



July 1, 2019

NEWS RELEASE

## Mitsui Kinzoku Announces Investment in Environmental Energy Venture Company

Investment in Atomis

Mitsui Mining & Smelting Co., Ltd. (Head office: Shinagawa-ku, Tokyo; President and Representative Director: Keiji Nishida; hereinafter “Mitsui Kinzoku”) is pleased to announce that it has invested in Atomis Inc. (Head office: Kyoto-shi, Kyoto; President & CEO: Daisuke Asari; hereinafter “Atomis”), which develops new engineered materials using metal organic frameworks (MOFs).

As a part of its 2019 Medium-Term Management Plan, Mitsui Kinzoku set the business strategy of transforming its growth foundation to prepare for market co-creation. Under this strategy, the company is creating new businesses to prepare for the future. As a part of this corporate venture capital (CVC) initiative, Mitsui Kinzoku invests in promising startups in Japan and overseas that are expected to create synergies with the company.

Atomis, in which lead investor Mitsui Kinzoku invested via the CVC, works under the vision, “We provide innovative global solutions for precisely controlling gases.” This company owns a unique synthesis method for manufacturing high-quality MOFs at low cost. It aims to provide new value to the market by widening the applications of MOFs.

Through the investment in Atomis, Mitsui Kinzoku will cooperate with the manufacturing of MOFs and contribute to widening the applications of MOFs. In addition, Mitsui Kinzoku will combine MOFs with inorganic materials, at which it excels, and pursue business opportunities widely by developing valuable products for new markets including the absorption, separation, and storage of gases in the field of the environment and energy, under the slogan of “Material Intelligence.”

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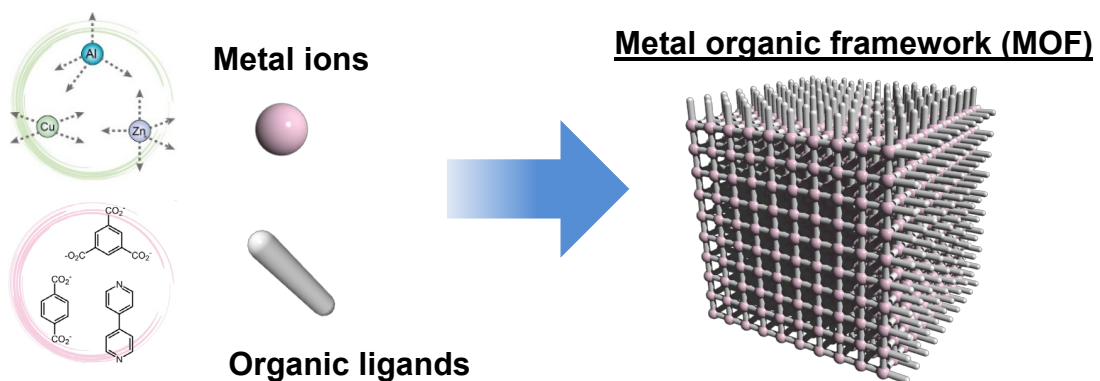
(Reference)

## 1) MOF

MOF, also known as porous coordination polymer (PCP), is a sponge-like material with nano-sized pores and an extremely large surface area. It is a new porous material discovered in 1997 by Distinguished Professor Susumu Kitagawa at Kyoto University's Institute for Advanced Study. Professor Kitagawa is also the director of the university's Institute for Integrated Cell-Material Sciences (iCeMS).<sup>\*</sup> With its structure and property changing in response to the environment and external stimulus, thereby allowing highly selective absorption and desorption, MOFs were developed as an innovative absorbent that executes functions not achievable with conventional materials.

The 3D structure of MOFs can be freely designed from a tremendously diverse range of metals and organic ligands. More than 80,000 structures have been reported so far. The size, shape, and property of its pores can be designed at the atomic scale, enabling MOFs to provide the exact molecular interactions that maximize adsorption of gases and other low-molecular weight compounds. It is known for permitting the addition of various other functions, including molecular separation, synthesis, catalytic transformation, ion conduction, electric conduction, and drug delivery. It is deemed a promising material that can contribute to a broad range of industries.

<sup>\*</sup>iCeMS: A research institute of Kyoto University that creates new interdisciplinary fields by combining cell science and material science



## 2) About Atomis

	Atomis Inc.
1. Established	February 10, 2015 It is a startup originating from Kyoto University. It was established based on research findings by Kyoto University Distinguished Professor Susumu Kitagawa, who discovered MOFs.
2. Address	448-5 Kajii-cho, Kamigyo-ku, Kyoto-shi, Kyoto, Japan
3. Paid-in capital	181,990,000 million yen (including the capital reserve) (As of March 31, 2019)
4. Business descriptions	Following operations related to porous coordination polymers (PCP / MOF) - Development of applications in the fields of energy and life science - Synthesis, manufacturing, and sales of not only known materials but also new materials - Various evaluations of not only known materials but also new materials - Contract research related to porous coordination polymers (PCP / MOF)
5. Number of employees	9