

For immediate release



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Mitsui Fudosan Co., Ltd. PI-CRYSTAL, INC.

## Verification of Technology Developed by the University of Tokyo Utilizing Innovation Field KASHIWA-NO-HA

# Successful Trial Test of Temperature and Vibration Tracing System for Long-Distance Distribution Using the First Organic Semiconductor Film Device in Japan

Tokyo, Japan, July 1, 2021 – Mitsui Fudosan Co., Ltd., a leading global real estate company headquartered in Tokyo, has conducted a trial test at Kashiwa-no-ha Smart City together with PI-CRYSTAL, INC. to continually measure temperature and vibration during long-distance distribution processes using organic semiconductor film devices\*, a technology developed for the first time in Japan by the University of Tokyo. This resulted in the successful development of a tracing system (hereinafter, "the system") that makes it possible to store various types of information, such as temperature and vibration, on a single thin, lightweight film device and continually obtain data, while sharing the data on the cloud.

With this system, data related to temperature and vibration of cargo can be continually measured during longdistance distribution processes, supporting good distribution practices (GDP) in the medical field and in drug transportation, including COVID-19 vaccines, and HACCP/ISO 22000 compliance for perishable goods such as fresh fish. Moreover, this beneficial data could be used to guarantee logistics quality or propose improvements to quality, which must be further enhanced in the future. The system will further realize safe and secure distribution services in various fields such as chemicals and overseas distribution.

<sup>\*</sup> Reference release: Development of Long-Lasting, Reusable Wireless Distribution Trace Film Using Organic Semiconductor Temperature and Vibration Sensors (Japanese only) <u>https://www.mitsuifudosan.co.jp/corporate/news/2021/0225/</u>



Concept for an ecofriendly, low-cost reusable distribution tracing system with long-lasting film devices using organic semiconductor sensors

This trial test utilized the Innovation Field KASHIWA-NO-HA framework, a verification platform that uses Kashiwa-no-ha Smart City as its setting, and was carried out through collaboration and cooperation with multiple locations and businesses within Kashiwa-no-ha Smart City. Mitsui Fudosan will continue to carry out verification projects and conduct studies for utilizing the organic semiconductor film device developed by PI-CRYSTAL in many types of assets in the Kashiwa-no-ha area. In this way, the Company will aim to establish it as a service and expand it nationwide. Through the initiative of this trial test, Mitsui Fudosan aims to implement safe and secure distribution services in the Kashiwa-no-ha area. We are also conducting studies regarding smart development of the entire neighborhood by implementing this organic semiconductor film device technology in other assets.

### Kashiwanoha Campus Area

Located approx. 30 minutes from central Tokyo, Kashiwa-no-ha Smart City offers tremendous accessibility, and is also an area of accumulated knowledge where the nation's top research institutes such as The University of Tokyo and Chiba University are concentrated within a 2 km radius of Kashiwanoha-campus Station. Kashiwa-no-ha Smart City is being built through a private-public-academic collaboration, and there is proactive engagement in demonstration projects using technology from startups and universities.

Additionally, Innovation Field KASHIWA-NO-HA, a testing platform serving as a receptor for all experimental projects staged in the town of Kashiwa-no-ha, was launched in February 2019. It is conducting various tests and experiments using cutting-edge technologies.

#### ■Innovation Field KASHIWA-NO-HA (<u>https://innovation-field-kashiwanoha.jp/</u>)

Kashiwa-no-ha Smart City has narrowed its focus to the two fields of AI/IoT, including the Kashiwa-no-ha IoT Business Co-creation Lab, and life science/medical, and Innovation Field KASHIWA-NO-HA (Website: https://innovation-field-kashiwanoha.jp/ (Japanese)) serves as a receptor for all experimental projects staged in the town of Kashiwa-no-ha, providing a testing platform for a wide variety of private companies to create new products and services.

•News release for reference: <u>https://www.mitsuifudosan.co.jp/corporate/news/2019/0219\_02/</u>

#### PI-CRYSTAL, INC. (https://www.daicel.com/smart/pi-crystal/)

PI-CRYSTAL is a venture company developed by the University of Tokyo for the purpose of developing, manufacturing and selling flexible, thin film-like devices centered around the film formation technology of organic semiconductor single crystals. It has achieved world-class performance in the organic semiconductor field (electron mobility of more than 10 cm<sup>2</sup>/Vs), a CMOS circuit that allows for low energy consumption during operation and a high degree of transistor integration.

The company will accelerate the development and marketing of organic semiconductor devices, create new value, and expand the sensing business domain by furthering application of this device as a platform.

#### Mitsui Fudosan Co., Ltd. (Kashiwa-no-ha Smart City: <u>https://www.kashiwanoha-smartcity.com/en/</u>)

Mitsui Fudosan is a comprehensive developer that creates new value by striving to resolve social issues through urban development. At Kashiwa-no-ha Smart City, Mitsui Fudosan aims to create a smart, compact city driven by data through the introduction of new technologies such as AI and IoT. It has been selected by the Ministry of Land, Infrastructure, Transport and Tourism as an advanced model project for a smart city towards realizing Society 5.0. Going forward, Mitsui Fudosan will work on developing smart medical institution services for health and medicine. In addition, the Mitsui Fudosan Group believes that it can contribute significantly to the realization of Society 5.0, which is advocated by the Japanese government, and to the achievement of the SDGs, by promoting ESG management, which means advancing businesses based on an awareness of the Environment (E), Society (S), and Governance (G).

■ Mitsui Fudosan Group's Contribution to SDGs <u>https://www.mitsuifudosan.co.jp/english/corporate/esg\_csr/</u>

The Mitsui Fudosan Group aims for a society that enriches both people and the planet under the principles of coexist in harmony with society, link diverse values and achieve a sustainable society, and advances business with an awareness of the environment (E), society (S) and governance (G), thus promoting ESG management. By further accelerating its ESG management, the Group will realize Society 5.0, which the Japanese government has been advocating, and contribute significantly to achieving the SDGs.

\* The initiatives covered in this press release are contributing to four of the UN's SDGs.

Goal 3	Good Health and Well-Being
Goal 9	Industry, Innovation and Infrastructure
Goal 11	Sustainable Cities and Communities
Goal 12	Responsible Consumption and Production

