

—● Provide new values to realize a prosperous and sustainable society —●

Initiatives for clean tech

Our fundamental view

To achieve both a sustainable society and economic growth, NOF is focusing on development of clean tech. We are flexibly responding to changing market needs in the three fields of Life/Healthcare, Environment/Energy, and Electronics/IT, as well as further accelerating the development of new products and technologies and improving productivity.

In this era with 100-year life expectancy, there is a strong need to solve social issues related to health, such as reducing social security costs by extending healthy life expectancy and improving the quality of life of the elderly. In addition,

required performance for electronic materials is increasing, such as higher picture quality for audio visual devices and smartphones, faster speed and larger capacity for telecommunications technology, and acceleration of the shift to electric vehicles (EVs) for automobiles. Based on these social needs, the Corporate R&D Division plans and proposes company-wide research strategies and focuses efforts on the creation of new business.

The “NOF call for commissioned industry-academia research,” a project aimed at business creation through an external open call, was opened from October 2022 for several themes

among the materials and technologies in the health food and electronics fields for which future market growth and NOF’s technology utilization are anticipated. As a result of careful evaluation and screening, including for possibilities of commercialization at NOF, we decided to select four technologies in the health food field and four technologies in the electronics field. Those selected will be provided with commissioned research funds to conduct research over a period of one year toward contributing to society, aiming at commercialization in future.

Promotion of R&D in our three prioritized business fields

Amid growing expectations for innovation in the chemical materials field, we are working to develop new technologies and products in the three prioritized business fields.



As demand for air conditioners and refrigerators increases due to global warming, we expect to see demand for base materials for refrigerating oils and polybutene for air conditioner putty. In addition, as offshore wind power generation gains momentum for development, particularly in Asia, there is a growing need for environmentally friendly products such as biodegradable lubricants made from raw materials derived from natural oils and fats and rust inhibitors for bolts to prevent marine pollution. Furthermore, as EVs become the norm, there are expectations for development of products with advanced functions, including anti-fog agents for LED headlamps and agents to prevent abnormal noises in order to maintain a quiet car interior.



For pharmaceuticals, we are developing functional lipids and activated PEG as DDS materials for biopharmaceuticals through means such as precision synthesis and advanced refining technologies. We are developing monodispersed PEG for antibody and nucleic acid drugs and ionic lipids for nucleic acid delivery. For medical care, we are developing the LIPIDURE® Series for areas such as eye care, diagnostic pharmaceuticals, and medical equipment-related fields, and are also developing high-function materials for the regenerative medicine sector. For cosmetics, we have a wealth of expertise in areas such as biocompatible materials, natural bioavailable substances, interface control technology, and mix design technology. We use this expertise to respond rapidly to functional advances.



In the telecommunications field, the need for curing agents for low-dielectric materials is increasing as the volume of information transmitted increases with the transition from 4G to 5G. Demand for highly photosensitive materials and additives for electronic components is also increasing as electronic components become smaller. The shift to EVs in automobiles also requires miniaturization of electronic components, and we are working to add more value to these products. In addition, the increase in number and larger size of LCD panels in EVs is expected to raise demand for overcoat materials for LCD color filters.

“NOF call for commissioned industry-academia research” for open innovation through co-creation with external parties

We are actively promoting open innovation activities in line with our vision of co-creating new value through the power of chemistry.



In the health food field, four technologies were selected after an open call for three themes



Life/Healthcare field

We aim to acquire technologies that can contribute to solving issues related to people's health. We received applications from a diverse range of research institutions, academia, and startups in Japan in the three themes of (1) useful materials for health food, (2) technologies for improving the functionality, production efficiency, and advanced utilization of useful materials for health food, and (3) cultured materials aimed at addressing the protein crisis. With the support of NineSigma Holdings, Inc. and after careful screening for commercialization potential, we selected technologies from Setsuro Tech Inc., Tokyo Institute of Technology, the Graduate School of Agricultural and Life Sciences / Faculty of Agriculture of The University of Tokyo, and Tokyo University of Science.

Selected organizations







In the electronics field, four technologies were selected after an open call for nine themes



Electronics/IT field

We aim to acquire technologies that can contribute to the enhancement of the functionality of electronic materials. We received applications from a wide variety of organizations in nine themes: (1) ultra high-speed communications, (2) next-generation displays, (3) new power generation methods, (4) power semiconductor materials used in consumer appliances and electronics for EVs, (5) autonomous control sensing for automatic driving, robots, and drones, (6) higher performance motors, (7) rechargeable batteries, (8) biological data acquisition, and (9) semiconductors for PCs, smartphones, home appliances, and electronic equipment. With the support of ReGACY Innovation Group, Inc., as a result of the screening, we selected WINGO TECHNOLOGY Co.,Ltd., Shinshu University, the Japan Advanced Institute of Science and Technology, and Yamagata University.

Selected organizations

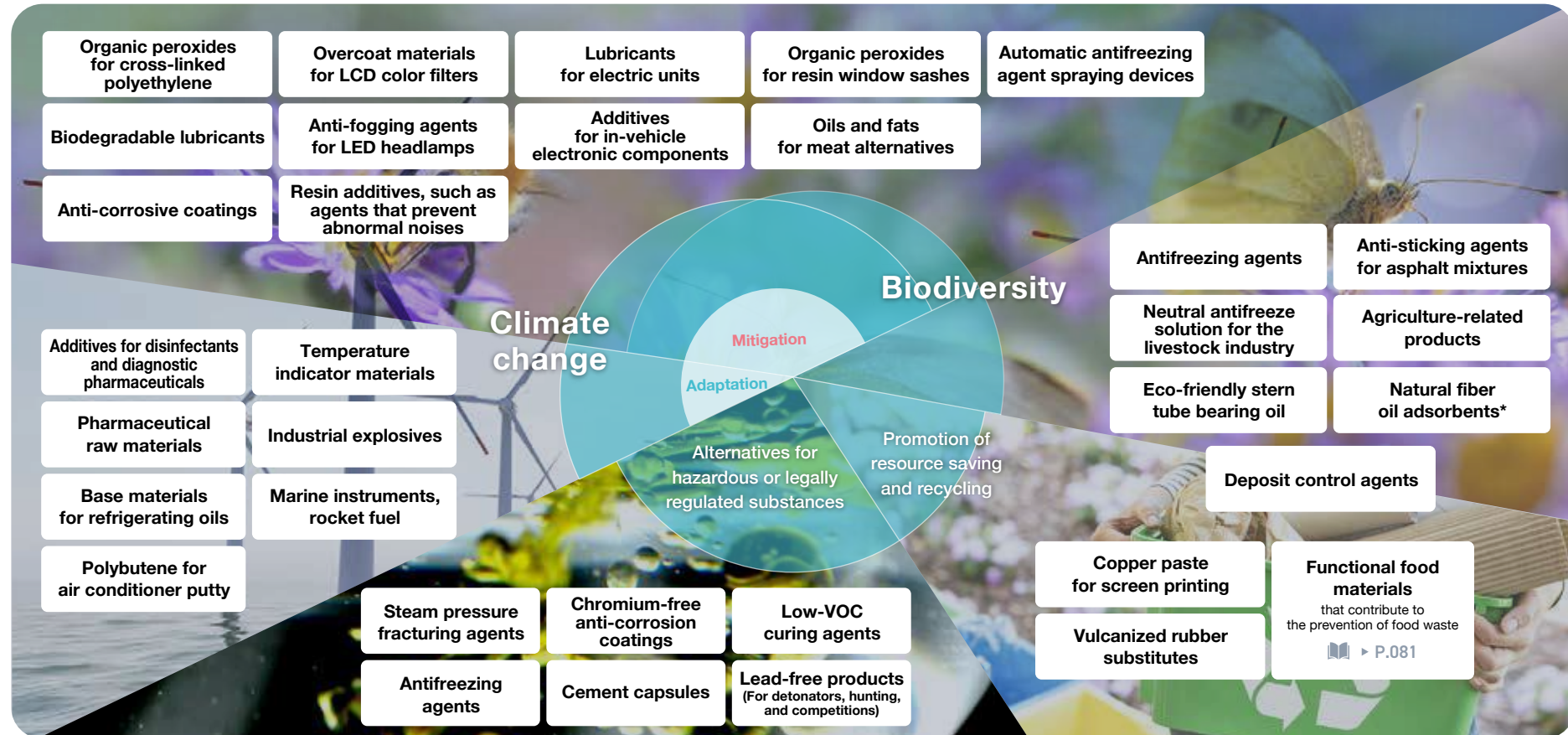
	
	

Eco-friendly products

In response to global issues such as climate change and biodiversity, we are conducting R&D in the three prioritized business fields and creating a variety of eco-friendly products.

Technologies related to climate change and biodiversity among NOF's clean tech-related products

Sustainability Report ▶ P.021-029



*Sold by sales agents