

## Five forms of business in three segments

### Functional Materials business

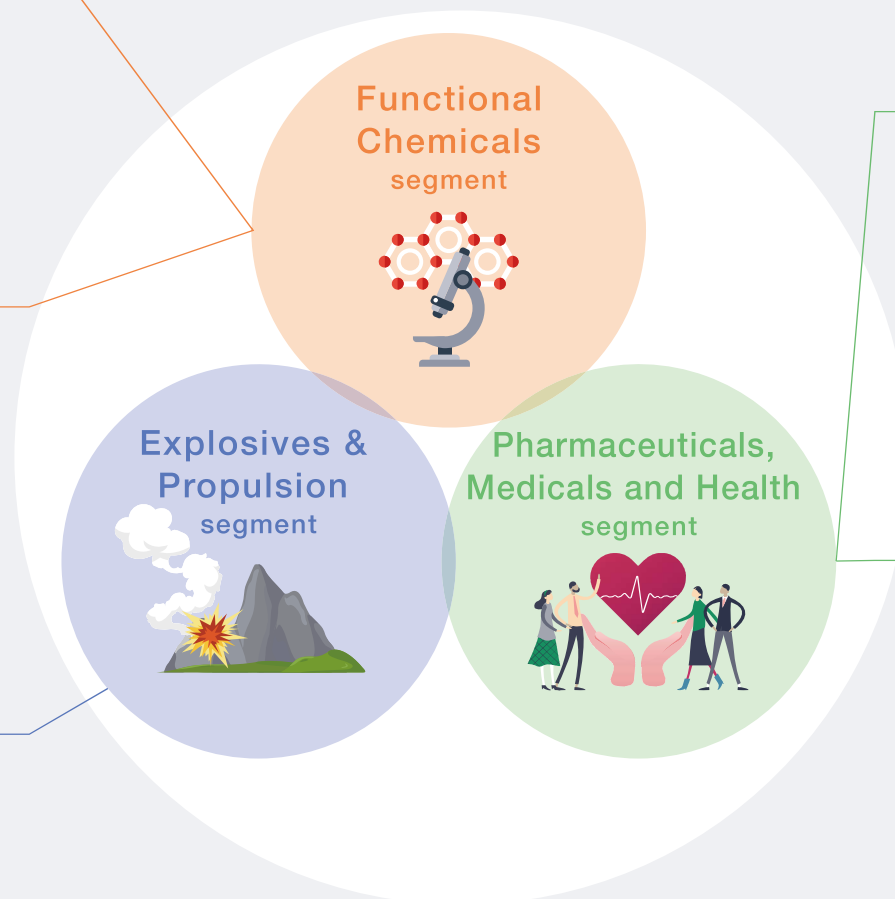
With various derivatives and petrochemical products made from oils and fats at the core, we promote business expansion in the growth fields of Life/Healthcare, Environment/Energy, and Electronics/IT.

### Metal Coatings business

With our unique corrosion prevention agents at the core, we have accumulated cutting-edge surface treatment technologies to become the global standard for corrosion prevention treatment of vehicle parts. Eco-friendly surface treatments are our top priority.

### Explosives & Propulsion business

As one of the world's leading integrated explosives manufacturers, we utilize cutting-edge pyrotechnics to advance our industrial explosives, defense and space explosives, and consumer products businesses.



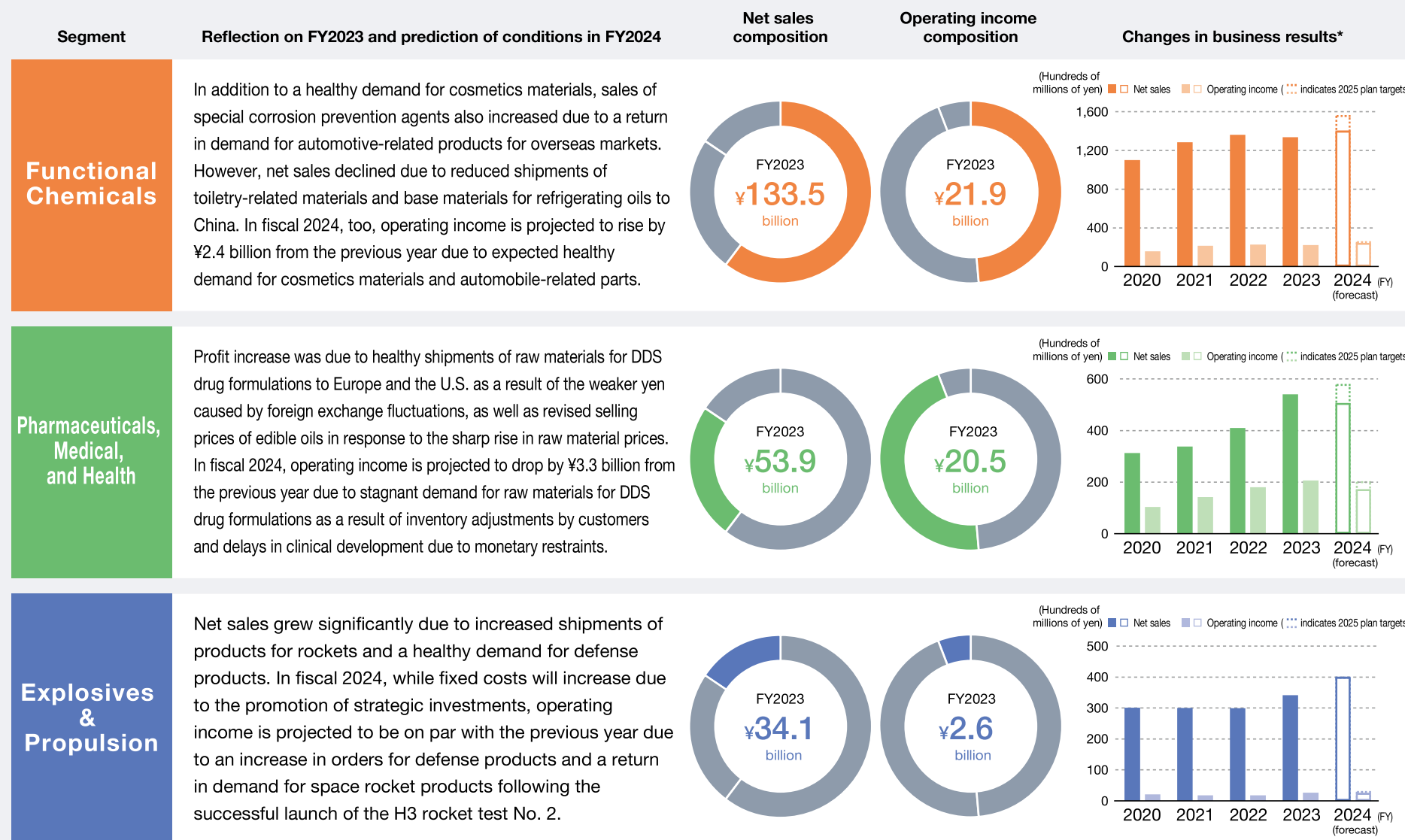
### Life Science business

We develop highly functional materials for biopharmaceutical and nucleic acid drug applications, centered on the DDS field where technological innovation is advancing. We also focus on fields such as eye care, medical devices, and diagnostic drugs.

### Functional Foods business

As a pioneer in edible oils and fats refining and processing technology, we develop processed edible oils and healthcare foods business. We will advance the shift to function-based business domains, and contribute to abundant diets and people's health.

## Five forms of business in three segments



\*FY2022 figures have been updated to reflect the reclassification of reported segments after the change.

## Business Bases

### Developing global business through our domestic and overseas bases

The NOF Group has 12 consolidated subsidiaries in Japan, covering each region from Hokkaido to Kyushu. Overseas, we have 12 bases in nine countries, and are developing our business with locally based sales and production systems.

#### Europe

NOF EUROPE GmbH /  
NOF METAL COATINGS EUROPE S.A. /  
NOF METAL COATINGS EUROPE N.V. /  
NOF METAL COATINGS EUROPE s.r.l.

#### America

NOF AMERICA CORPORATION /  
NOF METAL COATINGS NORTH AMERICA INC.

#### Asia

Changshu NOF Chemical Co., Ltd. /  
NOF (Shanghai) Co., Ltd. /  
PT.NOF MAS CHEMICAL INDUSTRIES /  
NOF METAL COATINGS KOREA CO.,LTD. /  
NOF METAL COATINGS SHANGHAI CO., LTD.

NOF METALCOATINGS  
SOUTH AMERICA IND. E  
COM.LTDA.



NOF METAL COATINGS NORTH AMERICA INC.



Changshu NOF Chemical Co., Ltd.



PT.NOF MAS CHEMICAL INDUSTRIES

### Research laboratories

<b>Ibaraki</b>	Advanced Technology Research Laboratory
<b>Kanagawa</b>	I & S (Innovation & Solution) Department / Chidori Research Laboratory / Functional Foods Research Laboratory / Life Science Research Laboratory
<b>Aichi</b>	Taketoyo R&D Department / Kinuura Research Laboratory / Life Science Research Laboratory
<b>Hyogo</b>	Amagasaki Research Laboratory
<b>Oita</b>	Life Science Research Laboratory

### Domestic consolidated subsidiaries

NICHIYU TRADING CO., LTD. / NICHIYU LOGISTICS CO., LTD. /  
Nichiyo Kogyo Co., Ltd. / YUKA SANGYO CO., LTD. /  
NiGK Corporation / Showa Kinzoku Kogyo Co., Ltd. /  
Nippon Koki Co., Ltd.\*1 / Nippo Kogyo Co., Ltd. / JAPEX Corp. /  
CACTUS Co., Ltd. / NOF METAL COATINGS ASIA PACIFIC CO., LTD. /  
NIKKA COATING CO., LTD.

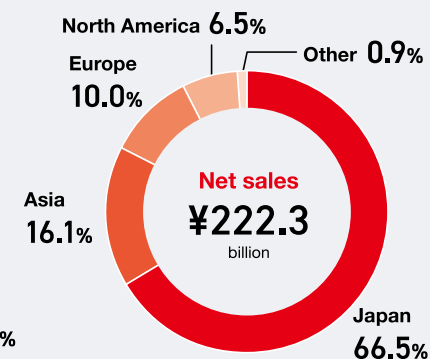
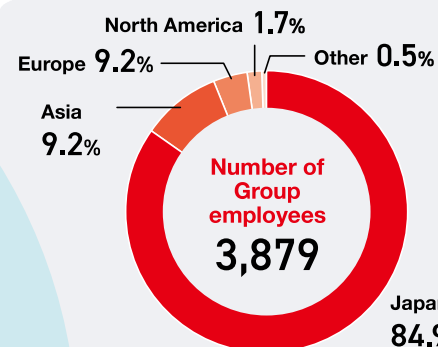
## Japan

### Head Office, branch offices, regional offices, sales offices

<b>Tokyo</b>	Head Office	<b>Osaka</b>	Osaka Office
<b>Aichi</b>	Nagoya Office	<b>Fukuoka</b>	Fukuoka Office
<b>Hokkaido</b>	Sapporo Office		

### Plants

<b>Kanagawa</b>	Kawasaki Works / Chidori Plant / Daishi Plant / DDS Plant
<b>Aichi</b>	Aichi Works / Taketoyo Plant / Kinuura Plant / LS Aichi Plant*3
<b>Hyogo</b>	Amagasaki Plant
<b>Oita</b>	Oita Works / Oita Plant / LS Oita Plant*3



(As of March 2024)



Chidori Plant



Kinuura Plant



Nippon Koki Co., Ltd. Bibai Plant



Amagasaki Plant



Oita Plant

\*1 HOKKAIDO NOF CORPORATION was merged with Nippon Koki Co., Ltd. on April 1, 2024.

\*2 NOF + consolidated subsidiaries

\*3 The organization and name were changed on June 21, 2024.



## Functional Chemicals segment

# Functional Materials business

We will enhance our competitiveness and develop sustainable products with a combination of a wide variety of materials and technologies for oleo & speciality chemicals and functional chemicals & polymers.

### Business strengths

- Covers diverse industries, centered on fatty acid derivatives
- Top-class lineup of cosmetic materials in Japan
- Highly advanced technology for miniaturization of electronic components
- Developing high-performance products in collaboration with resin manufacturers
- Reliable technological capabilities in refining, synthesis, formulation, and more
- Promoting global business development by increasing the overseas sales ratio

Executive Operating  
Officer  
General Manager,  
Functional Materials  
Division

**Kenshiro  
Shuto**



The Oleo & Speciality Chemicals Division, whose core products were various derivatives made from oils and fats, and the Functional Chemicals & Polymers Division, whose core products were petrochemicals, were merged to form a division with a wide range of materials and technologies, including fatty acids, fatty acid derivatives, surfactants, ethylene oxide and propylene oxide derivatives, organic peroxides, polybutene, functional polymers and electronic materials. This business domains encompasses all of NOF's three prioritized business fields, and aims to expand business in each of these growth fields.

The biggest goal is to develop more sustainable products while increasing competitiveness in the market. We are focusing on proposals that integrate materials in oleo and speciality chemicals, such as eco-friendly products that utilize biomass, along with products that improve the performance of polybutene with the application of oleo emulsification technology. Moreover, for our R&D, in addition to our key technologies such as functional polymers, we are working to consolidate and strengthen our technologies by integrating the additive design technology of oleo & speciality chemicals and the

resin evaluation technology, while pursuing technological innovation and the creation of new, higher-performance materials.

We will establish our position in the market through provision of innovative products while flexibly responding to global needs and environment changes. To achieve a sustainable business model, we emphasize the integration of technology in our strategic proposals and R&D. Along with improving our competitiveness in the market, we aim to have consideration for the global environment and contribute to building a sustainable society.

## Functional Chemicals segment

### Main products and uses

- **Fatty acids**  
(for tires, rubber, and other resin products, etc.)  
NAA®
- **Fatty acid derivatives**  
(for base material for refrigerating oils, toner for printing machines, lubricants, gear oil, etc.)  
UNISTER®, MILLUBE®, ELECTOL®
- **Surfactants**  
(for cosmetics, various detergents, etc.)  
UNILUBE®, DIAPON®, STAFOAM®, LUMINOVEIL®
- **Ethylene oxide/propylene oxide (EO/PO) derivatives**  
(for cosmetics, electronic components, coatings, adhesives, etc.)  
WILBRIDE®, MALIALIM®, BLEMME®
- **Organic peroxides**  
(for various plastic and rubber products, golf balls, home appliances, construction materials, automobile interiors and exteriors, etc.)  
PERBUTYL®, PERHEXYL®, PERCUMYL®, PEROYL®
- **Petrochemical products**  
(for lubricants, various kinds of tape, adhesive plasters/pastes, coatings, etc.)  
Polybutene, EMAWET®, NA Solvent™
- **Functional polymers**  
(for lamps, air ducts and other automotive parts, bathtubs, etc.)  
MODIPER®, NOFALLOY®
- **Electronic materials**  
(for LCD panels of PCs and smartphones, coatings, etc.)  
NOFCURE®, NOFTAC®

### Contribute to social issues

#### Expectations for naturally-derived products in response to tighter environmental regulations



Unlike mineral oils, which do not decompose naturally, the materials used by NOF are biodegradable, naturally-derived oils and fats. Even if lubricants leak from rotating parts of machines, environmental pollution can be prevented, so demand for naturally-derived oils for ships and wind power generation is expected to increase in the future. The usage of functional material products is expected to increase due to growing demand for products such as polymer surfactants for condensers in response to the shift to EVs, and alternative CFC refrigerants caused by increased need for air conditioners due to global warming.

#### Faster speed and larger capacity in communications and the shift to EVs make development of new products an urgent task



We are working on the development of curing agents for low-dielectric materials for substrate material resins in preparation for faster speeds and larger capacity in communications. Further, the increase in the number and size of displays accompanying the shift to EVs is expected to increase demand for products in the display field, in addition to protective films for LCD color filters. For electronic materials, we will also focus on market development in East Asia, including China, Taiwan, and South Korea.

## Functional Chemicals segment

## Metal Coatings business

We will respond to rapidly growing demand centered on the EV and renewable energy markets.

## Business strengths

- Contributing to the corrosion protection of automotive parts in Japan and overseas
- Also used in railways, buildings, and wind power generation equipment
- Creating a global standard for corrosion protection through global expansion

Operating Officers  
Group Head of the Metal Coatings Group

**Kuniaki Tsuruoka**



We have been offering materials to prevent rusting mainly on metal parts, centered on automotive parts, as well as joints of buildings, parts fastening railways, and other such parts. In our mainstay automotive market, we will work to expand sales by capturing new demand that is changing amid the ongoing shift to EVs. In the non-automotive market, one of our targets is wind power generation and solar photovoltaic (solar PV) in the growing renewable energy field. In particular, offshore wind power generation, whose develop-

ment is rapidly expanding in China and elsewhere in East Asia, is expected to make extensive use of anti-corrosive coatings, including for the use of bolts to fasten rotating blades and anchors that are buried in the seabed. We will respond to the rapidly growing demand by consolidating the technologies where our Group companies have strengths.

The strength of our metal coatings business lies in the global locations of our manufacturing and sales bases, and we are building a strong

network. By further strengthening this global supply chain, we aim to improve productivity and capture market needs.

In addition, as environmental regulations become increasingly strict, we will also contribute to solving sustainability issues to reduce impact on the global environment by leveraging Group synergies in the development of new products that reduce CO<sub>2</sub> emissions and eliminate and reduce the use of hazardous substances.

## Functional Chemicals segment

### Main products and uses

- Corrosion protection of automotive parts
- Corrosion protection of solar power generation facilities
- Corrosion protection of wind power generation facilities
- Corrosion protection of railway parts

GEOMET®, GEOMET PLUS®



### Contribute to social issues

**Differentiation through  
waterborne anti-corrosion coatings  
that reduce environmental impact**



Unlike “solvent-based anti-corrosion coatings” offered by competitors in Europe and the United States, NOF’s products are characterized by the fact that they are “waterborne anti-corrosion coatings.” As the need to reduce environmental impact increases, expectations for eco-friendly GEOMET® have been increasing.

**Aiming to reduce energy  
consumption by lowering  
the temperature in the curing process**



Because the use of anti-corrosive coatings requires a manufacturing process that involves curing at temperatures of 300°C or higher, we have been studying the development of low-temperature curing type products to reduce greenhouse gas emissions. By developing anti-corrosive coatings that can be cured at lower temperatures, we can reduce the energy consumption, such as electricity and gas, required for the process.



## Pharmaceuticals, Medicals and Health segment

### Life Science business

We will promote the development of biopharmaceuticals and nucleic acid drugs, and aim to become an indispensable presence in the pharmaceutical and medical care industries.

#### Business strengths

- Widely used in pharmaceutical and medical care fields
- World's No.1 share of activated PEG for DDS
- Contributing to the development of biopharmaceuticals and nucleic acid drugs
- Possession of the highly biocompatible material LIPIDURE®
- Expansion of LIPIDURE® lineup
- Support for pharmaceutical and medical device manufacturers from research to commercialization

Operating Officers  
General Manager,  
Life Science Division

**Yuji  
Yamamoto**



The spread of COVID-19 infections has led to technological innovations in drug delivery systems (DDS: drug delivery systems) in the pharmaceutical market at an astonishing speed. One of these is nucleic acid drugs (mRNA drugs) using lipid nanoparticles (LNPs), a technology that has been established and penetrated the market at a rate that would ordinarily be unfathomable. This new market is said to be growing at an accelerated pace.

The 2025 Mid-term Management Plan states that NOF is collaborating with universities, research institutions, and contracted development

and manufacturing organizations (CDMO) to develop and propose more functional materials for biopharmaceuticals such as protein drugs and peptide drugs, as well as for nucleic acid drugs (mRNA drugs) applications, which are attracting attention. In addition, we will provide courteous customer support utilizing our overseas sales bases, strengthen our quality management system by introducing the latest information management system, and expand our production system at the new Aichi Works. Further, in the fields of eye care, diagnostic pharmaceuticals, and medical devices,

where the biocompatible material LIPIDURE® (MPC polymer) has seen growth as a key material, we will leverage business integration for further business development, aiming to become an indispensable presence in the global pharmaceutical and medical care industries.

Leveraging the synergies from business integration, NOF's Life Science business will continue to contribute to technological innovation in the global pharmaceutical and medical care industries with highly functional life science-related materials.

## Pharmaceuticals, Medicals and Health segment

### Main products and uses

- **Activated PEG**  
(for various pharmaceuticals)  
SUNBRIGHT® Series, PUREBRIGHT® Series
- **Functional lipids**  
COAT SOME® series
- **Surfactant for drugs**  
(for injection and vaccine preparations)  
Polysorbate 80 (HX2)™
- **Biocompatible materials**  
(for contact lenses, drugs and diagnostic pharmaceuticals, medical devices, etc.)  
LIPIDURE®



### Contribute to social issues

#### Contributing to improvement of patients' quality of life (improving access to pharmaceuticals)



DDS is a technology that enhances the effects of drugs by adjusting their physiological activity, targeting lesions, yielding chemical stability, adjusting metabolic activity, and other means, so that they act at the required place in the body in the required amount for the required time. This technology makes it possible to reduce the side effects of drugs and the frequency of daily injections, thereby contributing to improving the QOL of patients who need these drugs and improving access to pharmaceuticals.

#### Focusing on the development of diagnostic pharmaceutical agent technologies in the wake of the outbreak of infectious disease



COVID-19 is raging around the world. PCR test kits and antigen test kits have been widely used as diagnostic pharmaceuticals. Going forward, as global warming progresses and new infectious diseases emerge, the demand for diagnostic pharmaceuticals is expected to increase. Therefore, NOF is promoting the development of technologies that contribute to improving the quality and performance of diagnostic pharmaceuticals. We make it possible to rapidly provide these to a wide range of people, thereby contributing to improved access and people's health and hygiene.

## Pharmaceuticals, Medicals and Health segment

# Functional Foods business

We will shift our focus from quantity to quality, promote R&D, and balance the sustainable development of the food industry with people's health.

### Business strengths

- Functional food materials with a wide variety of functions
- Strong sales network for bread-making and confectionery production
- Developing new markets with healthcare food products

Operating Officers  
General Manager, Functional Foods Division

**Hirofumi Kato**



We will reform our profit structure through a strategic shift beyond the conventional food business, shift our focus from quantity to quality, and shift to the functional foods business.

In the processed edible oil business, we will focus on the development of functional food materials, promote R&D related to underutilized food resources, and contribute to sustainable food production and consumption. Furthermore, we will pursue functions to improve the physical properties of foods and address social issues such as greenhouse gas reduction and food loss to contribute to both the global environment and human health.

In the healthcare foods business, we will expand the domains of our proprietary materials for health foods and fats-coating technologies. With a mission to contribute to people's health, we will provide innovative products by making full use of the latest scientific knowledge and cutting-edge technologies. Furthermore, through public bidding invitations for industry-academia sponsored research, we aim to develop new processing technologies, create proprietary materials, and provide functions involved in biological regulation.

To achieve sustainable innovation, we will collaborate with external experts to respond to market changes and

customer needs. The development of new processing technologies and the creation of innovative materials require a wide range of expertise and experience. Therefore, we actively promote the use of external human resources and collaborate with top-class experts to provide the highest level of quality and value.

We will support the development of high-quality products that consumers can use with peace of mind, contribute to the health of people around the world, and establish a sustainable business model by supporting the development of the food industry while also being considerate of the global environment.



## Pharmaceuticals, Medicals and Health segment

### Main products and uses

- **Edible oils, functional food materials**

(for bread, confections, etc.)

DELICIOUS® RICH Plus, NATULLE CONC, Crumb Soft® SK, Bready® SA, SUNSHORT®

(for alternative foods made with plant materials, etc.)

DELINULAR, COOKRICH

- **Healthcare food products**

(for supplement, nutritional products, etc.)

Komecosano®, NICHYU®PS50, NICHYU®GPC85R



DELINULAR, a processed soy protein food containing oil and fats

### Contribute to social issues

#### Contributes to reducing the environmental impact of the food industry



In recent years, both reducing food waste and swapping meat with plant protein alternatives have been attracting a lot of attention. NOF provides functional materials for food that can maintain the softness and improve the texture and volume of breads and sweets, thereby contributing to reduction of food loss by preventing waste due to expiration. We are also working on the development of functional food materials that improve the taste and texture of plant proteins with the aim of promoting the use of plant proteins as an alternative to meat, which has a high environmental impact.

#### Contributing to the development of health foods through proprietary materials and technologies

(improved access to more nutritious foods)



The health food market continues to see further growth as people become more health conscious. On the other hand, many health food materials have distinctive flavors and physical properties, such as bitterness and stickiness, and this is an issue that needs to be resolved in product development by health food manufacturers. In addition to providing unique materials for health food, NOF is developing oil and fat coating technology to improve the flavor and physical properties of materials, thereby contributing to the further spread of health foods.



## Explosives & Propulsion segment

# Explosives & Propulsion business

We will develop businesses based on national policies, such as on defense and space, and focus on the introduction of eco-friendly equipment and product manufacturing.

### Business strengths

- There are continuous needs for space and defense-related products
- Solid propellants for space rockets are the best technology in Japan
- Development of energy control technologies for a wide variety of consumer products

Executive Operating Officer  
General Manager, Explosives & Propulsion Division

**Kazuhito Narumi**



The NOF Group's Explosives and Propulsion business provides explosives in three major areas: the industrial explosives field, the defense field, and the space field. We are developing businesses for much of this based on national policies. Our industrial explosives are used in public works mainly for purposes such as quarrying and tunnel excavation. Our defense business responds to Japanese demand for defense equipment, such as firearms and guided missiles for the Self-Defense Forces to face geopolitical risks. In the space business, we

have a mission as a top manufacturer in Japan to meet needs for solid propellants for space rockets required for launching satellites, which have become indispensable to people's lives. In each of these businesses, we have established efficient production systems to ensure a stable supply of products and to meet increasing demand, and we are working to further improve productivity.

In addition, we have been introducing eco-friendly facilities, such as those that reduce CO<sub>2</sub> emissions. Aiming to improve sustainability going

forward, we are promoting research on gunpowder compositions that reduce CO<sub>2</sub> emissions, substituting eco-friendly gunpowder that does not use lead, and accelerating development of solid propellants for small rockets that have less environmental impact.

The production plant of our Explosives & Propulsion business has a large area for security reasons, and a wide variety of wild plants grow within the grounds. By properly managing these living things, we will contribute to climate change and biodiversity.

## Explosives & Propulsion segment

### Main products and uses

- **Industrial explosives**

(for quarries, tunnels, etc.)

Emulsion explosives, ANFO explosives, electric detonators

- **Space rocket products**

Solid propellants, pyrotechnic devices for space rockets

- **Defense products**

Gun propellants / rocket propellants, pyrotechnic devices for missiles, defense equipment

- **Functional Products (Consumer products)**

Temperature Labels® (temperature indicator), UV Labels®, sterilization materials, antifreezing agents, NET LAUNCHER® (crime prevention device), vapor pressure crushing agent (GANSIZER®)



### Contribute to social issues

#### Focusing efforts on space and defense-related businesses from a medium- to long-term perspective



The NOF Group has long supported the space business, starting with the Japan Aerospace Exploration Agency (JAXA). It can be predicted that information from satellites will become increasingly necessary for industries in Japan and abroad going forward, such as in the evolution of communications and the commercialization of automated driving. On the other hand, launching a rocket with high accuracy is not easy, and constant technological innovation is required. Space and defense-related business is an essential part of national policy. We will continue to focus our efforts on contributing to society while earning stable profits.

#### Preventing road surfaces from freezing and contributing to traffic safety Automatic liquid antifreezing agent spraying devices



When automobiles drive on roads with snow and ice in winter, there is a danger of traffic accidents caused by tires slipping. Our competitors' antifreezing agents are mostly chloride-based. However, the chlorine-free antifreezing agent KAMAGU® sold by Nippon Koki Co., Ltd. does not cause salt damage to structures such as metal or concrete, nor to the natural environment. In addition, the AUTOKAMAGU® automatic antifreezing agent spraying device is available in a version equipped with a solar panel that can be operated without electricity, thus contributing to energy saving.