

Financial Results for 3Q(Nine months) of FYE 3/2022

February 10th, 2022
STELLA CHEMIFA CORPORATION
Securities code: 4109

【Financial Results】

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【Reference Material】

(Corporate Profile • Introduction of Our Business)

- Corporate Profile P. 17
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- Introduction of Our Business P. 19 – 35

[3Q (Nine months) of FYE 3/2022 Results]

- ◆ Both domestic and overseas sales of Semiconductors and LCDs increased year on year.
- ◆ The price of anhydrous hydrofluoric acid(AHF), a key raw material, rose year on year.
- ◆ Profit from sales of affiliate shares through transfer of shares in FECT CO., LTD. (an equity method affiliate) was recorded.

[Full-year Forecast]

- ◆ The business environment is solid, particularly for Semiconductors and LCDs.
- ◆ We will keep a close eye on the impacts that uncertain factors, including price trends of AHF, have on our performance.

Financial Summary



Though the revenue recognition standard has been adopted from FYE3/2022, this standard was not applied to FYE3/2021. *The same also applies to pages 5 to 8.

(million yen)	3Q (Nine months) of FYE 3/2021	3Q (Nine months) of FYE 3/2022	Increase/ Decrease	Percentage Increase/ Decrease
Sales Revenue	24,927	27,124	2,197	8.8
Gross Profit	6,022	6,717	694	11.5
Operating Profit	2,902	3,520	618	21.3
Ordinary Profit	2,763	3,936	1,172	42.4
Quarterly Profit Attributable to Owners of Parent	1,975	3,159	1,183	59.9
Earnings Per Share (yen)	153.99	248.02		
Capital Expenditures	1,245	1,979	733	58.9
Depreciation & Amortization	2,296	2,012	-283	-12.4
Research & Development Expenses	587	534	-52	-8.9

Sales Revenue and Operating Profit by Business Segment

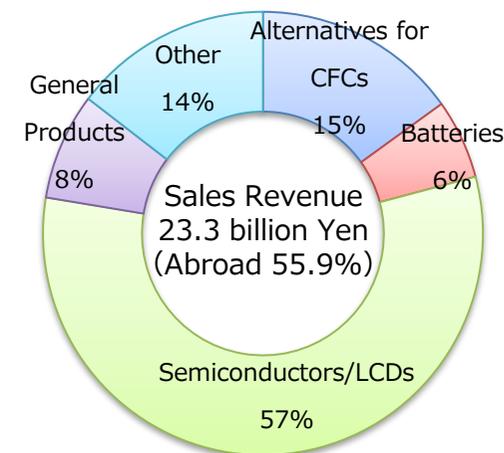


(million yen)	Sales Revenue				Operating Profit			
	3Q (Nine months) of FYE 3/2021	3Q (Nine months) of FYE 3/2022	Increase/ Decrease		3Q (Nine months) of FYE3/2021	3Q (Nine months) of FYE3/2022	Increase/ Decrease	
			Amount	%			Amount	%
High-Purity Chemical Business	21,619	23,399	1,779	8.2	3,041	3,658	617	20.3
Transportation Business	2,985	3,515	530	17.8	421	606	184	43.9
Medical Business	155	84	-71	-45.7	-482	-511	-28	-
Other	166	124	-41	-25.2	17	13	-3	-21.4
Eliminations and Corporate	-	-	-	-	-94	-246	-152	-
Total	24,927	27,124	2,197	8.8	2,902	3,520	618	21.3

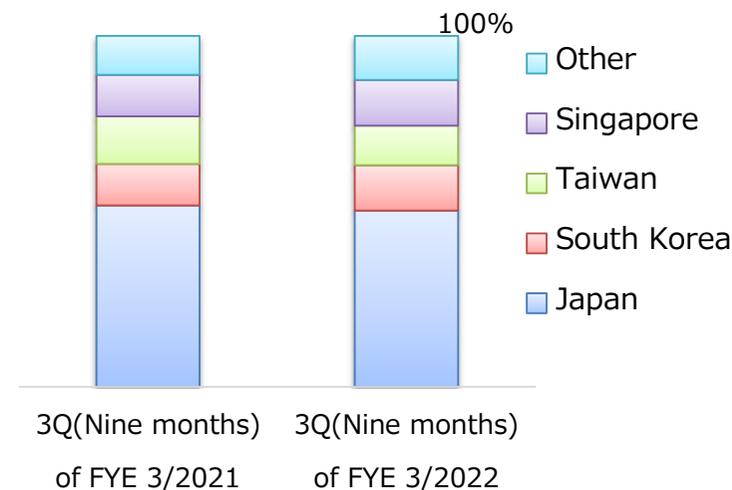
Sales Revenue of High-Purity Chemical Business (Breakdown)

(million yen)	3Q (Nine months) of FYE 3/2021	3Q (Nine months) of FYE 3/2022	Increase/ Decrease	Percentage Increase/ Decrease
Surface Treatment	722	656	-66	-9.2
Alternatives for CFCs	3,324	3,527	202	6.1
Batteries	1,659	1,357	-302	-18.2
Semiconductors/ LCDs	12,214	13,272	1,058	8.7
Semiconductor Devices	519	606	87	16.9
Catalysts	634	708	74	11.7
Gypsum	146	110	-35	-24.3
General Products	1,688	1,825	136	8.1
Other	709	1,333	624	88.0
Total	21,619	23,399	1,779	8.2

Sales Revenue Constituent Ratio of High-Purity Chemicals

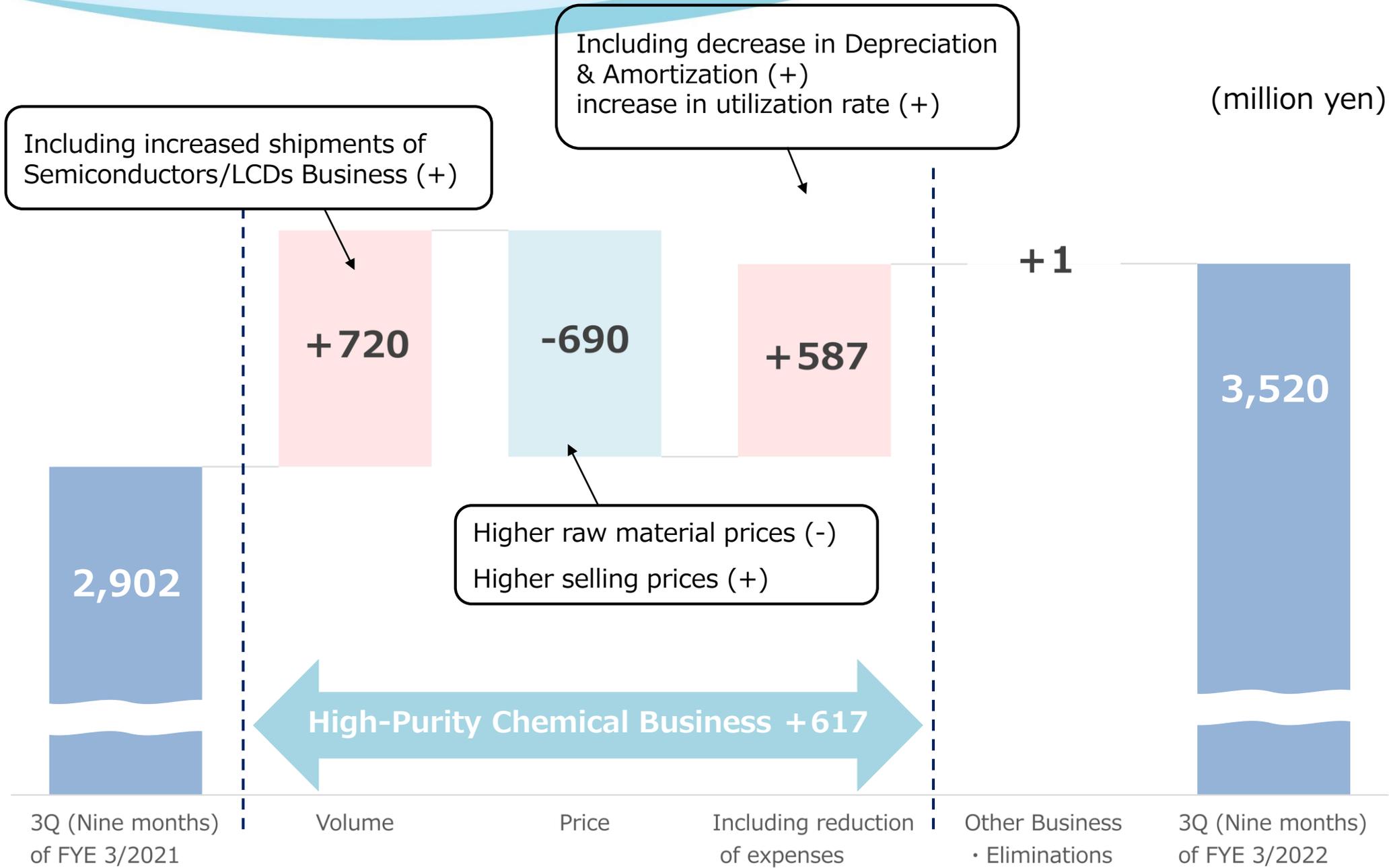


Semiconductors/LCDs Shipping Ratio by Country

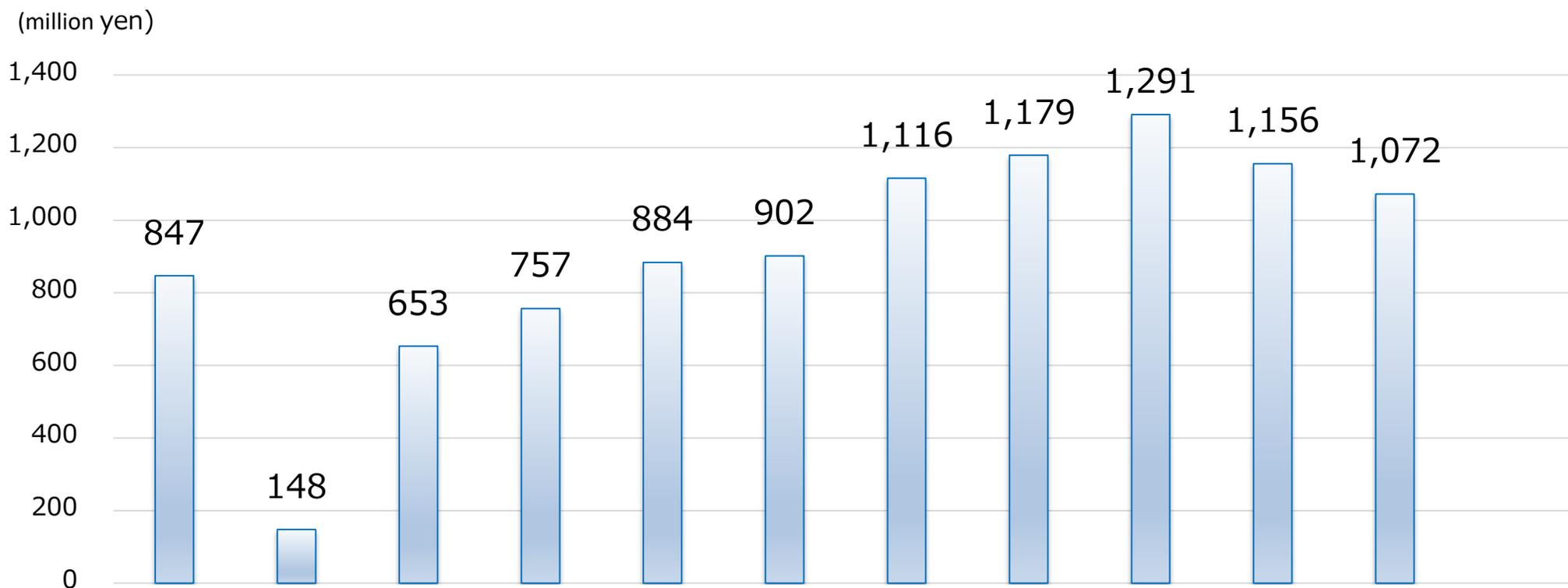


Analysis of Operating Profit (Year on year)

(million yen)



Change of Quarterly Operating Profit

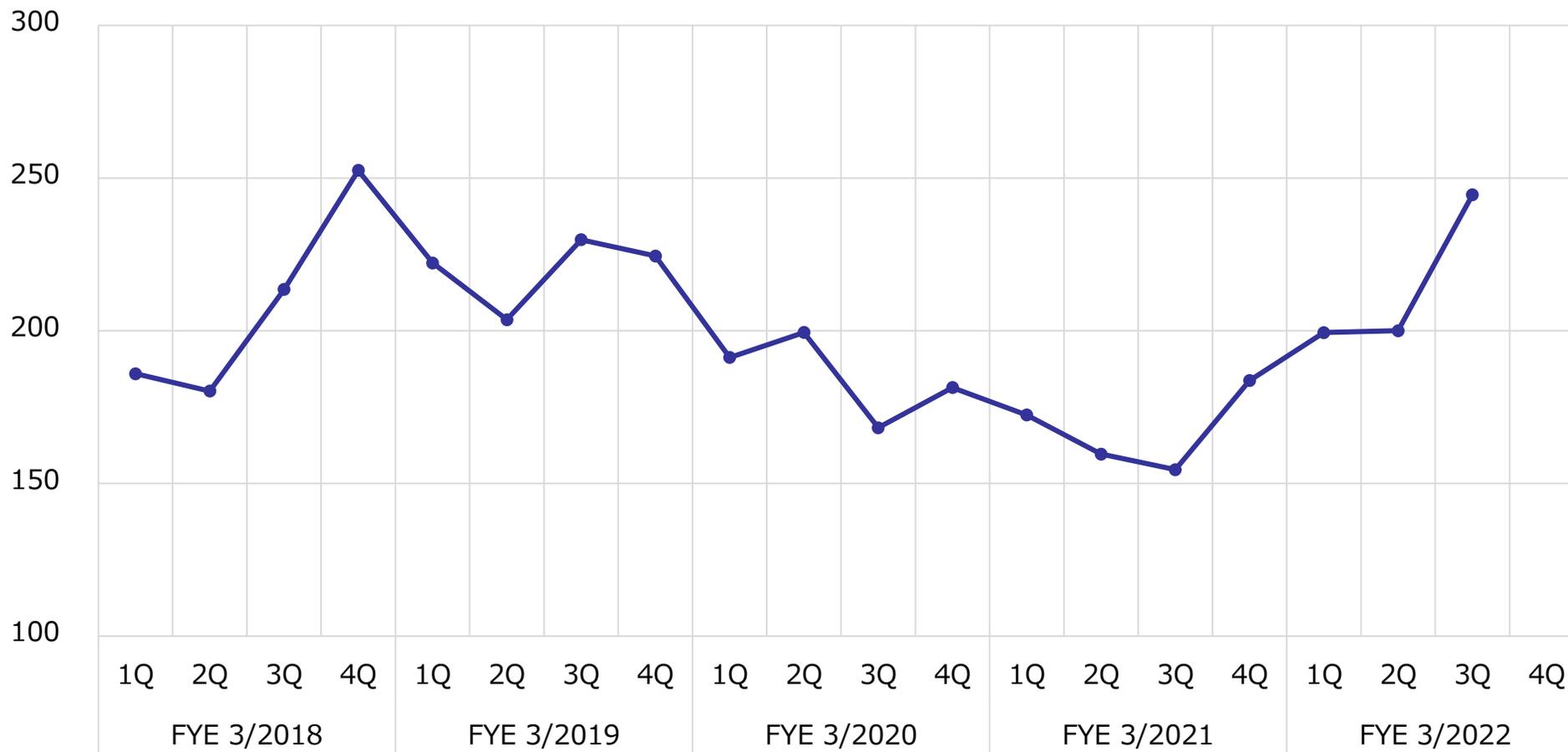


	FYE 3/2020				FYE 3/2021				FYE 3/2022			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Sales Revenue	9,733	7,406	7,591	8,998	8,222	8,389	8,315	7,965	8,896	9,212	9,015	
Operating Profit	847	148	653	757	884	902	1,116	1,179	1,291	1,156	1,072	
Operating Profit Margin	8.7%	2.0%	8.6%	8.4%	10.8%	10.8%	13.4%	14.8%	14.5%	12.5%	11.9%	

Transitions in Trade Statistics Value of Anhydrous Hydrofluoric Acid(AHF)



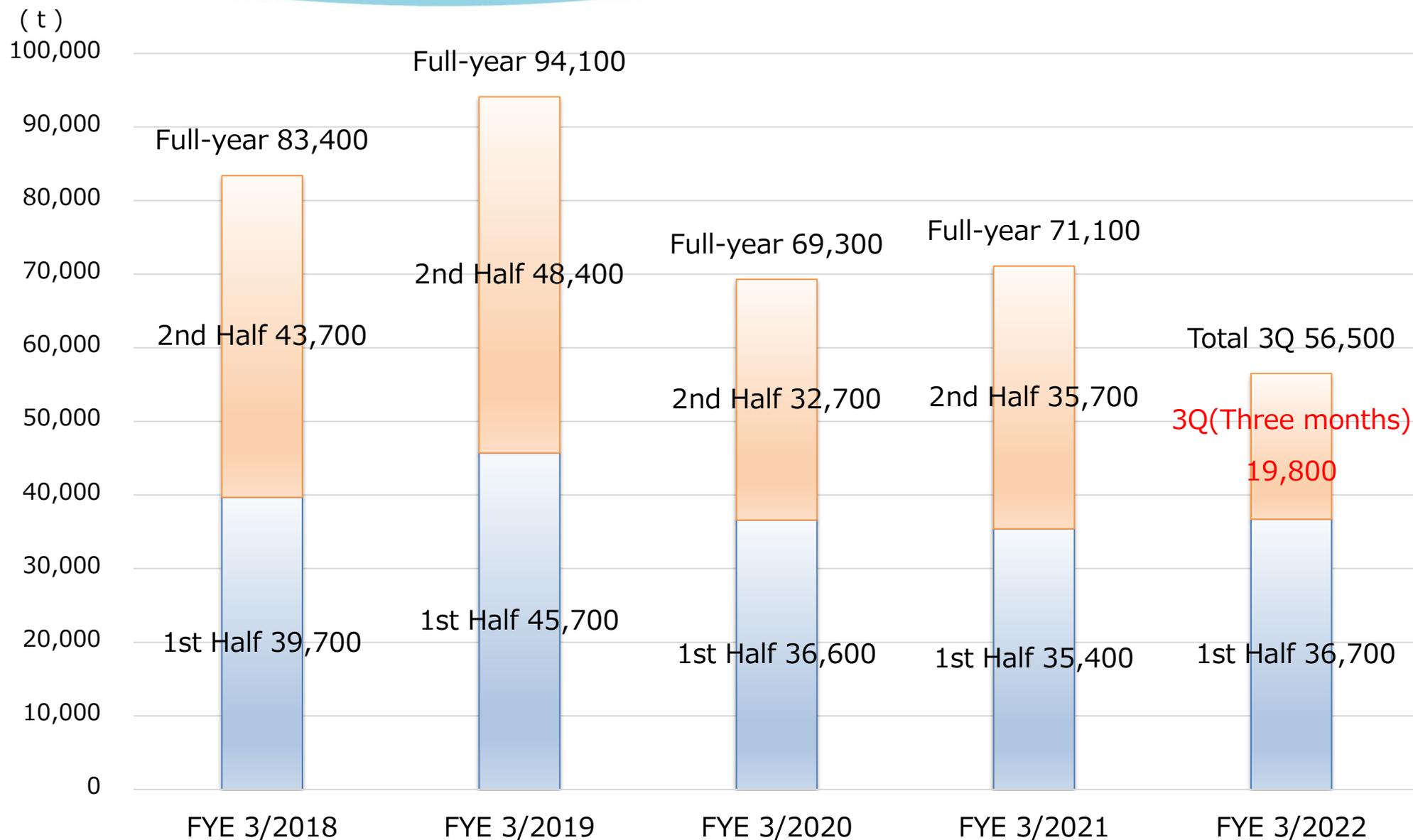
(yen/kg)



(yen/kg)	FYE 3/2018	FYE 3/2019	FYE 3/2020	FYE 3/2021	FYE 3/2022
Average Price	209	220	186	168	214

Source: Prepared by our company based on the Ministry of Finance's "Trade Statistics of Japan" (<http://www.customs.go.jp/toukei/info/>)

Change of Shipping Volume of High-Purity Hydrofluoric Acid (Semiconductors and LCDs)



Balance Sheet



(million yen)	FYE 3/2021 End-of-Year	Dec.31,2021	Increase/ Decrease	Percentage Increase/ Decrease
Assets	52,933	57,092	4,159	7.9
Cash and deposits	15,568	16,458	889	5.7
Operating receivables	8,483	9,704	1,221	14.4
Inventory assets	4,872	5,945	1,073	22.0
Property, plant, and equipment	21,564	21,673	109	0.5
Intangible assets	516	415	-100	-19.5
Liabilities	16,175	14,930	-1,245	-7.7
Operating liabilities	3,026	3,543	517	17.1
Interest-bearing liabilities	8,862	7,367	-1,494	-16.9
Net Assets	36,758	42,162	5,404	14.7
Equity capital	36,220	39,890	3,669	10.1
Liabilities and Net Assets	52,933	57,092	4,159	7.9

Financial Forecast



In line with the adoption of the revenue recognition standard from FYE3/2022, actual results for FYE3/2021 were calculated based on the assumption that the revenue recognition standard was applied to FYE3/2021. *The same also applies to pages 13 and 14.

(million yen)	FYE 3/2021 Actual	FYE 3/2022 Forecast	Increase/ Decrease	Percentage Increase/ Decrease
Sales Revenue	32,561	33,000	438	1.3
Operating Profit	4,081	4,000	-81	-2.0
Ordinary Profit	4,020	4,000	-20	-0.5
Profit Attributable to Owners of Parent	2,959	3,000	40	1.4

Earnings Per Share (yen)	230.70	233.88
Dividend (yen)	47	50
ROE (%)	8.4	7.9

Capital Expenditures	1,818	1,920	101	5.6
Depreciation & Amortization	3,039	2,760	-279	-9.2
Research & Development Expenses	793	880	86	10.9

Forecast on Sales Revenue and Operating Profit by Business Segment



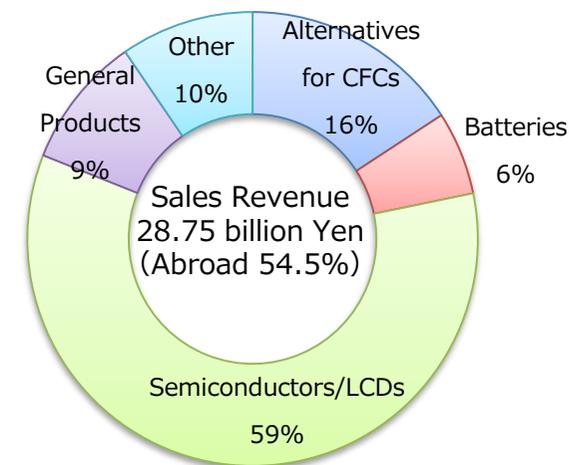
(million yen)	Sales Revenue				Operating Profit			
	FYE 3/2021 Actual	FYE 3/2022 Forecast	Increase/ Decrease		FYE 3/2021 Actual	FYE 3/2022 Forecast	Increase/ Decrease	
			Amount	%			Amount	%
High-Purity Chemical Business	28,073	28,750	676	2.4	4,201	4,450	248	5.9
Transportation Business	4,069	3,820	-249	-6.1	593	500	-93	-15.8
Medical Business	205	220	14	6.8	-644	-740	-95	-
Other	213	210	-3	-1.5	26	30	3	11.7
Eliminations and Corporate	-	-	-	-	-95	-240	-144	-
Total	32,561	33,000	438	1.3	4,081	4,000	-81	-2.0

Forecast on Sales Revenue of High-Purity Chemical Business (Breakdown)

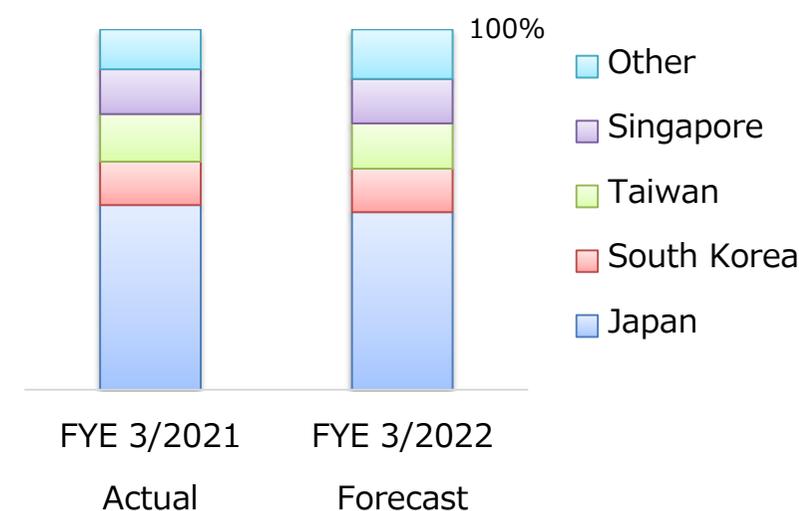


(million yen)	FYE 3/2021 Actual	FYE 3/2022 Forecast	Increase/Decrease	Percentage Increase/Decrease
Surface Treatment	947	560	-387	-40.9
Alternatives for CFCs	4,099	4,550	450	11.0
Batteries	2,364	1,710	-654	-27.7
Semiconductors/LCDs	16,283	17,030	746	4.6
Semiconductor Devices	696	630	-66	-9.5
Catalysts	852	970	117	13.8
Gypsum	175	140	-35	-20.2
General Products	2,067	2,710	642	31.1
Other	587	450	-137	-23.4
Total	28,073	28,750	676	2.4

Sales Revenue Constituent Ratio of High-Purity Chemicals



Semiconductors/LCDs Shipping Ratio by Country



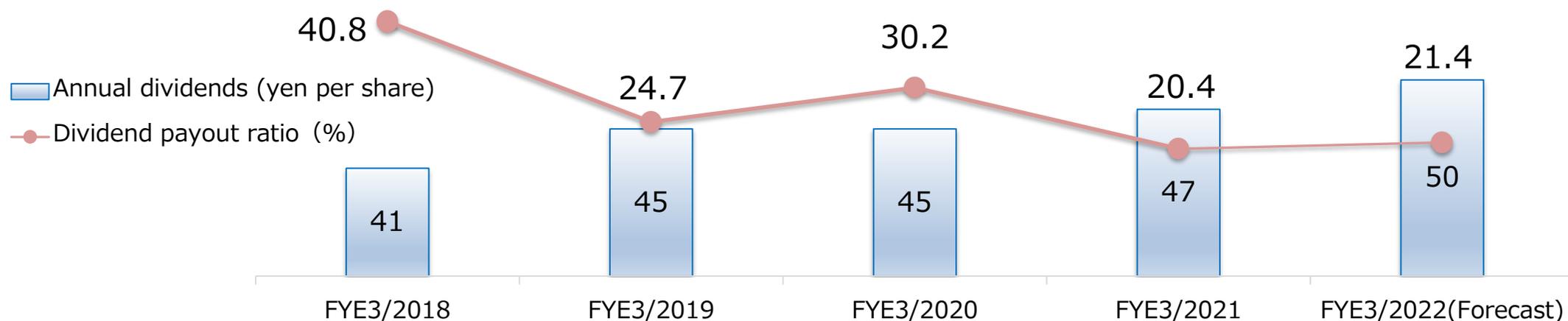
Shareholder Return



Stella Chemifa's basic policy is to provide stable and continuous dividend payments, giving comprehensive consideration to factors including its financial condition and profit level. Retained earnings will be allocated to capital investment and R&D investment, and will be proactively utilized for future business development to enhance corporate value.

- ◆ FYE 3/2021
 - Annual dividend: 47 yen per share
 - The Company repurchased 100,000 of its own shares, worth 260 million yen.

- ◆ FYE 3/2022
 - Annual dividend forecast: 50 yen per share (3 yen increase compared to FYE 3/2021)
 - The Company repurchased 300,000 of its own shares, worth 840 million yen from October to November 2021



Reference Material

(Corporate Profile • Introduction of Our Business)

Corporate Profile



(as of December 31, 2021)

Corporate Name	STELLA CHEMIFA CORPORATION	
Head Office	Meiji Yasuda Seimei Osaka Midosuji Bldg. 10F, 4-1-1 Fushimi-machi, Chuo-ku, Osaka City, Osaka	
Founded/Established	February 1916 / February 1944	
Capital Fund	4,829,782,512 yen	
Representatives	Representative Director, President and Chief Executive Officer: Aki Hashimoto Representative Director, Senior Managing Director (Products Management Group): Kiyonori Saka	
U R L	https://www.stella-chemifa.co.jp/english/	
Number of Employees	291	
Sales Department	Osaka Sales Department (Chuo-ku, Osaka city, Osaka) Tokyo Sales Department (Chiyoda-ku, Tokyo)	
F a c t o r y	Sanpo Factory (Sakai-ku, Sakai City, Osaka) Izumi Factory (Izumiotu City, Osaka) Kitakyushu Factory (Yahatanishi-ku, Kitakyushu City, Fukuoka)	

At home (3 companies)

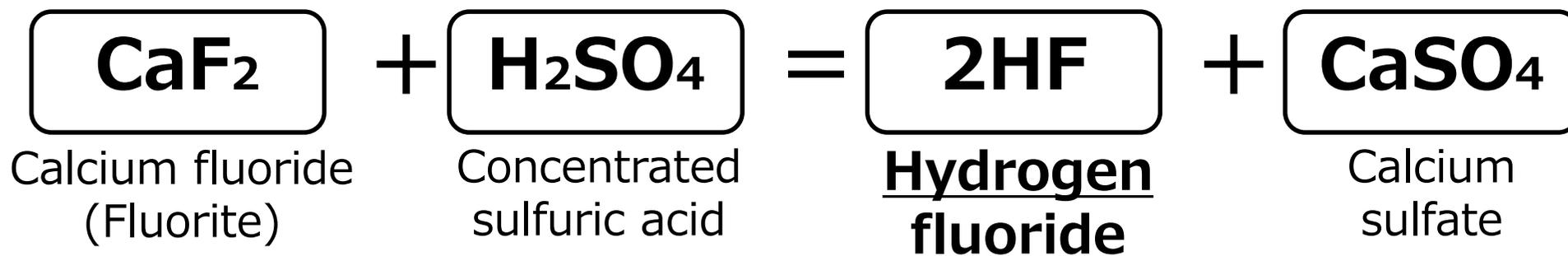
Transportation Business	BLUE EXPRESS, Inc.	Sakai-ku, Sakai City, Osaka
Other Business	BLUE AUTO TRUST Co., Ltd.	Sakai-ku, Sakai City, Osaka
Medical Business	STELLA PHARMA CORPORATION	Chuo-ku, Osaka city, Osaka

Abroad (7 companies)

High-Purity Chemical Business	STELLA CHEMIFA SINGAPORE PTE LTD	Singapore
Transportation Business	STELLA EXPRESS (Singapore) PTE LTD	Singapore
High-Purity Chemical Business	Blue Express (Shanghai) International Trade Inc.	China
Transportation Business	Blue Express (Shanghai) International Freight Forwarding Co., Ltd.	China
High-Purity Chemical Business	Zhejiang Blue Star Chemical Co., Ltd.	China
High-Purity Chemical Business	FECT CO.,LTD*	South Korea
High-Purity Chemical Business	Quzhou BDX New Chemical Materials Co., Ltd.	China

*On December 15, 2021, we transferred our shares in FECT CO., LTD. to Soulbrain Co., Ltd. We will continue selling in the South Korean market in cooperation with Soulbrain.

Manufacture and applications of hydrogen fluoride



* There are five main grades of fluorite purity, and for semiconductor applications, high quality fluorite with a purity of 97% or higher is required.

↓
Concrete materials, etc.

Reaction and refinement using our proprietary technology

Treatment of surface such as stainless steel

Raw materials such as alternatives for CFCs

Etching agent for semiconductor liquid crystals

Materials for lithium-ion secondary batteries

Camera lens materials for semiconductor manufacturing equipment

Reaction catalyst
Other products

High-Purity Chemical Business

Surface Treatment	Manufacture and sale of chemicals used for acid cleaning of stainless steel and slimming of LCD panels
Alternatives for CFCs	Manufacture and sale of hydrofluoric anhydride, raw materials for CFCs and fluoropolymers
B a t t e r i e s	Manufacture and sale of additives to improve the performance of lithium-ion secondary batteries
Semiconductors/LCDs	Manufacture and sale of chemicals for etching and cleaning in the semiconductor and LCD panel manufacturing processes
Semiconductor Devices	Manufacture and sale of raw materials for camera and stepper lenses, tantalum production aids for tantalum capacitors, etc.
C a t a l y s t s	Manufacture and sale of a range of chemicals and catalysts for the manufacture of pharmaceutical intermediates, etc.
G y p s u m	Sale as raw material for concrete, etc. (Byproduct of hydrofluoric acid production)
General Products	Manufacture and sale of Enriched Boron (Boron-10) , fluorine compounds for toothpaste, etc.
O t h e r	Sales of purchased goods, etc.

Introduction of Our Business

- Semiconductors/LCDs -



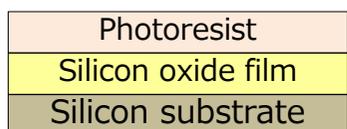
Ultra-High Purification Technology

- Impurity levels of less than 1 ppt (1×10^{-12}) are controlled by ultra-purification and ultra-cleaning technologies
- Mass production of ultra-pure chemicals for ultra-high integrated circuit

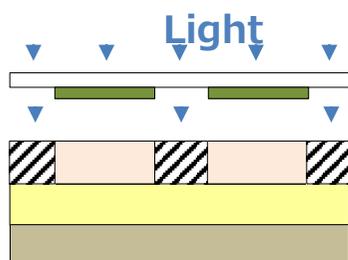
<p>Ultra High Purity Hydrofluoric Acid</p>	<ul style="list-style-type: none"> • Hydrofluoric acid (HF) is the only chemical capable of etching out silicon oxide film • Chemical solutions are indispensable to the semiconductor manufacturing process and require ultra-high purity • In particular, dilute hydrofluoric acid is used in a number of semiconductor processes
<p>Ultra High Purity Buffered Hydrofluoric Acid</p>	<ul style="list-style-type: none"> • Mixed aqueous solution of hydrofluoric acid (HF) and ammonium fluoride (NH_4F) • Mainly used in processes such as etching and cleaning of insulation films • Chemicals with etch rates ranging from tens of Å/min to thousands of Å/min can be produced

Example of Application (Photolithography Process)

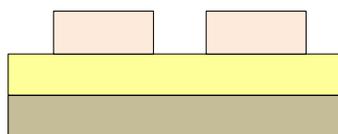
(1) Photoresist coating on silicon wafer (heat drying)



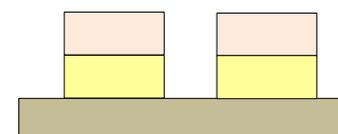
(2) Exposure



(3) Development



(4) Etching (Dissolve silicon oxide film with hydrofluoric acid chemicals)



(5) Photoresist stripping



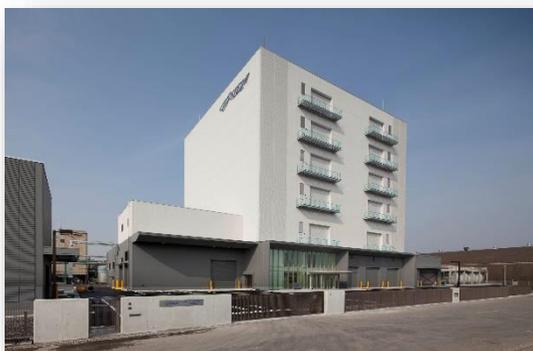
Introduction of Our Business

- Semiconductors/LCDs -



Production capacity of High Purity Hydrofluoric Acid for Semiconductors

Kitakyushu Factory



Kitakyushu City, Fukuoka

30,000 t /year

Sanpo Factory



Sakai City, Osaka

65,000 t /year

STELLA CHEMIFA
SINGAPORE



Singapore

10,000 t /year

105,000 t /year

* As a comprehensive manufacturer of fluorine compounds, we use our own technology to do everything from manufacturing to filling.

Introduction of Our Business

- Batteries -



Additives

- Additive for electrolytic solution to improve the performance of lithium-ion secondary batteries
- High-temperature endurance · High conductivity · Increased capacity · Low resistance · Flame retardance

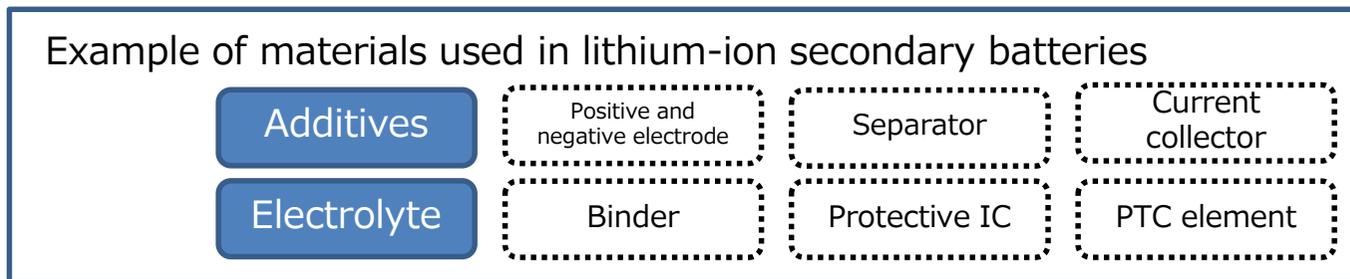
Lithium Hexafluorophosphate

- High-purity electrolytes for lithium-ion secondary batteries

* Manufacture and sale at our affiliate company in China (Quzhou BDX New Chemical Materials Co., Ltd.)



Izumi Factory's manufacturing building (Izumiotu City, Osaka)



Quzhou BDX New Chemical Materials Co., Ltd. (China)

Action on the Development of Materials for the Next-Generation Battery

[Metal-ion secondary batteries]

High-purity electrolytes for sodium-ion secondary batteries (sodium hexafluorophosphate)

[All-solid secondary batteries]

Fluoride materials for all solid-state batteries

[Fluoride-ion secondary batteries]

Fluoride-ion conductor material



Enrichment plant
(Izumiotu City, Osaka)

Enriched Boron (Boron-10) and its features

- Natural boron is made up of two isotopes, boron-10(20%) and boron-11(80%)
- Developed technology to enrich boron-10 to over 99%
- Established mass production technology of enriched boron for the first time in Japan(2000)
- Boron-10 has an extremely high capacity to absorb neutrons, and further enriching it can increase its ability to absorb neutrons.

Production capacity

Products		Production Capacity
Enriched Boron	^{10}B	6,000kg
Enriched Boric Acid	$\text{H}_3^{10}\text{BO}_3$	36,000kg
Enriched Potassium tetrafluoroborate	K^{10}BF_4	75,000kg

Applications of Enriched Boron Compounds

- Neutron-absorbing material of spent nuclear fuel transportation and storage containers
- Material of control rods of nuclear reactors and rack material of spent nuclear fuel pools
- Excess reaction control of pressurized-water reactors by dissolving into primary cooling water
- Water source for facilities responding to specific major accidents, etc.
- Raw material for cancer treatment drugs (BNCT: Boron Neutron Capture Therapy)

Advantages of Using Enriched Boric Acid

- (1) Improvement of corrosive environment in nuclear reactors
Required ^{10}B concentration can be secured at 1/5 of natural products.
Operation at low concentration is possible, and corrosion in facilities can be reduced.
- (2) Reduction of storage costs
Heating and heat retention are required to maintain the dissolution of boric acid water. Enriched boric acid realizes the reduction in concentration, and **reduces the problem of heat retention.**
In addition, the storage tank can be made smaller.
- (3) More reliable control
In the event of an emergency stop, **more reliable control is possible**, and since boric acid is harmful to the human body and the environment, the **reduction of overall amount of boric acid** is an advantage.

Tin Fluoride

- 2017
The GMP inspection by USFDA for tin fluoride, an active ingredient of OTC anticaries drugs, was completed, and obtained official approval.
- 2018
Started marketing of “tin fluoride” as a GMP-compliant product.



Izumi Factory's manufacturing building
(Izumiotu City, Osaka)



<Actions of fluorine on teeth>

- To suppress Streptococcus mutans from producing acid (Cavity prevention)
 - To promote tooth remineralization
 - To form acid-resistant teeth (to form fluorapatite)
- * We expect to see big demand mainly in Europe and the US, where there is strong interest in dental health and beauty.

* What is FDA?

FDA stands for Food and Drug Administration in the U.S.
(A public agency, similar in function to the Ministry of Health, Labour and Welfare in Japan)

* What is GMP?

It stands for “Good Manufacturing Practice”, which refers to a common standard for manufacturing and quality control of drugs and quasi-drugs.

Introduction of Our Business

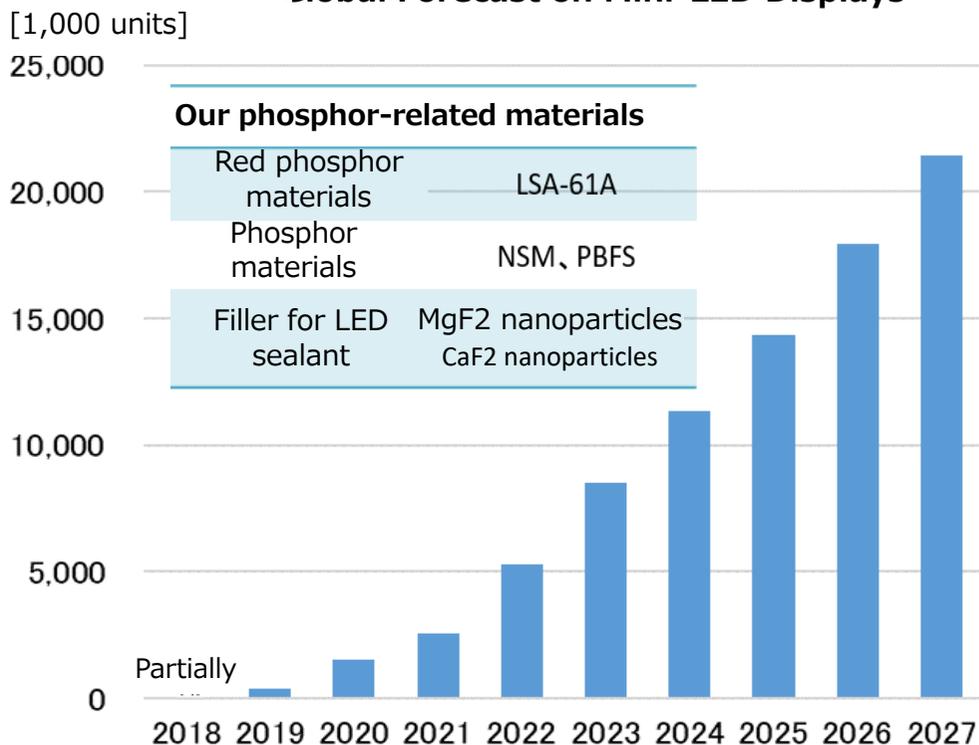
- New Initiatives -



Phosphor-related Materials

- Development of highly efficient and long-life fluoride phosphor materials using our core technologies
- Use of the materials is expected to increase in display applications such as mini-LED

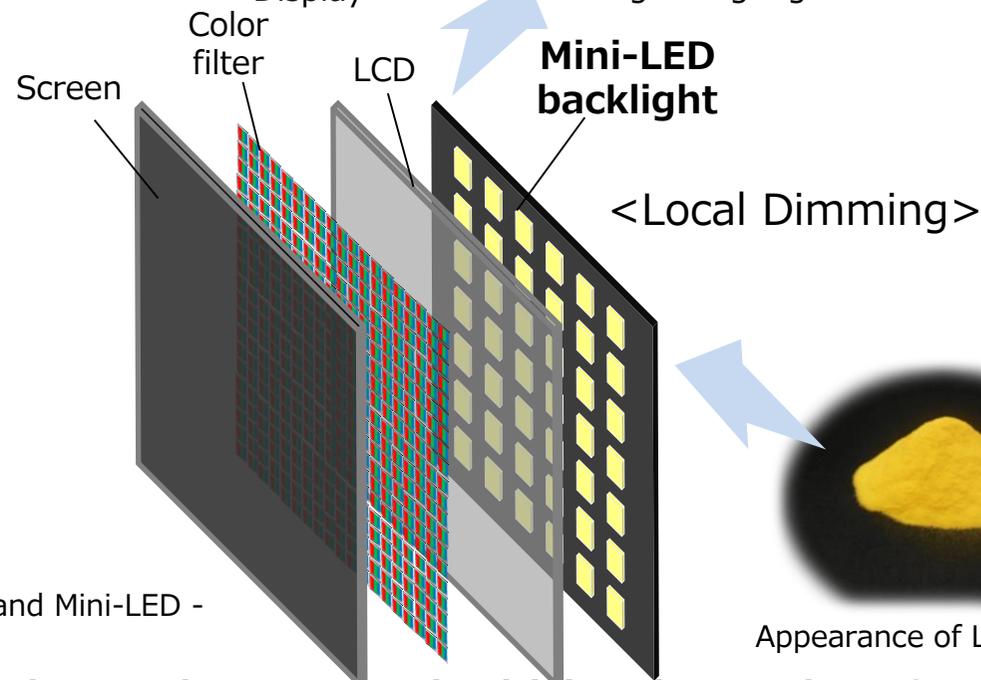
Global Forecast on Mini-LED Displays



Source: Yano Research Institute
2019 LED Display Market and Future Prospects - Focusing on Micro LED and Mini-LED -

Mini-LED is expected to be adopted for in-vehicle displays and meter panels, driving the number of mini-LED displays installed

Beyond the Chemical

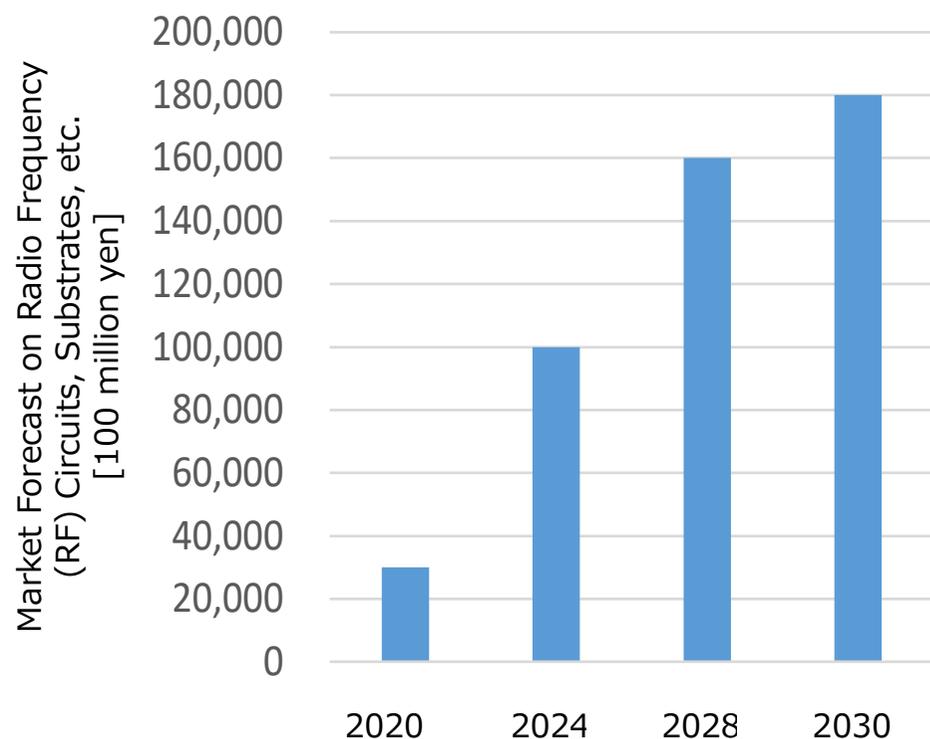


Introduction of Our Business

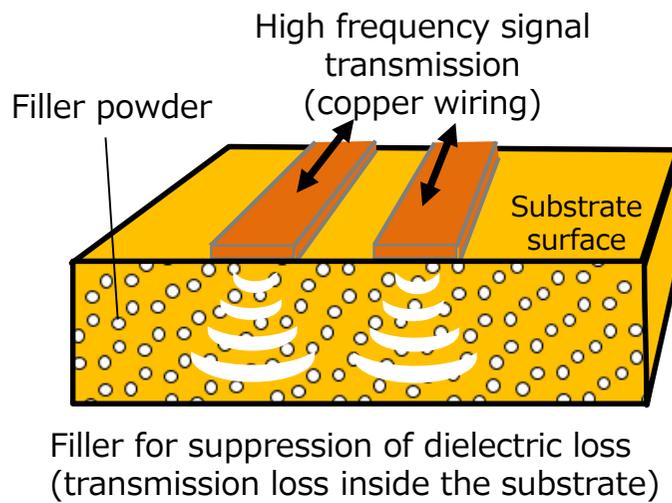
- New Initiatives -

PCB Materials (Low Dielectric Constant Materials)

- As materials for high-frequency communication devices, used as additives (fillers) to resin and other materials for substrates.
- Contribute to suppression of signal transmission loss, miniaturization of devices, and suppression of power consumption.



Source: Yano Research Institute
Market Forecast on 5G High-frequency Circuits, Substrates, etc.



Electronic substrate built in high-speed communication devices



Appearance of developed filler

Low dielectric constant
Low dielectric tangent

Introduction of Our Business

- Other product examples -



(Product information)

Optical Material-Related

- ◆ Calcium Fluoride
- ◆ Magnesium Fluoride
- ◆ Aluminum Fluoride
- ◆ Lead Fluoride
- ◆ Lithium Fluoride
- ◆ Strontium Fluoride
- ◆ Barium Fluoride

Reactive Catalyst-Related

- ◆ High Purity Boron Trifluoride
- ◆ Boron Trifluoride n-Butyl Ether
- ◆ Boron Trifluoride Monoethyl Amine
- ◆ Boron Trifluoride Diethyl Ether
- ◆ Boron Trifluoride Tetrahydrofuran
- ◆ Boron Trifluoride Piperidine
- ◆ Boron Trifluoride Dimethyl Ether
- ◆ Boron Trifluoride Phenol
- ◆ Triethylamine 3HF

Surface Treatment, Alternatives for CFCs-Related

- ◆ Anhydrous Hydrofluoric Acid
- ◆ 55% Hydrofluoric Acid

Nuclear Energy-Related

- ◆ ¹⁰B Enriched Potassium Fluoroborate
- ◆ ¹⁰B Enriched Boric Acid

Other Products

- ◆ Fluorosilicic Acid
- ◆ Copper Fluoroborate
- ◆ Potassium Fluoroborate
- ◆ Potassium Fluoride
- ◆ Potassium Hexafluorotitanate
- ◆ Potassium Fluorosilicate
- ◆ Lead Fluoroborate
- ◆ Ammonium Hydrogenfluoride
- ◆ Ammonium Fluoride
- ◆ Refined Calcium Fluoride
- ◆ Fluoroboric Acid
- ◆ Zinc Fluoroborate
- ◆ Potassium Hexafluorozirconate
- ◆ Potassium Hexafluorophosphate
- ◆ Tin Fluoroborate
- ◆ Sodium Fluoroborate
- ◆ Sodium Fluoride

Newly-Developed Products

- ◆ Detergents Contributing to Increase in Chemical Lifetime
- ◆ Detergents Suppressing Etching of Silicon Nitride Film
- ◆ Detergents Inhibiting Silicon and Polysilicon Damage
- ◆ Battery-Related (Ionic Liquids, Electrolytes for Sodium Ion Batteries - Sodium Hexafluorophosphate, Additives for Lithium-Ion Batteries,)
- ◆ Various Fluoride Nanoparticles Dispersant (Magnesium, Lithium, Ytterbium, Calcium, CNP-P)
- ◆ Phosphor materials
- ◆ Nuclear Energy Industry
- ◆ 5G/6G (Information Communication Systems), Printed Circuit Board
- ◆ Special-Purpose Inorganic Fluorine Compounds
- ◆ Fluorinated Carbon Nano-Tubes

Introduction of Our Business

くらしのなかの

ステラケミファ



* For details, please visit the website.

街のなかでもステラケミファ



家のなかでもステラケミファ



病院のなかでもステラケミファ



学校のなかでもステラケミファ



Introduction of Our Business

- Transportation Business -



(HP URL)

BLUE EXPRESS, Inc.

Transportation Business

Transport	Land transport · Marine transport · Rail transport
Customs Clearance	Customs clearance · Loading and Unloading
Warehousing	Providing multi-functional warehouses fully equipped with the latest systems
Container services	Supplying large and pressurized containers that meet ISO specifications, medium-size IBC pressurized containers, as well as IBC containers with UN specifications, and also offering services for cleaning, repairing and leasing the containers

Customs clearance sites	Shipping terminals	Overseas Bases
Ohama Office	Sendai Office	Singapore
Osaka Office	Kanto Office	China(Shanghai)
Yokohama Office	Yokohama Office	
	Shimizu Office	
	Nagoya Office	
	Ohama Office	
	Kobe Office	
	Kitakyushu Office	



Introduction of Our Business

- Medical Business -



(HP URL)

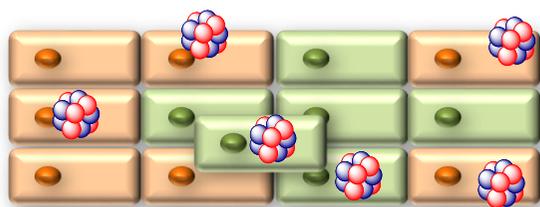
STELLA PHARMA CORPORATION

Principle of Boron Neutron Capture Therapy(BNCT)

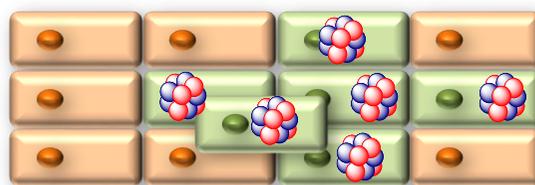
Boron Neutron Capture Therapy (Boron Neutron Capture Therapy : BNCT)

Mechanism of BNCT

A particle beam treatment that selectively destroys cancer cells by using the nuclear fission reaction between boron (Boron-10) and thermal neutrons produced by injecting a boron agent into cancer cells and irradiating the affected area with neutrons from outside the body.



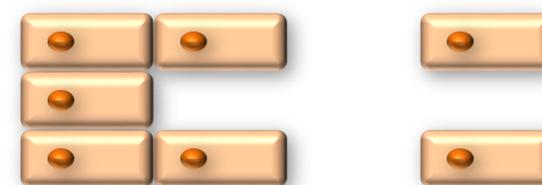
Administration of boron-10 compound (BPA)



Boron-10 compound (BPA) is selectively brought into cancer cells.



Irradiating with thermal neutron ray



Cancer cells with Boron-10 compound (BPA) are selectively destroyed.

Treatment flow of BNCT



Medical examination



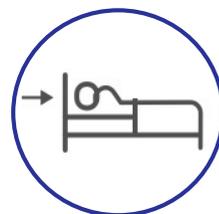
Take a CT scan for Treatment planning



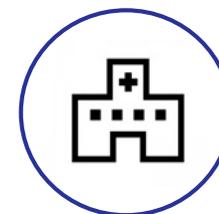
Treatment planning (computer simulation)



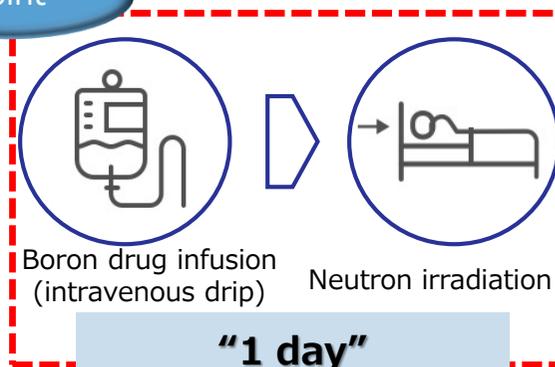
Boron drug infusion (intravenous drip)



Neutron irradiation



Follow-up



"1 day"

Features of Boron Neutron Capture Therapy (BNCT)

Effectiveness	<ul style="list-style-type: none"> • Achieves a high response rate in the area of head and neck cancer (71.4%) • Selectively destroys cancer cells • Expected to be effective against highly infiltrating cancer
Safety	<ul style="list-style-type: none"> • Less damage to adjacent normal tissue
Benefits for patients	<ul style="list-style-type: none"> • Short treatment period • Low invasiveness • Can be used for recurrent cancer after X-ray treatment

Item		X-ray *3	Proton *4	Heavy-particle *5	BNCT
Medical treatment (Head and neck cancer *1)	Number of radiation sessions	35 sessions	32 sessions	16 sessions	1 session
	Treatment period	7 weeks	7 weeks	4 weeks	1 day
Therapeutic effect	Cancer cell killing power *2	1	1.1	3	3 or more

*1: For X-ray, proton and heavy-iron, the data indicates the typical number of radiation sessions and treatment period required.

*2: The data indicates RBE (Relative Biological Effectiveness) for X-ray, proton and heavy particle and CBE (compound Biological Effectiveness) for BNCT.

*3: Japan Society for Head and Neck Cancer Website: http://www.jshnc.umin.ne.jp/general/section_05.html

*4: Kobe Proton Center website: https://www.kobe-pc.jp/disease_1.html

*5: QST Hospital website: <https://www.nirs.qst.go.jp/hospital/radiotherapy/explanation/doctor06.php>

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Boron drug for BNCT "Steboronine"



Antineoplastic drug Steboronine Intravenous Drip Bag 9000 mg/300 mL

(Approval No. : 30200AMX00438000)

May, 2020 Launch

[Regulatory category] Prescription drug *Use by prescription from a physician, etc.

[Indications] Unresectable, locally advanced or locally recurrent Head and Neck cancer

Feature 1



*in-house standard

Feature 2

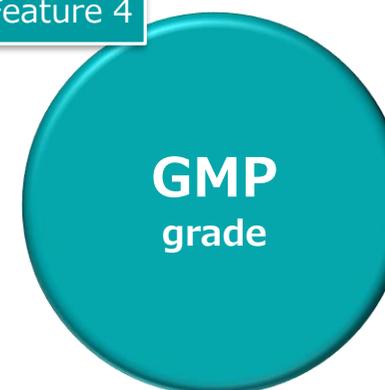


Feature 3



Storage: to be stored at 2-8 degrees Celsius

Feature 4



Efforts to Expand the Indications

Brain tumor (recurrent malignant glioma)	Under the consultation of the Prioritized Review System for innovative medicines [SAKIGAKE Designation System].
Melanoma/angiosarcoma	A phase I clinical study is underway.
Recurrent high-grade meningioma	A phase II study (physician-led study) is underway.

Upcoming Efforts to Increase Use of BNCT

Increasing
number of
BNCT facilities



Increasing
number of
indications

Strategy 1

Enhance the recognition of BNCT as a new treatment modality with higher response rates to ensure quality of life (QOL) of patients

Strategy 1

Focus on diseases for which Stella Pharma has a proven experience in reactor research to **increase the certainty of development success**

Strategy 2

Partner with various accelerator manufacturers

Strategy 2

Take advantage of Stella Pharma's expertise of cell-selective radiotherapy to **focus on Unmet Medical Needs**

Strategy 3

Effectively use the existing approvals given to drugs for head and neck cancer in Japan **for the acquisition of drug application approvals overseas**

Strategy 3

Simultaneously develop PET drugs to **accelerate the expansion of indications**