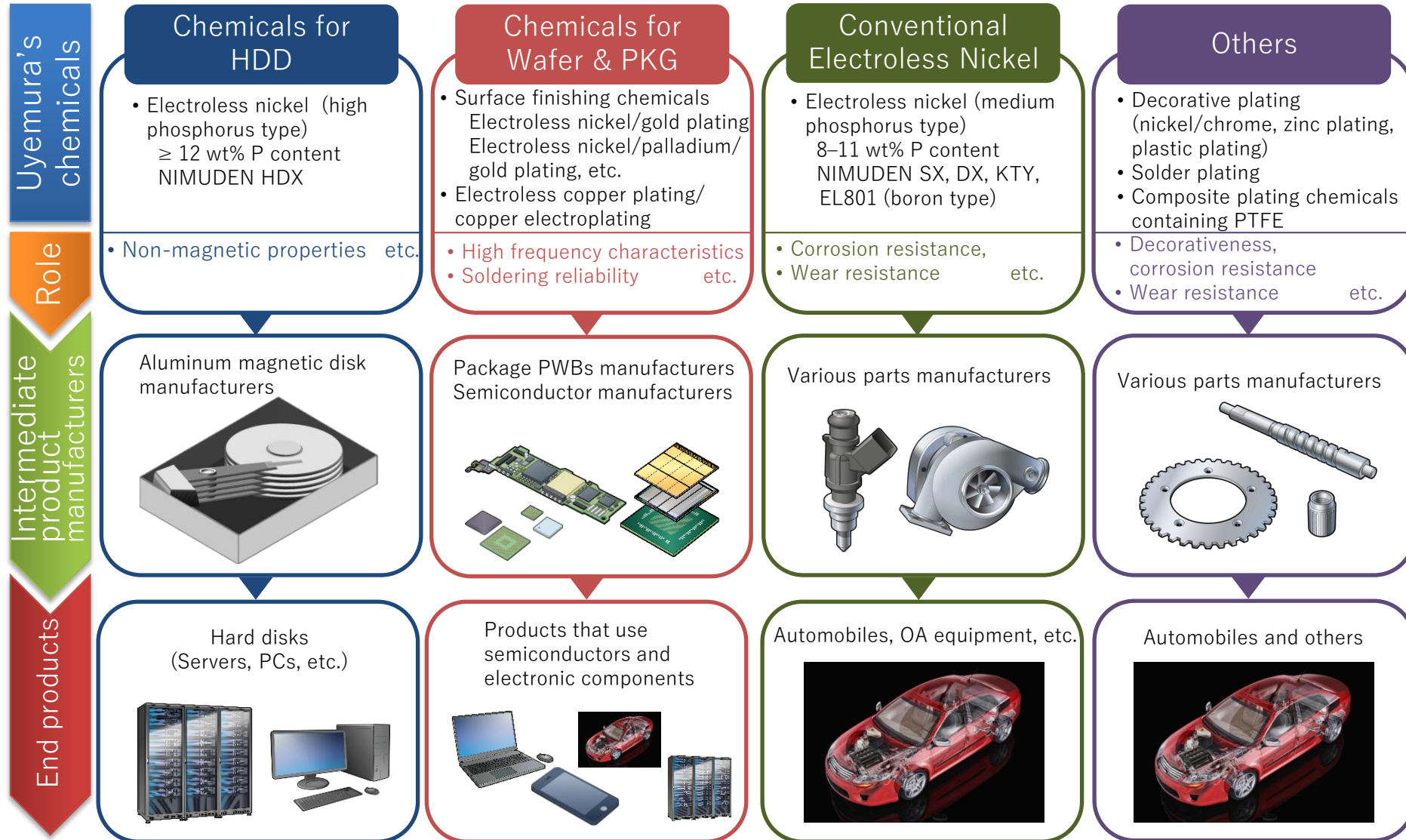
# Sales by Chemicals Categories



Millions of yen	Q2 FY3/23 Results		Q2 FY3/24 Results		Change	Percentage change
		%		%		
Chemicals for HDD	1,230	4.8%	818	3.9%	△ 412	△ 33.5%
Chemicals for Wafer & PKG	19,916	77.9%	16,586	78.7%	△ 3,330	△ 16.7%
Conventional Electroless Nickel	2,187	8.6%	2,304	10.9%	+ 116	+ 5.3%
Others	2,218	8.7%	1,372	6.5%	△ 846	△ 38.1%
<b>Total</b>	<b>25,554</b>	<b>100.0%</b>	<b>21,082</b>	<b>100.0%</b>	<b>△ 4,472</b>	<b>△ 17.5%</b>

Sales of chemicals are included in the surface finishing materials business. Chemicals do not include abrasive compounds, industrial chemicals, or metals and the like. \*Intersegment sales are included.

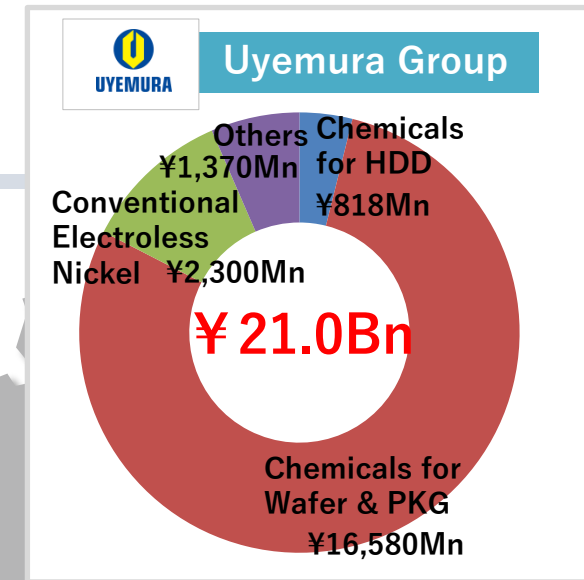
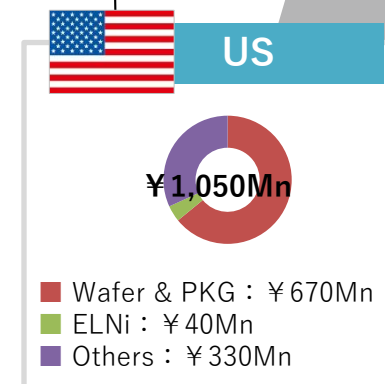
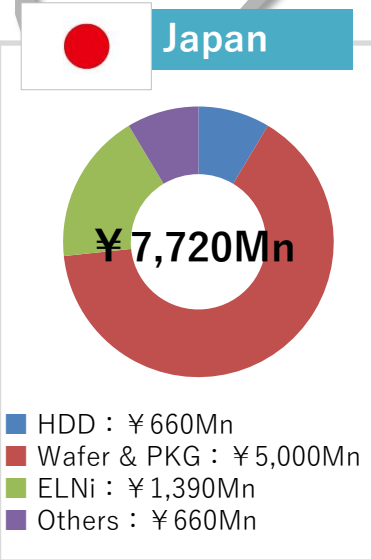
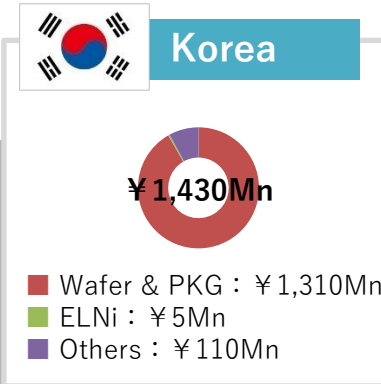
# Chemicals Business – From Uyemura to End Users



# Chemical Sales by Region

## Q2 FY3/24 Results

\*Intersegment sales are included.



# Revisions to the Consolidated Forecast

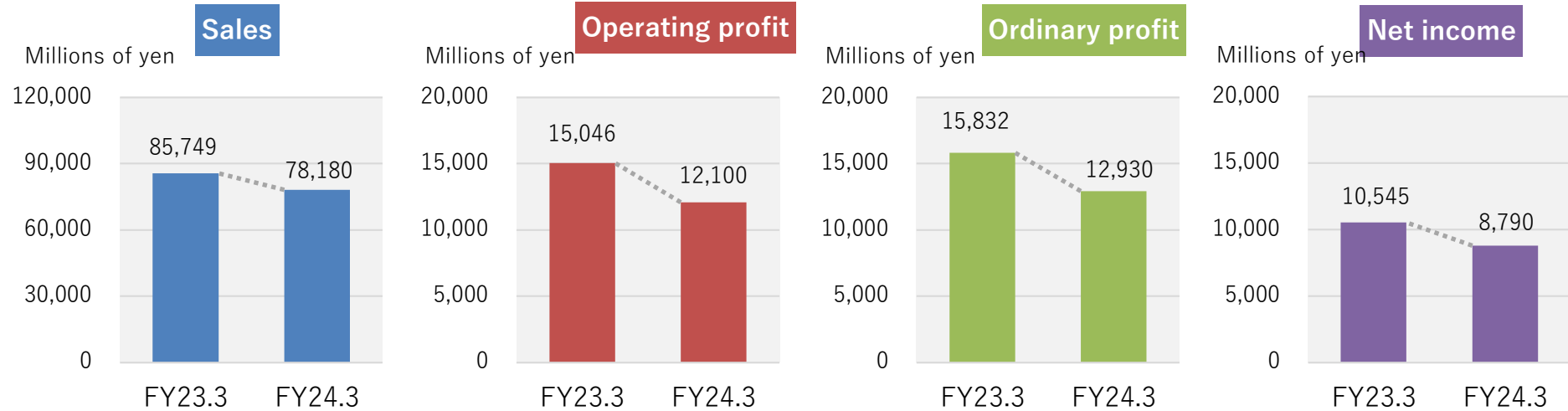
Millions of yen	Previous forecast	Revised forecast	Change	Percentage change
Sales	66,230	78,180	+ 11,950	+ 18.0%
Operating profit	10,230	12,100	+1,870	+18.3%
Ordinary profit	10,360	12,930	+2,570	+24.8%
Net income	7,030	8,790	+1,760	+25.0%
Net income per share for the period	424.54 yen	542.02 yen		

## < Reasons for the revision to forecasts >

During the 1H FY3/24, the surface finishing machinery business enjoyed strong sales of plating equipment for semiconductor wafers used to manufacture on-vehicle power devices, and the surface finishing materials business was favored by steady sales of plating chemicals for automotive insulated gate bipolar transistors (IGBTs) due to the spread of electric vehicles (EVs), plug-in hybrid vehicles (PHVs), and hybrid vehicles (HVs).

As a result, the consolidated financial results for the FY3/24 are now expected to exceed the previously announced forecasts, in both sales and profits.

# FY3/24 Consolidated Forecast



Millions of yen	FY3/23 Results	FY3/24 Forecast (Revised on Nov.13,2023)	Change	Percentage change
Sales	85,749	78,180	△ 7,569	△ 8.8%
Operating profit	15,046	12,100	△ 2,946	△ 19.6%
Ordinary profit	15,832	12,930	△ 2,902	△ 18.3%
Net income	10,545	8,790	△ 1,755	△ 16.6%
Exchange rate: \$US	131.62 yen	141.12 yen	+ 9.50 yen	

# FY3/24 Consolidated Forecasts

## ● Sales & Operating profit by Business Segment

Millions of yen	Sales				Operating profit			
	FY3/23 Results	FY3/24 Forecast (Revised on Nov.13,2023)	Q2 FY3/24 Results	Progress against forecast	FY3/23 Results	FY3/24 Forecast (Revised on Nov.11,2023)	Q2 FY3/24 Results	Progress against forecast
Surface Finishing Materials	70,494	60,800	28,976	47.7%	13,887	10,950	4,966	45.4%
Surface Finishing Machinery	9,460	12,300	5,804	47.2%	941	1,310	771	58.9%
Plating Job	4,946	4,280	2,021	47.2%	△ 316	△ 470	△ 194	-
Real Estate Rental	844	800	408	51.0%	514	310	251	81.2%

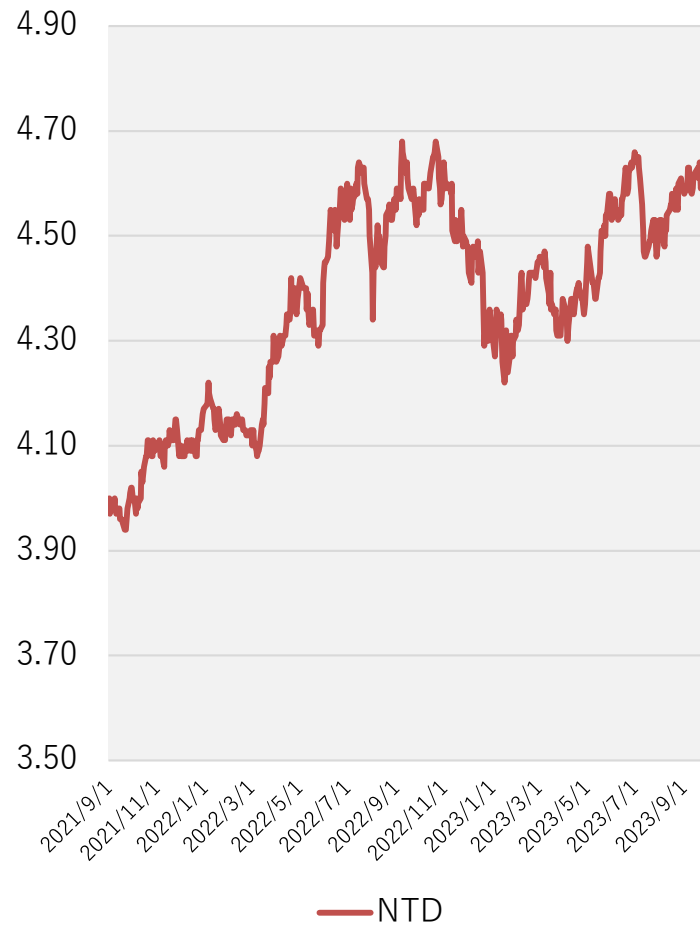
## ● Sales by Chemicals Categories

Millions of yen	FY3/23 Results	FY3/24 Forecast (Revised on Nov.13,2023)	Q2 FY3/24 Results	Progress against forecast
Chemicals for HDD	2,329	1,600	818	51.2%
Chemicals for Wafer & PKG	39,198	33,310	16,586	49.8%
Conventional Electroless Nickel	4,437	4,435	2,304	52.0%
Others	4,141	3,080	1,372	44.6%
Total	50,107	42,425	21,082	49.7%



# Exchange Rates

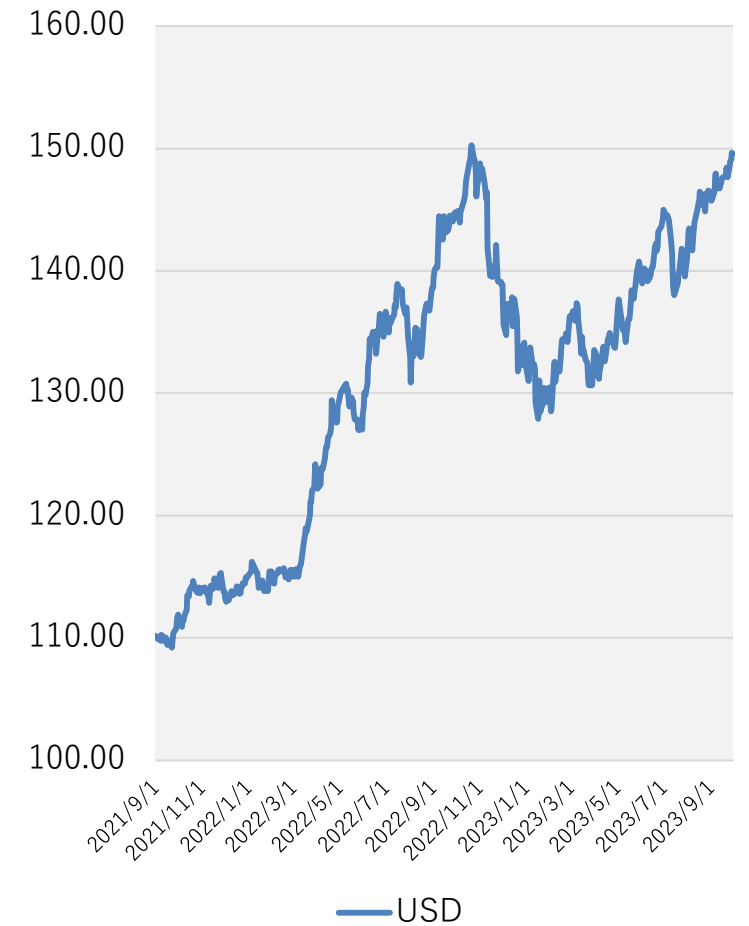
## NTD



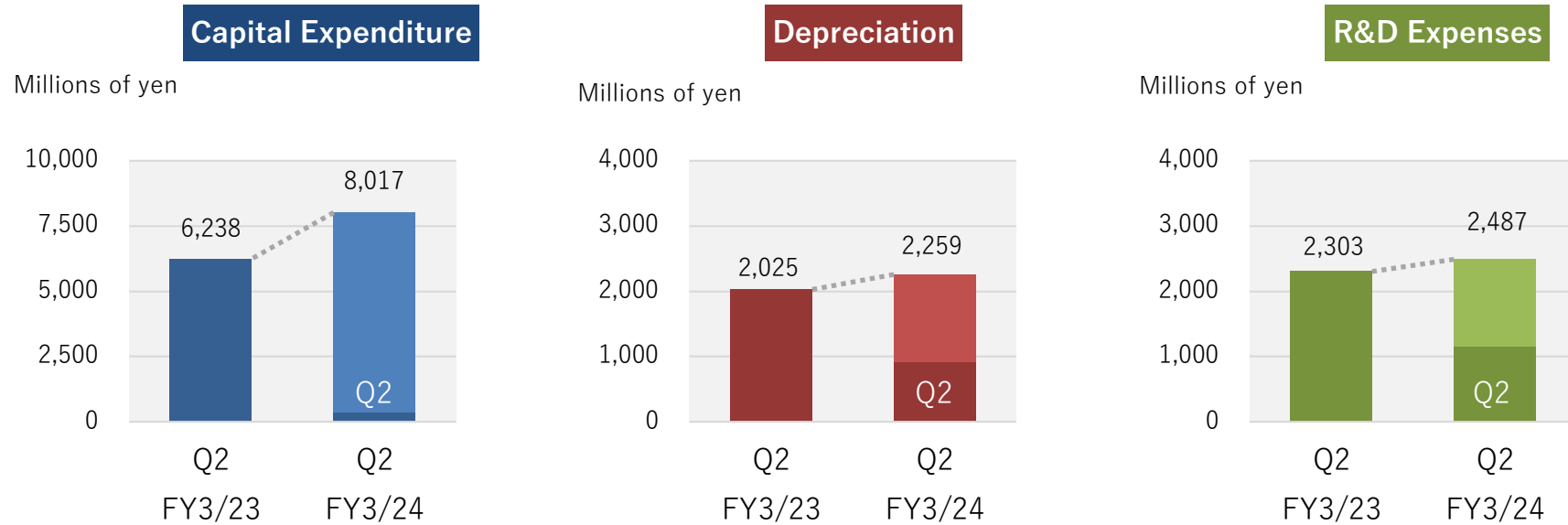
## CNY



## USD



# Capital Expenditure, Depreciation and R&D Expenses



Millions of yen	FY3/23 Results (Full-year)	Q2 FY3/24 Results	FY3/24 Forecast (Full-year)
Capital Expenditure	6,238	358	8,017
Depreciation	2,025	923	2,259
R&D Expenses	2,303	1,153	2,487

# Capital Policy

**We are working on a capital policy in view of the basic policy of securing a stable management base and improving the return on shareholders' equity.**

**Goal: 50% for the total return ratio on a consolidated basis and 8.5% ROE**

**Flexible acquisition of shares worth 6 billion yen during the 3-year period from FY3/2022 to FY3/2024**

**Target for 10% ROE in the medium- to long-term**

- **Realization of stable dividends and flexible acquisition of treasury share based on a total return ratio**
- **Flexible acquisition of treasury shares considering economic conditions, financial conditions, etc.**
- **Securing internal reserves for fields and regions where future growth is expected, new technology acquisition, M&A transactions, unexpected events, and natural disasters**

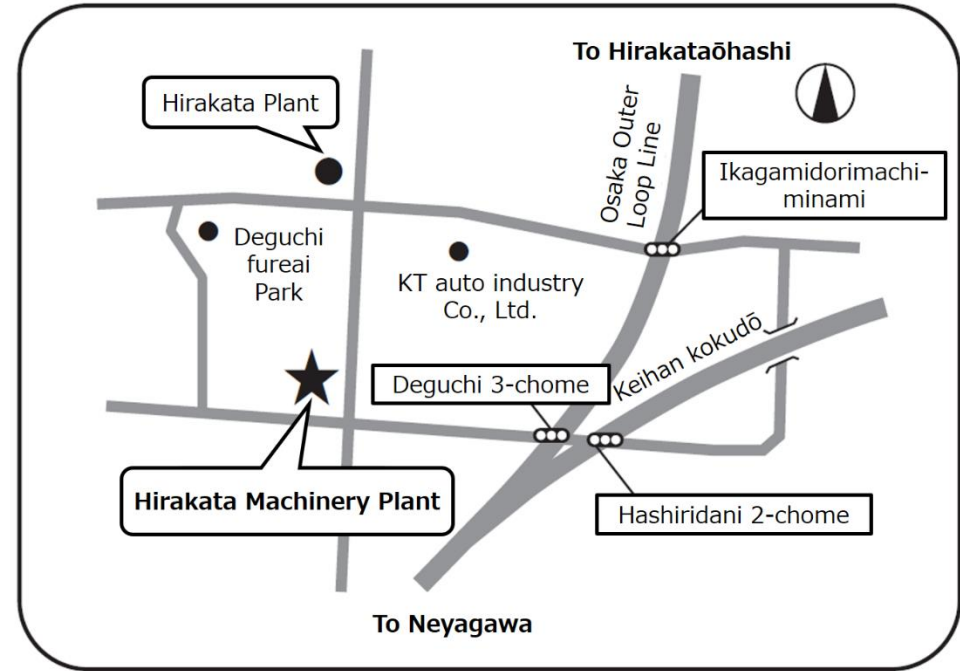
\* We hold a certain amount of our shares in treasury to be used as a reward to motivate our executives and employees to achieve sustainable corporate value creation as well as to implement our M&A strategy (M&A transactions, business and capital alliances, etc.).

\* If we do not implement our M&A strategy, we will consider cancelling treasury shares that exceed 10% of total number of shares outstanding.

# Topic: Hirakata Machinery Plant Relocation



- Location: 17-20, Deguchi 1-chome, Hirakata, Osaka
- Site area: approx. 4,978 square meters
- Total investment: approx. 3.2 billion yen (for land, buildings, etc.)
- The factory has a dedicated area for manufacturing plating equipment for semiconductors
- Basic design in line with SDGs and carbon neutrality



**Plan to start operation in  
November 27th**

# Topic: Shanghai Technical Center to Be Established



- Location: 17-10, Beihe Road, Shanghai Chemical Industry Zone
- Building name: Shanghai International Chemical New Materials Innovation Center (Innovation Base Pilot Factory Building No. 10)
- Total investment: approx. 16,500 thousand yuan (for building, analytical equipment, etc.)
- Clean rooms, laboratory, analysis laboratory, and other facilities fully equipped

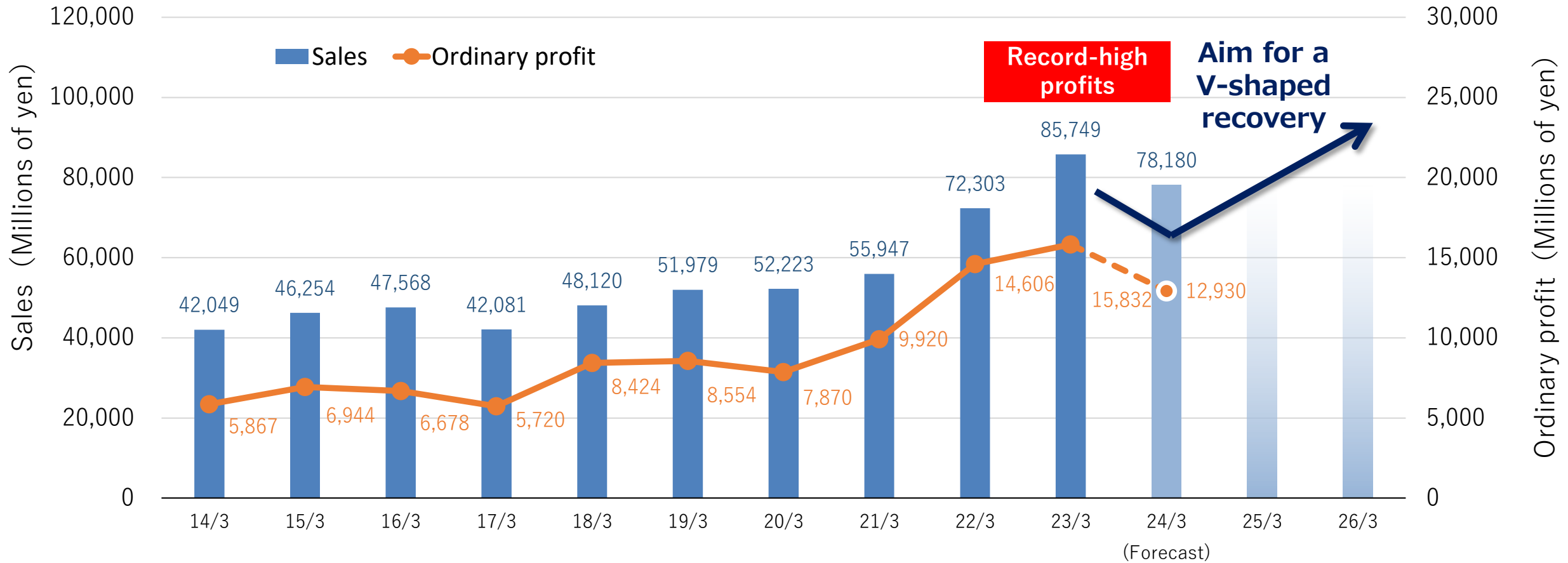
## INNOGREEN (Shanghai Chemical Industry Zone)



**Plan to start operation in April  
2024**

# Outlook for FY3/25 Onward

**FY3/24 is expected to be lower than FY3/23, when we achieved record-high profits, mainly due to the impact of production adjustments in package PWBs. From FY3/25 onward, we aim for a V-shaped recovery due to the recovery of the electronic device market.**



# Business Environment

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## ➤ Current market condition

- (1)Domestic market: While the PC-related sector is returning to the pre-COVID-19 level demand, the server sector continues struggling with prolonged significantly low shipments due to inventory adjustment.  
Particularly for HDDs, demand is growing but shipment volume is still declining due to the extension of the HDD replacement cycle **from 4 to 5 years** and the increase in **maximum** storage capacity **from 60% to 80%**. The power devices sector remains relatively steady thanks to lower decline in demand.
- (2)Overseas market: Almost similar trend as the domestic market including demand for automobiles  
Forecast that potential demand for semiconductor-related products will return after inventory adjustment.



# Next Generation Products under Development

## Response to high density package substrate

Electroless copper plating bath with low stress that can improve the throwing power of small diameter vias.

## Expansion of semiconductor business

Development of electrolytic plating process for most advanced semiconductor packaging (Participation in the NEDO Project).

Process development appropriate for new bonding materials(Ag sintering, Cu sintering)

## Improvement of work environment

Development of Metal Oxide Seed Layer (MOSL) on glass in addition to desmear-free process through adhesion improvers

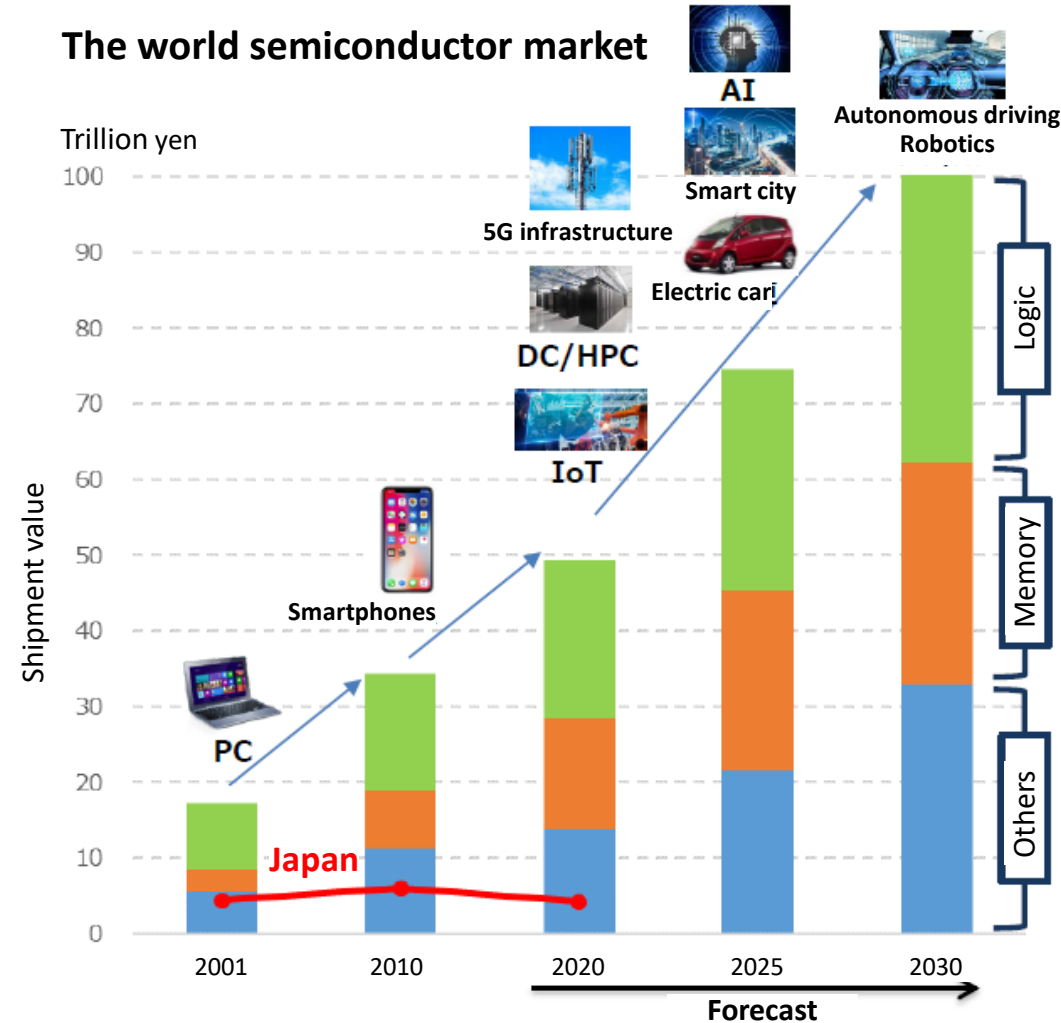
## Reduction in rare metal consumption

Low density palladium catalysts with the use of pickling additives at pre-treatment process of electroless copper plating

## Improvement of environmental burdens

Reduction in wastewater through a recycle system of electrolytic copper plating bath  
Plating bath without environmental toxins (free cyanide, lead, formalin, etc.)

# Trends of the world semiconductor market

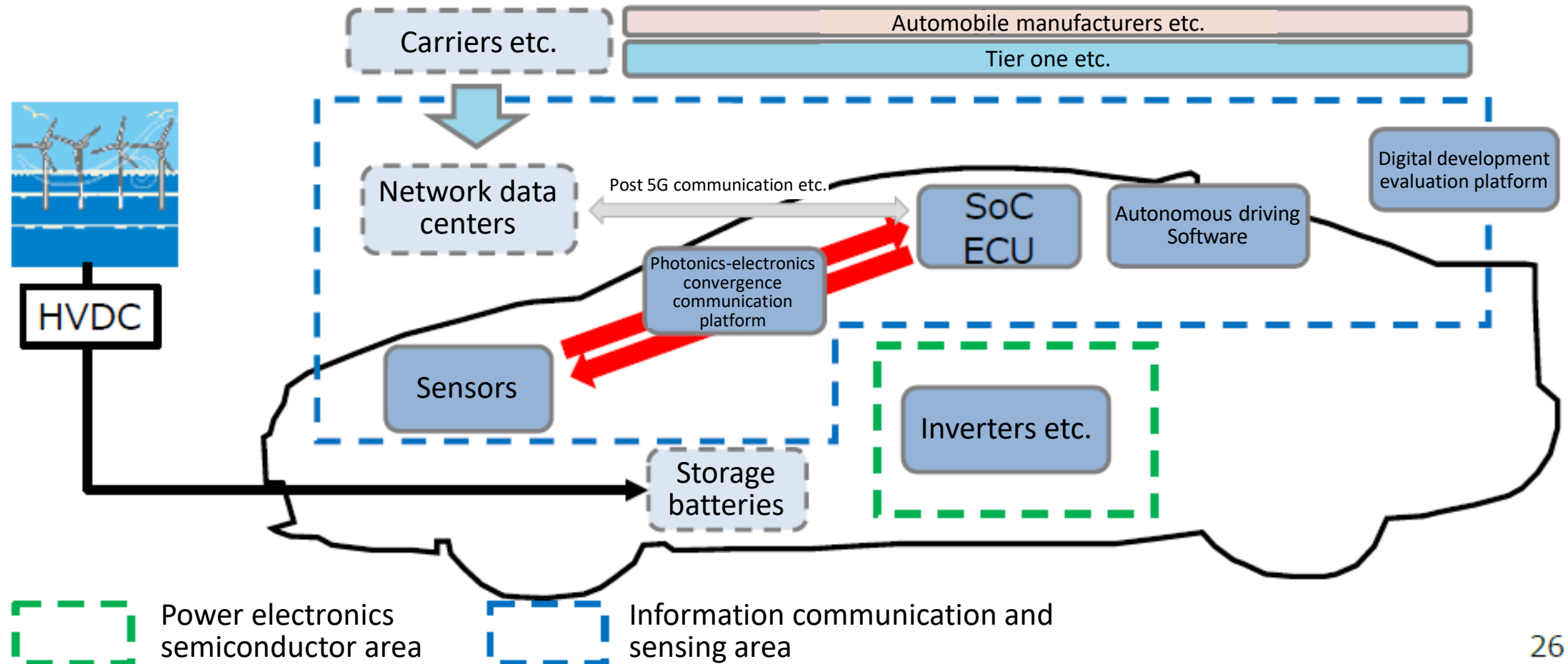


	Market size 2018	Product examples	Major companies
Logic (For control)	2.1 billion	Processor	intel tsmc
		GPU	QUALCOMM NVIDIA
		SoC	
Memory (For recording data)	1.8 billion	DRAM	SAMSUNG SK hynix
		NAND	Micron KIOXIA
Others	1.5 billion	Analog LSI	infineon SONY
		Power semiconductor	ON Semiconductor
		Image sensor	MITSUBISHI ELECTRIC

Reference: Prepared by METI based on data from Omdia 54

Reference: METI "Semiconductor and digital industry strategy" summary (2021) Semiconductor strategy (in PDF) P54

# Where are on-vehicle semiconductors used?



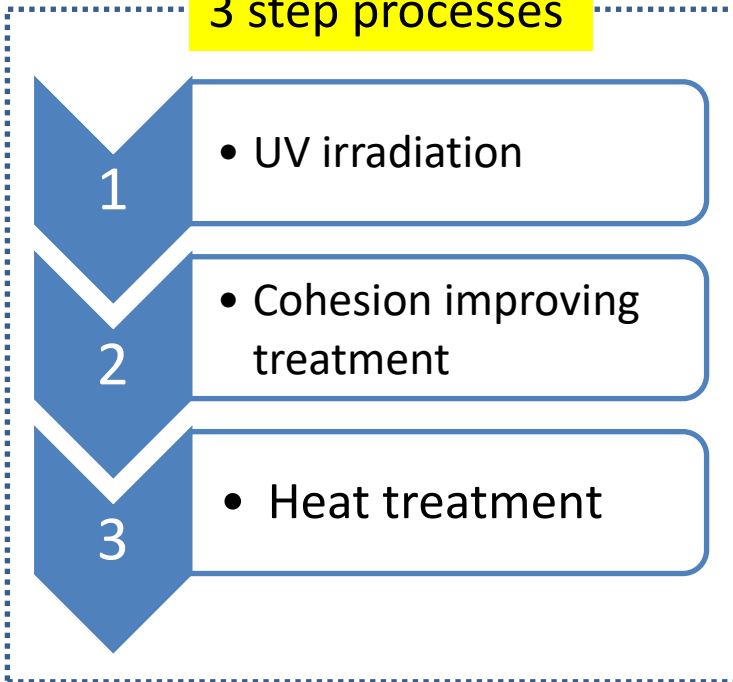
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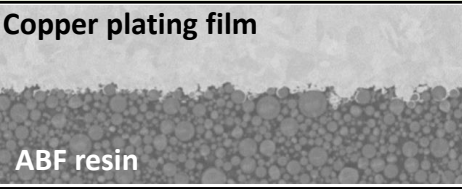
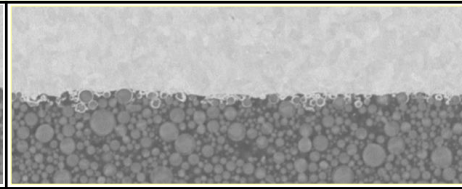
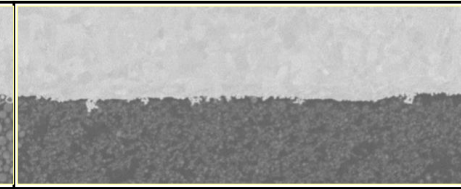
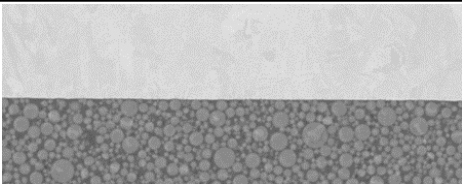
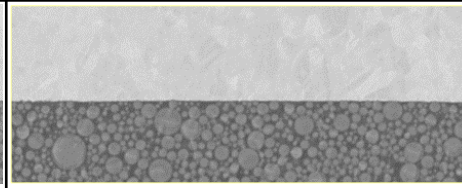
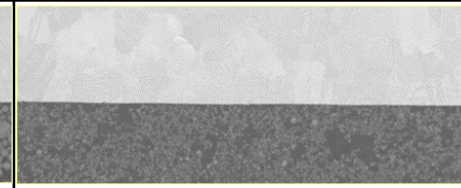
Reference: METI "Semiconductor and digital industry strategy" summary (2021) Semiconductor strategy (in PDF) P26

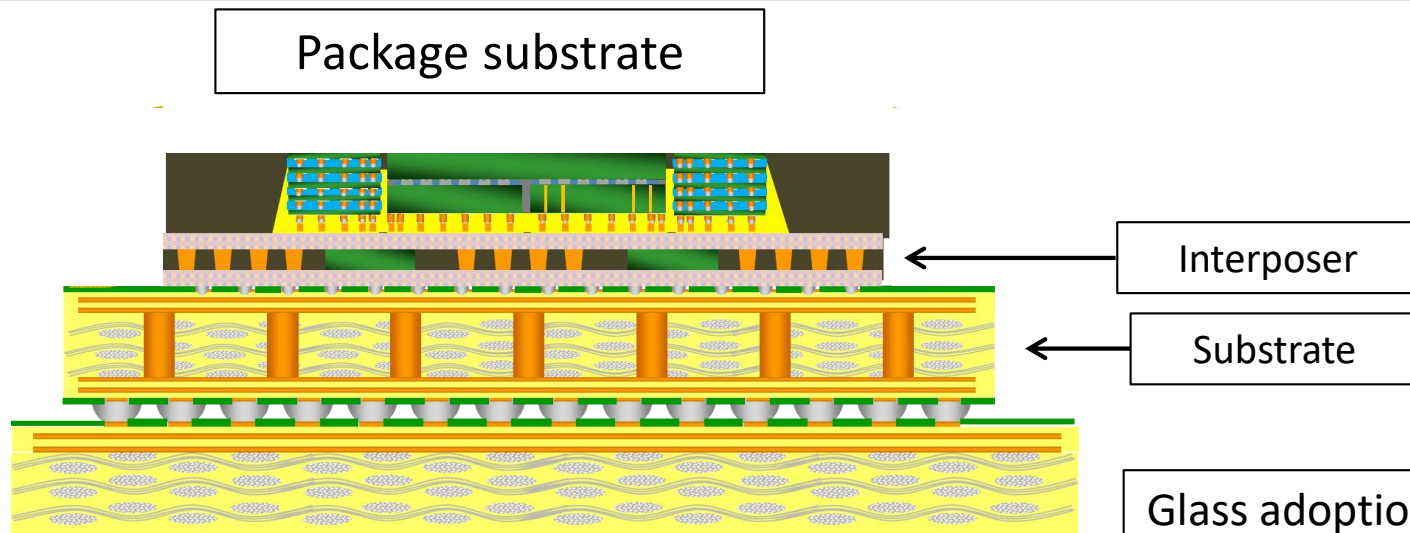
# Desmear-free process for package substrates

Without using desmear process that contains organic solvent and permanganate, we have developed a process that enables us to form **flat and highly cohesive circuits**.

## 3 step processes



Electroless copper plating + SEM cross section observation after the plating X5000			
Conventional	<b>Copper plating film</b>  <b>ABF resin</b>		
Desmear-free			
	GL102	GL103	GY50



## Glass characteristics

- High rigidity
- Low thermal expansion coefficient
- High smoothness

## Demand characteristics

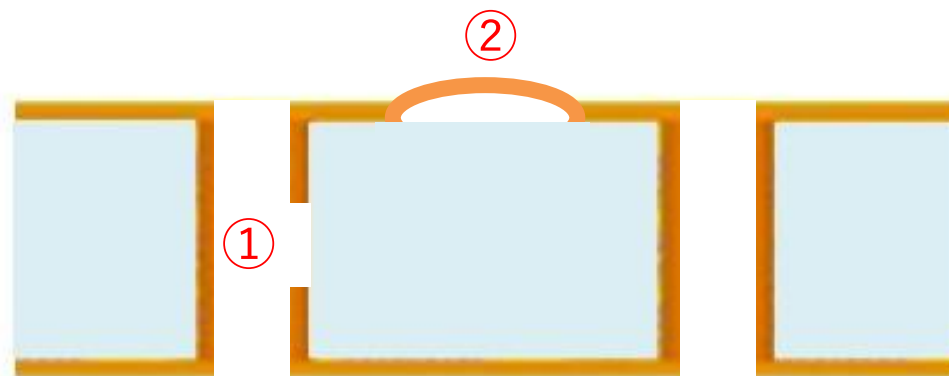
- Torsion dimensional accuracy
- Warpage dimensional accuracy
- Fine wiring formation

Glass adoption for interposers and substrates toward fine wiring



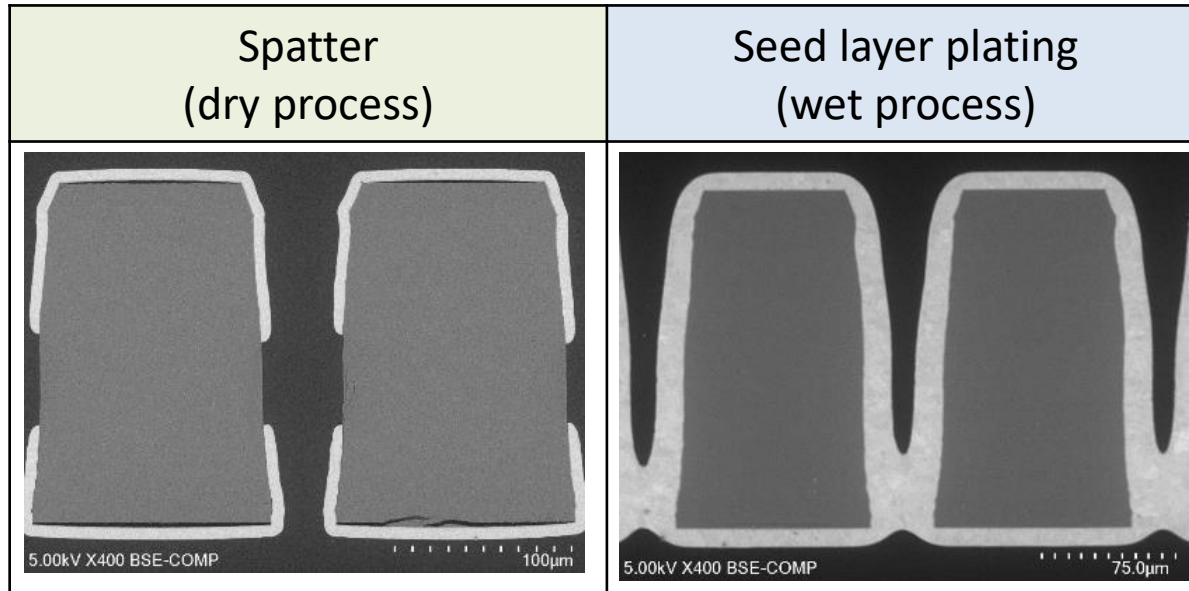
## Concerns

- ① Disconnection in a through hole
- ② Wiring adhesion

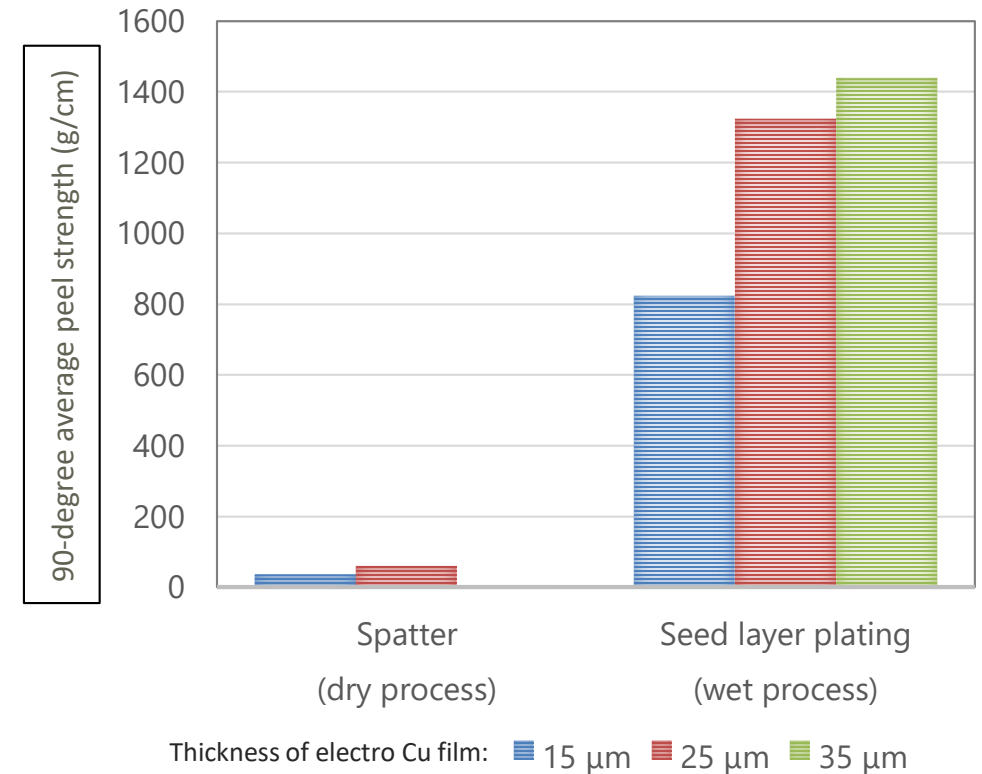


Glass substrate with a through hole

## Disconnection in a through hole



## Wiring adhesion



Seed layer plating can resolve both concerns.



Heat treatment  
temperature

300

°C

Low temperature  
treatment process

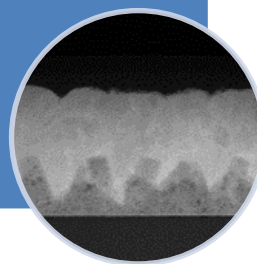


Peel strength: 25  $\mu\text{m}$  film  
thickness

1

kgf/cm

High adhesion with glass



Aspect ratio: 10

98

%

High throwing power  
in a through hole



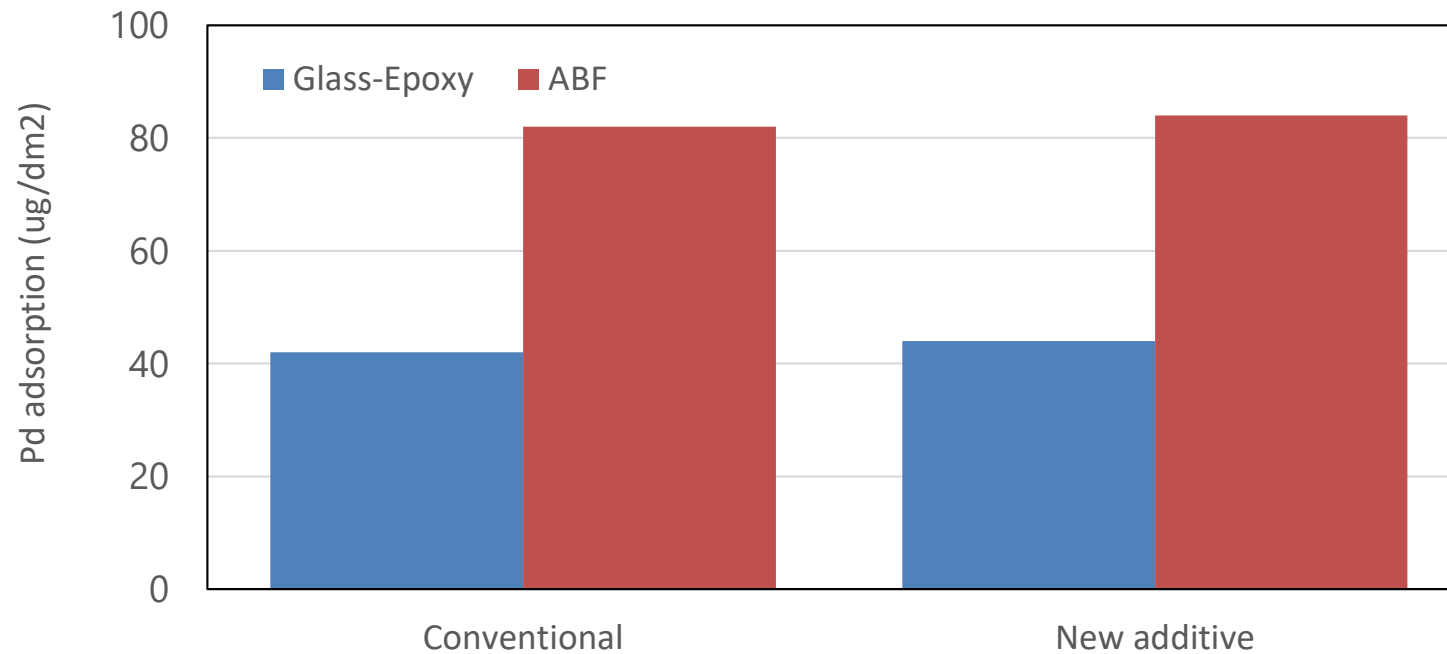
If base material is changed in response to densification, we can produce high-performance substrates with low costs through plating process.



# Reduction in Pd consumption at electroless copper plating process for package substrates



We developed a process. By adding additives for aid cleaning treatment before activator treatment, we can reduce Pd concentration at activator bath from **200 mg/L to 50 mg/L (75% reduction)**.

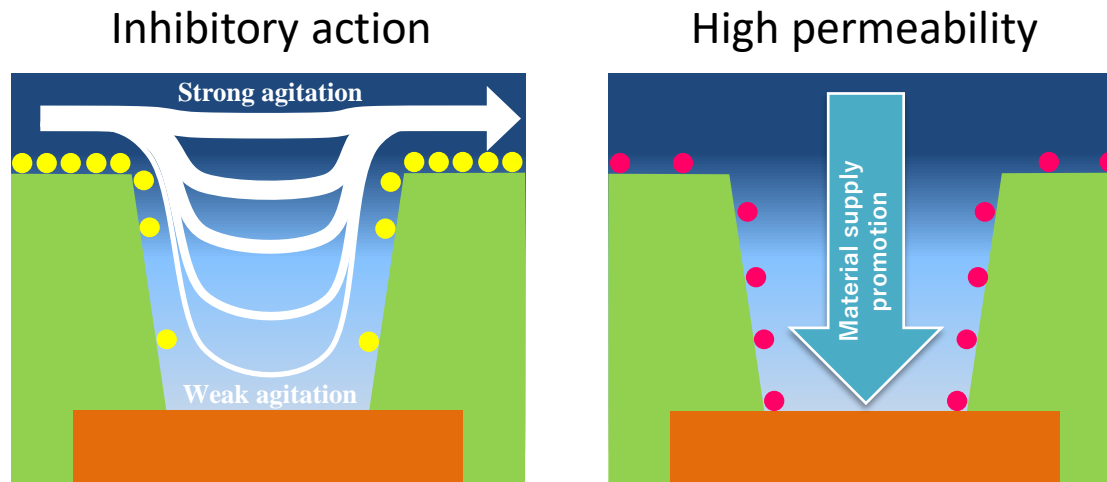


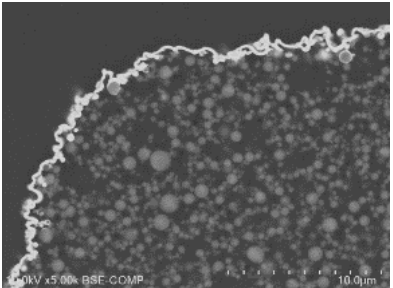
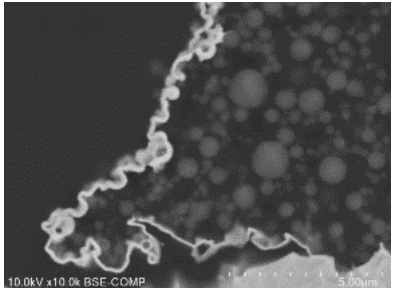
Reducing Pd concentration is no problem for cohesion and reliability because absorption amount does not change.



# Electroless copper plating bath with low stress for next generation package substrates

We have developed electroless copper plating bath  
Thereby, at **0.2  $\mu\text{m}$  or less plating film** of high-  
density pattern formation, we can produce **small  
diameter vias with better throwing power** and  
**good film thickness distribution within the surface.**



Thickness	30 $\mu\text{m}\Phi$ /35 $\mu\text{mh}$
Surface (x5,000)	0.199 $\mu\text{m}$ 
BVH Bottom (x10,000)	0.154 $\mu\text{m}$ 
Throwing power	77%

We have achieved a good throwing power through inhibitory action and high permeability of additives.

# Expansion of domestic semiconductor and participation in the NEDO project

## JOINT2 consortium



At METI home page

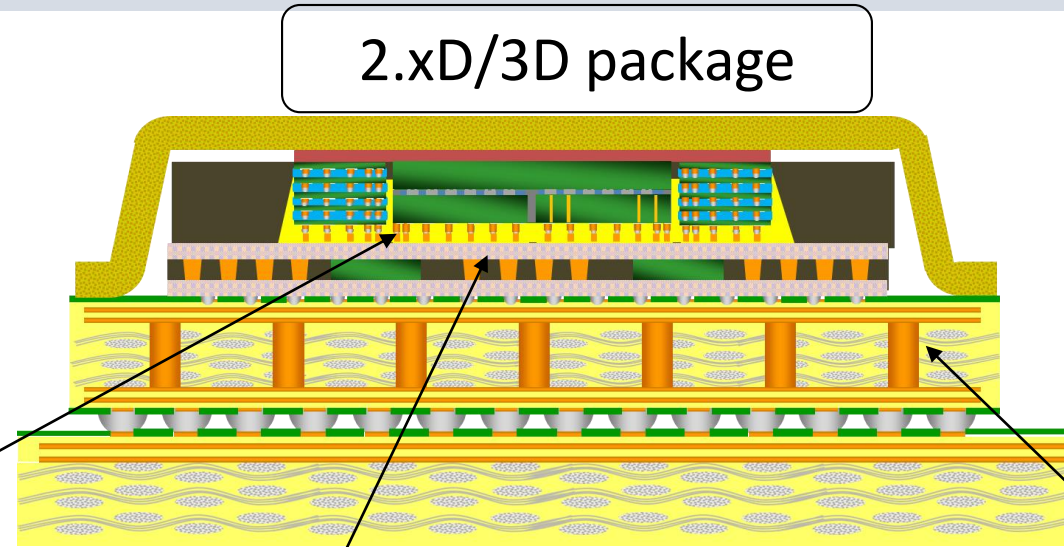
“Post 5G research and development project to improve information communication system platform / Development of advanced semiconductor manufacture technology (subsidized)” Adoption list are excerpts from 20210531002-1.pdf

<https://www.meti.go.jp/press/2021/05/20210531002/20210531002.html>

## List of Results of Adoption for Project for Research and Development of Enhanced Infrastructures for Post-5G Information and Communications Systems: R&D Item (2) Developing Technologies for Manufacturing Leading-Edge Semiconductors

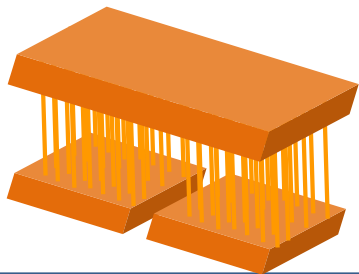
	Development theme	Implementation structure (plan)
1	(b1) Packaging Technology for High Performance Computing	<b>TSMC Japan 3DIC R&amp;D Center, Inc.</b> (Joint implementation partners, sub-contractors, etc.) National Institute of Advanced Industrial Science and Technology (AST), IBIDEN CO., LTD., and numerous other materials and manufacturing equipment manufacturers, as well as universities and research institutes in Japan (See Summary of Adopted Themes for the name of companies and institutions)
2	(b2) Packaging Technology for Edge Computing	<b>Research Association for Advanced Systems (RaaS)</b> (Joint implementation partners, Association members, etc.) National Institute of Advanced Industrial Science and Technology (AST), SCREEN Holdings Co., Ltd., DAIKIN INDUSTRIES, LTD., FUJIFILM Corporation, Panasonic Smart Factory Solutions Co., Ltd., the University of Tokyo
3		<b>Sony Semiconductor Solutions Corporation</b>
4	(b3) Common Platform Technology for Packaging	<b>Showa Denko Materials Co., Ltd.</b> (Joint implementation partners, sub-contractors, etc.) Ajinomoto Fine-Techno Co., Inc., <b>C. Uyemura &amp; Co.</b> , EBARA CORPORATION, SHINKAWA LTD., SHINKO ELECTRIC INDUSTRIES CO., LTD., Dai Nippon Printing Co., Ltd., DISCO Corporation, TOKYO OHKA KOGYO CO., LTD., TOWA CORPORATION, NAMICS CORPORATION, Panasonic Smart Factory Solutions Co., Ltd., Yamaha Robotics Holdings Co., Ltd.
5		<b>Sumitomo Bakelite Co., Ltd.</b>

# JOINT2 Consortium Technology Targets



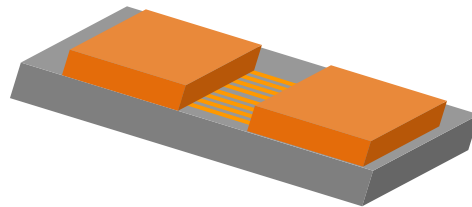
## Fine bump bonding

Vertical interconnect



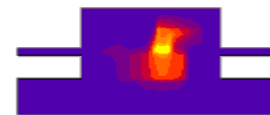
## Fine wiring technology

Lateral interconnect

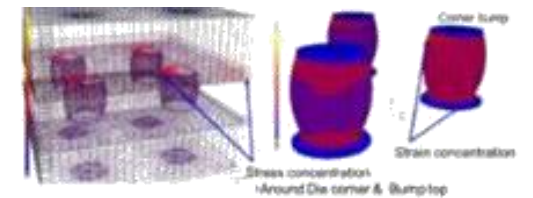


## Larger package with high reliability

Thermal management



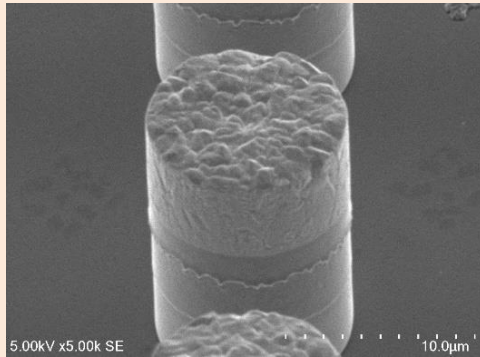
Stress management



# Uyemura's roles in the JOINT2 Consortium

## Fine bump bonding

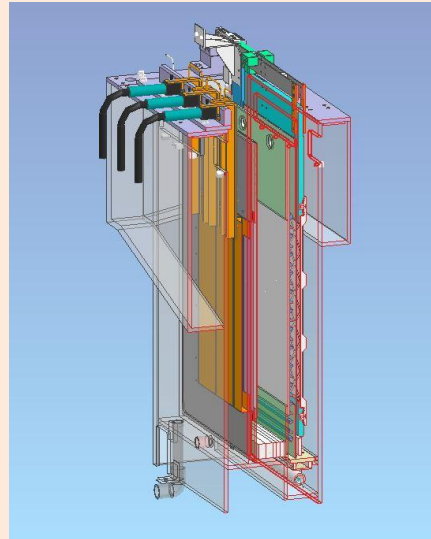
Development of electrolytic plating solution for fine bump bonding



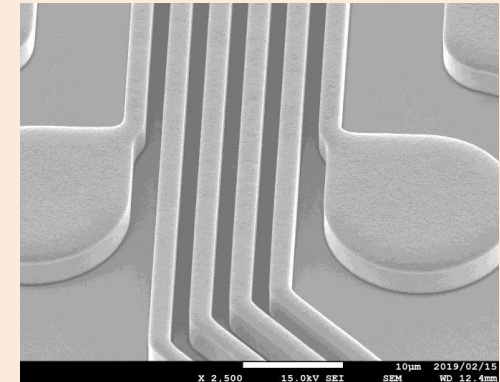
Electrolytic CU/Ni/SnAg plating  
(Bump diameter: 10µm)

## Fine wiring

Development of electrolytic plating machinery for next generation package





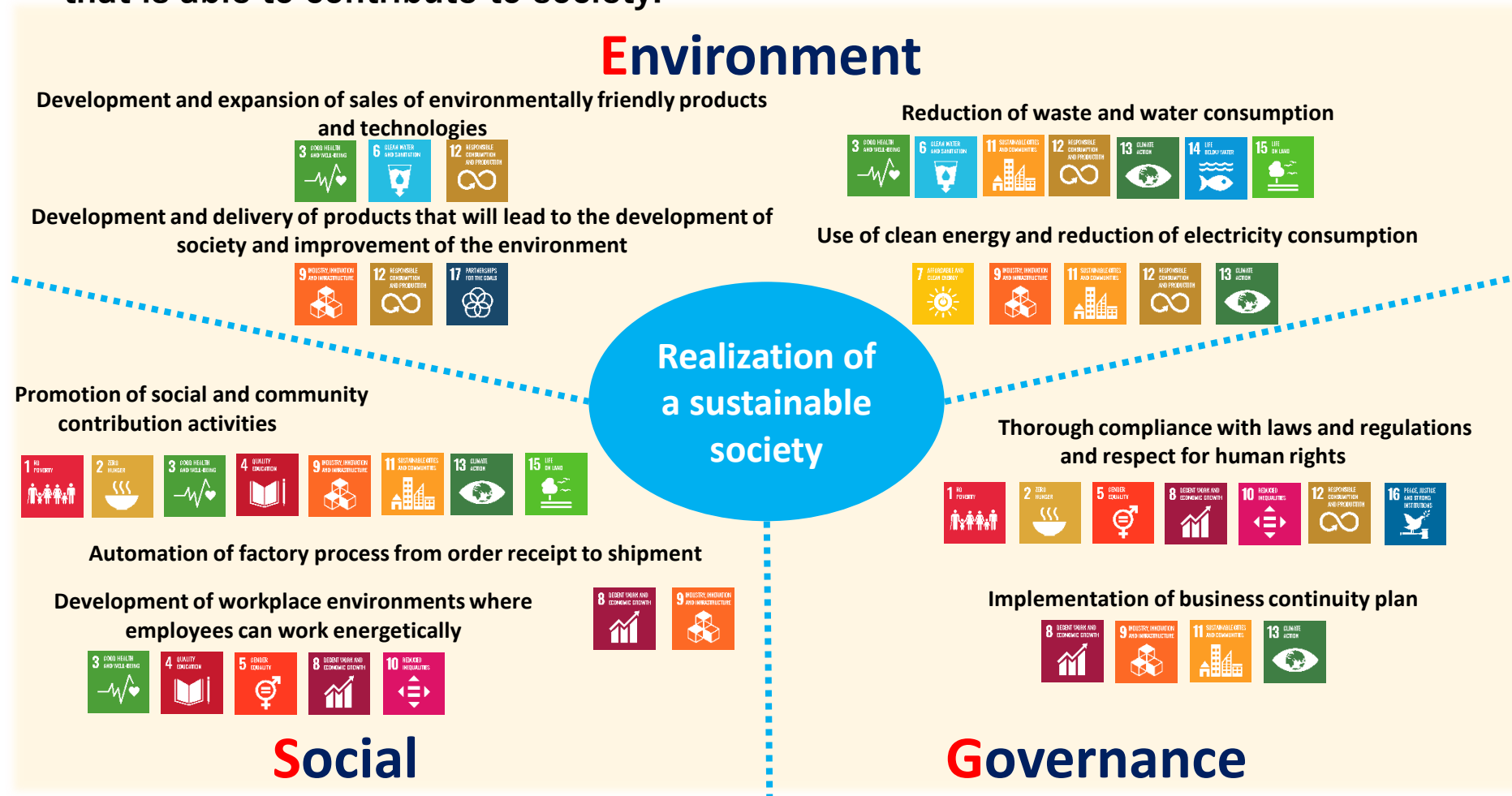
Development of electrolytic plating solution for fine wiring



Electrolytic copper plating  
(Wire width: 2µm)

# Initiatives related to ESG and SDGs

Under the Uyemura Group slogan “Growing together with  (  :You),” our aims are to grow and prosper together with our stakeholders and to be a company that is able to contribute to society.



# Environmentally Friendly Products: Proactive approach to SDGs

## 1. Pb-free plating bath

- Electroless Ni plating bath mainly for general bathes.
- Pb-free electro Sn plating bath, such as pure Sn and Sn-Ag bath for electronic parts

## 2. Cyan-free bath

- **Electroless Au plating bath with no supply of cyanide-free and free cyanide** for wafers and electronic parts.

## 3. Desmear-free process

- Process without the use of dangerous permanganate for substrates

## 4. Formalin-free bath and process without the use of formalin

- Direct plating on resins (without electroless Cu bath) for substrates
- Development of formalin-free electroless Cu bath for wafers

## 5. PFOS-free bath and PFOA-free bath

- PTFE composite plating mainly for automobile parts

## 6. Wastewater treatment

- **Plating solution recycle unit**



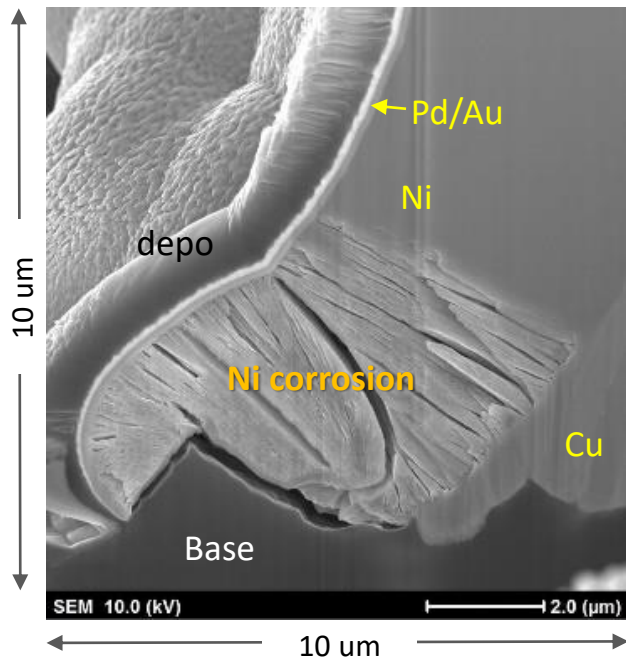
**Fulfill our responsibility as  
a manufacturer and a user**



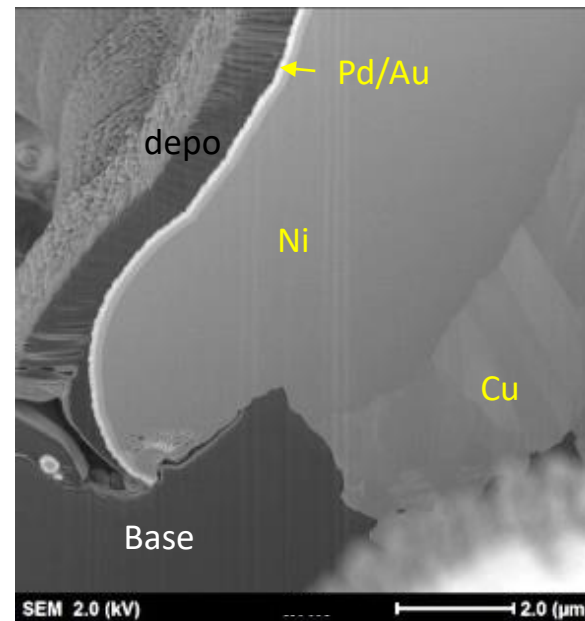


## Cross section observation comparing Ni corrosion

Conventional



New



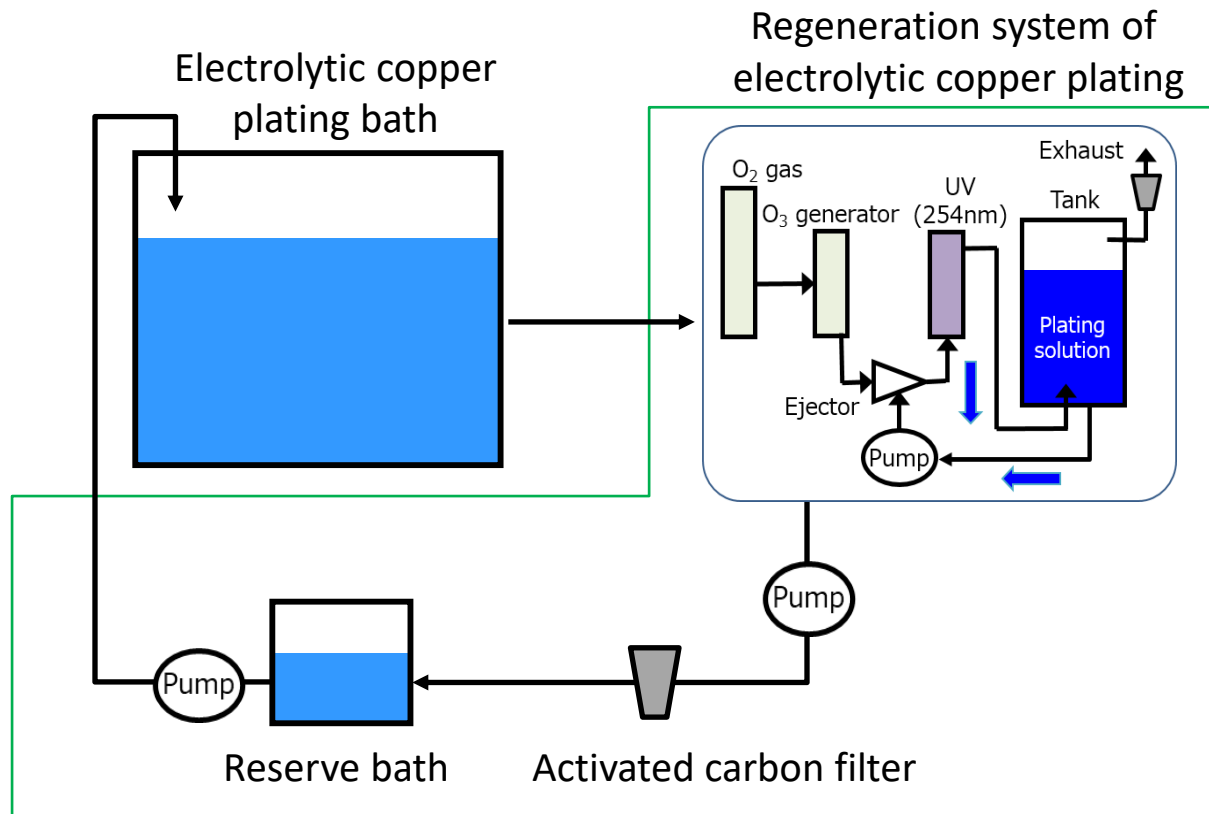
Generally, precious metal plating can have bath stability and good film performance with the use of free cyanide. At Electroless Ni/Pd/Au process of major final surface treatment, If we use electroless Au plating solution with no supply of free cyanide, Ni corrosion at the base is unavoidable.

→ Newly-developed bath can provide high-quality plating film with no supply of free cyanide.

# Reduction in wastewater through a recycle system of electrolytic copper plating bath



## Illustrative image of electrolytic copper plating regeneration system








































Electrolytic copper plating solution needs to be wasted all when a certain period passes. Because impurities hindering performance accumulate with aging. → Need to be renewed

For this problem, By repeating a process, “Treating part of plating solution with regeneration system” and “Returning the solution to a tank” and using treated solution, we can maintain the quality constant and theoretically **prolong the life of plating solution semi-permanently.**



# Uyemura Group Companies

Company name	Foundation	Location	Business
C.Uyemura & Co., Ltd.	1848 (Establishment) 1933 (Incorporated)	Japan	    
Sumix Corporation	1963	Japan	
Uyemura International Corporation	1985	US	  
Uyemura International (Hong Kong) Co., Ltd.	1986	China (Hong Kong)	
Taiwan Uyemura Co., Ltd.	1987	Taiwan	    
Sum Hitechs Co., Ltd.	1987	Thailand	   
Uyemura (Shenzhen) Co., Ltd.	1988	China (Shenzhen)	   
Uyemura International (Singapore) Pte Ltd	1992	Singapore	
Uyemura (Malaysia) Sdn. Bhd.	1996	Malaysia	 
Uyemura (Shanghai) Co., Ltd.	2002	China (Shanghai)	
Uyemura Korea Co., Ltd.	2010	Korea	 
PT.Uyemura Indonesia	2012	Indonesia	 

 Sales
 R&D
 Chemical Production
 Machinery Production
 Plating Job
 Real Estate Rental

Forecasts of future performance in this report are based on assumptions judged to be valid and information currently available to the Company, but are not promises by the Company regarding future performance. Actual results are affected by various factors and may differ substantially.

# Growing together with



## Uyemura Group Companies

• Japan	C.Uyemura & Co., Ltd. Sumix Corporation	• Taiwan	Taiwan Uyemura Co., Ltd.
• USA	Uyemura International Corporation	• Korea	Uyemura Korea Co., Ltd.
• Hong Kong	Uyemura International (Hong Kong) Co., Ltd.	• Singapore	Uyemura International (Singapore) Pte Ltd
• Shenzhen	Uyemura (Shenzhen) Co., Ltd.	• Malaysia	Uyemura (Malaysia) Sdn. Bhd.
• Shanghai	Uyemura (Shanghai) Co., Ltd.	• Thailand	Sum Hitechs Co., Ltd.
		• Indonesia	PT. Uyemura Indonesia