

Initiatives for clean tech

Policy (our fundamental view)

To achieve both a sustainable society and economic growth, NOF is focusing on the development of clean tech (technologies in the three prioritized fields of the NOF Group). 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 expectancies, 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 elderly people. In addition, the level of performance required of 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 automobiles (EVs). 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.

In fiscal 2023, the “NOF call for commissioned industry-academia research,” a project aimed at

business creation through an external open call, was opened from October 2023 in four areas among materials and technologies in the medical care and medical device fields for which future market growth and NOF’s technology utilization are anticipated. As a result of careful evaluation and screening, including for commercialization potential at NOF, we decided to select three materials and technologies. 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 products that contribute to the environment, 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 noise reduction agents 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. In the area of medical care, we are developing the LIPIDURE® Series for use in eye care, diagnostic pharmaceuticals, and medical devices, as well as highly functional materials for regenerative medicine. 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 speed and capacity of telecommunications increases. Demand for highly photosensitive materials and additives for electronic components is also increasing as electronic components undergo miniaturization. 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 displays in EVs is expected to raise demand for overcoat materials for LCD color filters.

Our “commissioned industry-academia research open innovation program” through external collaboration

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



Life/Healthcare field

Called for applications from four topics related to medical care and medical devices, and selected three materials and technologies from these

The commissioned industry-academia research open innovation program, which aims to develop new technologies and products through co-creation with external parties, called for applications on topics related to the medical care and medical device fields. We called for applications on the four topics of (1) materials for regenerative medicine, cell therapy, and gene therapy; (2) in vitro diagnostic pharmaceutical materials; (3) materials for pharmaceuticals (small molecules, peptides, nucleic acid, biotech); and (4) materials for medical devices from applicants from various research and academic institutions and startups in Japan and overseas. With the support of NineSigma Holdings, Inc. and after careful screening for commercialization potential and other factors, we selected technologies from Shinshu University, Nagasaki University, and Nagoya University. Selected organizations will be provided with commissioned research funds to conduct research over a period of one year toward contributing to society, with the aim of new business creation in future.



Selected organizations (in Japanese syllabary order)



Products that Contribute to the Environment

In response to global issues such as climate change and biodiversity, the NOF Group is conducting R&D in technologies (clean tech) in our three prioritized business fields and creating a variety of products that contribute to the environment.

Products that contribute to the environment, including to address climate change and biodiversity, among the cleantech-related products of the NOF Group

