

Mitsui Chemicals and CrowdChem Jointly Develop NLP Technology for More Efficient New Material Searches

Using generative AI to promote digital transformation

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) and CrowdChem Co., Ltd. (Tokyo; CEO: IKEBATA Hisaki) today announced their joint development of a technology capable of leveraging AI to seamlessly carry out everything from the extraction of technical information likely to be useful in the future to searching for new materials. With the aid of natural language processing (NLP), this new technology will deliver greater efficiency in searches for new materials. Additionally, combining generative pre-trained transformers (GPT) and other generative AI* technologies with past results is expected to result in the technology's widespread use in business.

Development work in new fields has, until now, required substantial research time and expenditure. In quite a few cases, unforeseen technical issues cause this work to be discontinued.

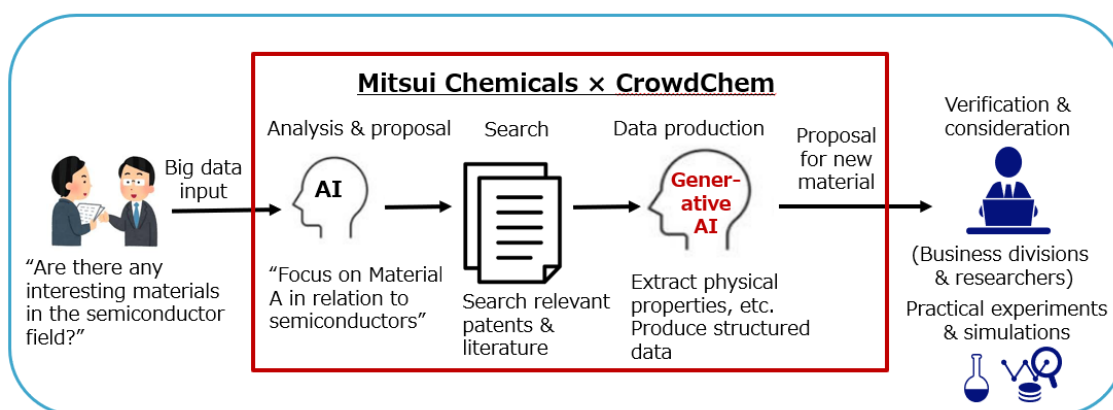
To resolve this problem, Mitsui Chemicals and CrowdChem have developed a new platform that works by combining two key technologies. The first of these technologies extracts highly relevant data from technical keywords found in patents and technical literature, as well as in news stories about future trends in the field. The second, meanwhile, is capable of extracting and implementing necessary information from written text.

The resultant platform is capable of simultaneously evaluating the market prospects of the findings, along with the ease of development, enabling users to efficiently conduct searches for promising new materials. This new technology makes it possible to boost the efficiency of development by establishing a series of processes that allow AI to be applied to CrowdChem's database of chemical information – an innovation that can help customize the system for extracting useful information and carry out searches for new materials.

Meanwhile, combining generative AI with results produced to date will assist in interpreting results, developing specific examples from abstract output, gathering related information and presenting action plans. The technology is therefore expected to find a wide range of uses in business. As the next step, Mitsui Chemicals plans to verify the concept in real-life business challenges and roll out the platform to several business divisions.

Mitsui Chemicals intends to continue taking on the challenge of tapping into advanced technologies, both by integrating sales data with technical data in a way that leverages digital transformation and by combining this data with other advanced digital technologies.

【Process for conducting new application searches using generative AI】



*Generative AI

This artificial intelligence is a type of machine learning technology that is capable of generating new data from the data with which it is provided. As it can produce images, speech, natural language and various other forms of data, generative AI is used in a range of fields for automation and for increasing creativity and efficiency, among other applications.

Overview of Mitsui Chemicals

Name Mitsui Chemicals, Inc.
 Head office Yaesu Central Tower, Tokyo Midtown Yaesu, 2-2-1 Yaesu, Chuo-ku, Tokyo
 Business Comprehensive chemicals business
 Establishment October 1, 1997
 Website <https://www.mitsuichemicals.com>

Overview of CrowdChem

Name CrowdChem Co., Ltd.
 Head office 2-7-22 Sanno, Ota-ku, Tokyo
 Business Software development, sales and associated services; provision of data analysis and consulting services
 Establishment January 2022
 Website <https://crowdchem.net/en/>