

Compound Discovery Support Service Chemicals Informatics Received the 2024 Technology Award from the Society of Materials Science, Japan



Award plaque

Tokyo, June 3, 2025 Hitachi High-Tech Corporation ("Hitachi High-Tech") has developed its Chemicals Informatics system ("CI"), a materials exploration technology based on publicly available data, and this was awarded the 2024 Society of Materials Science, Japan Technology Award (the "Award") by the Society of Materials Science, Japan.

The Award is given to individuals or groups who have made outstanding technical contributions to the fields of materials science and engineering. It recognizes and honors remarkable achievements in the development of new technologies and the innovation/implementation for existing technologies.

With this award, Hitachi High-Tech's cloud service CI was recognized for its contributions to effective and improved operational efficiency in the search of organic and inorganic materials in materials development.

About CI

Using Hitachi High-Tech's proprietary database based on publicly available data such as patents, the compound discovery support service CI uses AI to quickly and comprehensively search for potential candidates for the development of new materials based on the vast amount of compound data contained within the service, and predicts information on their effectiveness and mechanism using molecular dynamics simulations.*1 This offers widespread reductions on the conventional method of searching for material candidates based on literature research and brute-force experiments using the experimental design method*2, helping to streamline the development process and shorten time spent, along with contributing to the reduction of development costs and CO₂ emissions through early application of new materials and optimization of the number of experiments.

Hitachi High-Tech has been providing the service since 2020 and it has been used in research and development by our customers, mainly chemical and materials manufacturers.

*1 Molecular dynamics simulation: A computer simulation technology that predicts the nature of a material by solving equations for the motion of atoms

*2 Experimental design: When performing experiments by combining multiple conditions, statistics are used to guide the necessary experiments by combining the conditions to prevent oversights, and the results are analyzed

Future Outlook

Demand for development of new materials, such as advanced materials and environmentally friendly materials, is expected to continue to increase in the future. Improving the efficiency of the search for optimal materials, which is an essential process in the development process, contributes greatly to speeding up the entire development process. As well as CI, Hitachi High-Tech also provides Material Development Solutions using Materials Informatics (MI), which uses past experimental data to support the search for optimal conditions, such as the ratio and quantity of materials used in development. Furthermore, we provide a wide range of DX solutions, such as "experimental data collection services" and "DX concept formulation support" and by supporting the efficiency of a wide range of materials development processes, we contribute to improving the productivity of frontline workers and promoting DX in the industrial field.

Hitachi High-Tech will leverage our strengths in our global front capabilities, domain knowledge, touch points and technological capabilities to create solutions and business models that lead to solutions based on various social issues, and to contribute to market growth in the industrial and social infrastructure fields.

Related Links

About CI

[Contributing to Efficient Development of Metal Thin Film Materials by Using Chemicals Informatics and Materials Informatics](#)

About Hitachi High-Tech

Hitachi High-Tech provides cutting-edge technologies, products and services to society and customers with its corporate vision of "Changing the World and Future with the Power of Knowledge" to contribute to a sustainable global environment, healthy, safe and secure lives, and the sustained development of science and industry. We manufacture and sell clinical analyzers, biotechnology products and radiation therapy systems in the healthcare field, semiconductor manufacturing and inspection equipment in the semiconductor field, as well as analytical systems and analysis equipment used in environmental fields and materials research. We are also engaged in a wide range of business areas globally, providing high added-value solutions in battery, communication infrastructure, railway inspection, digital and other industrial and social infrastructure fields. We provide solutions through a deeper understanding of the issues facing society and our customers to contribute to realizing a sustainable society. The company's consolidated revenues for FY2024 were approx. JPY 756.5 billion.

For further information, visit <https://www.hitachi-hightech.com/global/en/>

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