Opening Article

Aiming for a Chemistry Utopia

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Sagami Chemical Research Institute (Sagami Institute) was established in August 1963 as a nonprofit institute for researching innovative new technologies and for promoting the development of the Japanese chemical industry. Two thousand eleven marks the Sagami Institute's 48th year of overcoming challenges, including restructuring and, in 2001, relocating to its present address. Under new laws, the Sagami Institute was officially declared a Public Interest Incorporated Foundation in April 2010 and has since embarked on its mission as such an enterprise.

The Sagami Institute has contributed much to the development of the Japanese chemical industry. In the nearly half century since its establishment, the institute has provided the industry with many practical technologies. The industry, meanwhile, has overcome various financial and economic crises and steadily grown to become a key, technologically competitive industry in world markets. However, the remarkable progress in chemical technologies by developing countries and the recent unprecedented global financial crisis have seriously reduced the profitability and the competitiveness of the Japanese chemical industry. This is particularly so considering the rapid increase in the prices of the fossil fuels and rare metals that are the industry's raw materials. The realization that the dramatic rise in prices indicates that these natural resources are fast nearing exhaustion only adds to the strained circumstances of the Japanese chemical industry.

It is more vital than ever, therefore, that the Sagami Institute, unperturbed by the changing environment, further develops the Japanese chemical industry through continuous and purposive basic research that explores new frontiers. The institute must take a multifaceted approach to contributing to society through chemistry, not only developing new technologies for chemical science but also tapping those innovative technologies to provide high-performance chemicals of robust international competitiveness.

For the Sagami Institute, this approach requires constructing a financial base sufficient to sustain the necessary research activities. The institute's funding depends on contributions from Japanese chemical companies, on income from technologies it has developed with industry partners, and on revenue from patent licenses. But today's severe economic situation and operating climate make too much dependence on the financial support especially of industry companies untenable. To best fulfill its obligations to the industry and its companies and to enhance its identity as a foundation accountable to the public interest, it is important that the Sagami Institute should accelerate its applied research in order to more quickly convert Sagami-born chemical technologies into practical applications for which technical licenses can be offered as a means toward self-funding of the institute.

The Sagami Institute's research resources are heavily invested in the development of organic chemicals and of practical manufacturing processes for those products. In the more than 180-year history of organic chemistry since the first urea synthesis by P. Wöhler, it is safe to say that many of the most impressive technological advances in organic synthesis have occurred in the last few decades. It can, in fact, be said that there is no compound that cannot be synthesized. And owing to the rapid spread of information networks, information sharing has advanced to the extent that it is possible to instantly retrieve any information from any chemical database storing the details of various compounds and their methods of syntheses discovered to date. Organic chemistry thus has reached the mature stage.

That being the case, the organic chemistry-focused Sagami Institute has no choice but to derive its competitive advantage from the uncanny ability of its research faculty to generate innovative technologies opportunely designed to fulfill practical needs. Since the start of the 21st century, though, the institute has for financial reasons been forced to reduce the scale of its research faculty. This makes the setting of specific targets that exploit the institute's proprietary technologies and that satisfy the needs of industry extremely important.

Persistence in pursuing activities only in fully developed synthetic chemistry and that involve exclusive cooperation with specific members involved solely in that aspect of the chemical industry will prevent the development of innovative chemical materials and lead to a lack of public interest in the industry overall. So the Sagami Institute will take advantage of its status as a small-scale public-benefit corporation to encourage timely communication and flexible cooperation between researchers in industry and academia who are working in different disciplines. In so doing, the institute hopes to obtain a sharing of information on a level that enables researchers, individually and jointly, to demonstrate their potential in devising studies for purposive targets. Sagami Chemical Research Institute hopes, too, that in fostering the industry tradition of allowing researchers to engage in self-satisfying studies it realizes the dream of its senior management to create a "chemistry utopia."

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