

R&D Strategy Roundtable

Under the slogan “Technology-Driven Company,” we pursue research and development that benefits society.

Nihon Parkerizing opened the new Central Research Laboratories in April 2025 and is seeking to expand and strengthen the R&D system. Three Executive Officers deeply involved in R&D discussed the latest developments and challenges.

Participants in the roundtable

Yasumasa Fukuta	Managing Director and Executive Officer
Takaomi Nakayama	Executive Officer and General Manager of Technical Division
Hidehiro Yamaguchi	Executive Officer and General Manager of Central Research Laboratories

Opening of new Central Research Laboratories and organizational restructuring

Yamaguchi

City of Hiratsuka in Kanagawa is home not only to the Central Research Laboratories but also to a sales office, a chemical manufacturing facility, technical centers and a contract manufacturing facility, serving as a center for the group’s technological capabilities. We have named the site “Parker Techno-Village”. We are going to use it as a base for promoting R&D on open innovation. The construction of the new Central Research Laboratories, which opened in April 2025, was also part of this project. The new Central Research Laboratories are generously equipped with joint

research laboratories and discussion spaces, based on the concept of “bringing technology and people together.” We have also restructured our research and development organization, establishing the Core Technologies Research Division and the Advanced Technologies Research Division. Around 60% of our 130 researchers belong to the Core Technologies Research Division, which is responsible for developing and advancing the core technologies we have built over the past 100 years. The remaining 40% belong to the Advanced Technologies Research Division and are engaged in technological development in new fields and new businesses, with an eye toward the future.

Nakayama

In R&D, conducting experiments does not guarantee results. Under these circumstances, we raise issues and propose solutions to increase development efficiency.

Opening the new Central Research Laboratories on the concept of “bringing technology and people together.”

Hidehiro Yamaguchi
Executive Officer and General Manager of Central Research Laboratories

Fukuta

The group’s approach to research has been market-driven, meaning conducting R&D based on customer needs. However, we intend to increase the technology-driven approach in the near future. At the same time, we probably need to remain tenacious in researching themes that will meet societal needs in 10 or 20 years. The restructuring aimed to build an R&D system under which we all put our heads together to figure things out.

Nakayama

That is exactly right. We will shift our organizational structure and operational methods to focus on tackling primary goals and direction with a long-term perspective, avoiding short-term thinking.



New Central Research Laboratories
Expanded various facilities and established an environment for the R&D of new fields, to strengthen the R&D capabilities. R&D will become more efficient and more advanced more quickly.

Expanding research themes

Yamaguchi

Recently, carbon neutrality has become a significant topic, and we are also steadily taking steps in this direction. First, the reduction in energy used during surface treatments. For example, surface treatments often include cleaning the surface material, chemical reactions or coatings, and drying processes, and require a long processing time and heating. However, lowering the process temperature and shortening the process itself are game-changers for promoting decarbonization. Even if innovative surface treatment technology is developed, if the energy required to produce the raw material of the chemical used in this technology exceeds that of existing technology, then overall CO₂ emissions may increase. From this perspective, we also need to consider the energy required to produce chemical raw materials in our development activities. The second is reducing energy loss when using surface-treated materials. For example, internal combustion engines and electric motors both generate power, albeit through different structures. This power is transmitted in various

forms to move or control something. However, the generated power is never transmitted without loss. Some of it is converted to heat due to friction or other forms of resistance. We believe that reducing this energy transmission loss is an effective measure for decarbonization. A third topic concerns new energy and related themes. Based on the keywords EVs and hydrogen, we will predict future trends and focus on necessary development themes. We have already made progress on the first challenge: reducing energy use in surface treatments. However, our efforts on the second attempt of reducing transmission loss by minimizing resistance and friction through surface treatment could prove even more successful. We are focusing on that.

Fukuta

Alongside moves to meet customer demands regarding the environment, we must also consider the extent to which surface treatments create added value, including visualizing the entire manufacturing process and shortening it through surface treatments.



Strengthening the research and development system, with Japan, China and Thailand as research hubs

Takaomi Nakayama
Executive Officer and General Manager of
Technical Division

Yamaguchi

We have also set forth a policy of promoting open innovation. Especially in the Advanced Technologies Research Division, given our relative lack of knowledge of advanced technologies compared with core technologies, collaborative research with outside laboratories that possess specialist knowledge is beneficial.

Nakayama

One success story is our collaborative research with Kobayashi Pharmaceutical Co., Ltd. and the Japan Aerospace Exploration Agency (JAXA). Our collaborative research into antimicrobial technologies for combating microbes in spacecraft was completed in 2023, providing us with a deeper understanding of antimicrobial technologies. Our collaborative research partners used to be mainly in the automotive and rail industries. Our current challenge is to expand collaboration in other fields, and progress in new fields, such as the medical appliance market, is also evident.

Yamaguchi

When we bring products based on technologies developed in the automotive and rail industries to completely new customers, people are surprised, saying, "Wow, a film this thin performs like that!" Aside from medical devices, we are also starting to get involved in cosmetics-related R&D.

Nakayama

We are also leveraging our three R&D sites, which are our research sites in China, Thailand and the new Central Research Laboratories in Japan, to strengthen our global research system further. While our basic policy remains that R&D should be carried out in Japan, we are also seeking to accelerate technology development to meet the specific needs of each region, including our research sites in China and Thailand. The site in China (PST: Parker Surface Technologies) has been in operation for 16 years and has successfully built independent development capabilities aligned with local needs. The site in Thailand (P-STAP: Parker Surface Technology Asia Pacific) was established six years ago. This site is making an effort to improve products in line with customer requirements and chemical applications. You were General Manager of P-STAP until last year, weren't you?

Yamaguchi

Yes, I was stationed at P-STAP for five years. P-STAP develops technology for the India-ASEAN region. In India and ASEAN, religions and cultures vary from country to country, and the industrial structures also vary with development. Naturally, the level of technology also varied. So, while evaluating how things stood locally, we researched surface treatment needs in each country at the time and developed coating chemicals tailored to each country. The most significant difference between the two sites is that Shanghai-based PST focuses on the single Chinese market while P-STAP focuses on multiple markets. Our priority while I was stationed at P-STAP was markets where our group companies in India and ASEAN were not doing much business. Therefore, I was also actively involved in attending the group companies' employee

training sessions and customer visits, introducing our technologies and supporting their applications. Going directly to customers on-site and inspecting the structure of their production lines was particularly

beneficial in improving the speed and timeliness of development. I feel having bridgeheads that enable this, beyond physical distance, is very advantageous for the group's global research and development.

Challenges and issues in R&D

Yamaguchi

To produce research results, we should ideally ensure that researchers can think for themselves and act on their own initiative. Given that research is creative work, my mission as General Manager of Central Research Laboratories is to develop an environment that does not force researchers to work but instead allows them to concentrate on and devote themselves to their research.

Fukuta

We have also asked Mr. Yamaguchi to calculate the extent of our contribution to a sustainable society using the theme "what if surface treatment technologies didn't exist?" For example, untreated iron is prone to wear, tear and rusting, requiring more iron to be produced for replacement. Calculation results showed that the Parker Group's surface modification technologies for preventing this reduce total global CO₂ emissions by 0.086%. As a technology-driven company, we will share the significance of this result both within the company and with customers to get our R&D teams on board and encourage customers to

collaborate with us. We intend to develop this initiative into a broader, more profound endeavor rather than viewing it as an isolated effort. We are talking about increasing the CO₂-reduction effects achieved through our technologies so that, by 2050, they reduce total global CO₂ emissions by 0.01%.

Yamaguchi

I feel the words "we aim to be a technology-driven company" are quite weighty. If this means that we keep creating and accumulating original technologies, then we still have a way to go. We should keep working even harder.

Contributing to a sustainable society through our surface modification technologies of the Nihon Parkerizing Group

Yasumasa Fukuta
Director, Managing Director
and Executive Officer

