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Mitsui Chemicals  
IBM Japan  
Nomura Research Institute

**Mitsui Chemicals, IBM Japan, and Nomura Research Institute Agree to Establish a Consortium for Realizing a Resource Circulation Society: Using Digital Traceability to Contribute toward DX in Industries Dealing with Plastic Materials**

Mitsui Chemicals (headquartered in Minato, Tokyo and led by President & CEO Osamu Hashimoto), IBM Japan (headquartered in Chuo, Tokyo and led by General Manager Akio Yamaguchi), and Nomura Research Institute (NRI; headquartered in Chiyoda, Tokyo, and led by Chairman and President & CEO, Representative Director, and Member of the Board Shingo Konomoto) have agreed to establish a consortium to realize a resource circulation society. Planned activities at the consortium include supporting field tests using a resource circulation platform, holding study groups sessions joined by multiple companies, sharing insight and information gained through the consortium, and offering advice to entities both inside and outside of the consortium. The three companies also seek to build an open relationship with other groups, and seek to realize a resource circulation society.

Mitsui Chemicals and IBM Japan launched collaborative efforts this April to build a circulation platform using blockchain technology for ensuring the traceability of materials—a hurdle to clear on the way to achieving a resource circulation society. To accelerate and expand these initiatives, these two companies have now joined NRI with the aim to establish a consortium. The consortium seeks to implement traceability to promote the distribution of recycled materials in the market, and to build a recycling society. To this end, it plans to carry out the activities given below.

● Aims:

1. Promote the use of recycled plastic materials based on traceability
2. Encourage collaboration and support among stakeholders involved in resource recycling
3. Build an incentive system for people and companies that contribute to resource recycling.

● Activities:

Planned activities include supporting field tests using a resource circulation platform, holding study groups sessions joined by multiple companies, sharing insight and information gained through the consortium, and offering advice to entities both inside and outside of the consortium.

- Roles:

The three companies will collaboratively run the consortium, and plan to engage in activities where they can demonstrate their strengths.

Mitsui Chemicals	Provide rich insight and skills regarding monomers, polymers, and other substances, and provide technology and knowledge on recycling and other forms of environmental response.
IBM Japan	Support the use of the blockchain-based traceability platform. Digitize the process for recycling waste products and creating new products, as well as the collaborative operational process among multiple companies in the supply chain, and offer support for making these processes traceable.
NRI	Promote transformation in companies and society by utilizing its insight and experience in business model transformation and digitalization, and leveraging its experience in offering advice to industrial associations and government offices.

- Comments from each company:

Masao Sambe, Executive Officer, Digital Transformation Division, Mitsui Chemicals

"We announced this April that we will build a plastic material circulation platform for solving the key social challenge of recycling, and to thereby achieve the central goal in our 2030 Long-Term Business Plan of being a company that solves social challenges. We have finished a prototype, and we are accelerating efforts toward establishing a platform. By establishing this consortium, we will take the lead in sharing methods and experience and in refining systems and infrastructure while working across different industries."

Yuichiro Shibata, Managing Partner, Strategic Sales, Global Business Services, IBM Japan

"IBM Japan will provide support in building a blockchain-based digital platform by drawing from its extensive insight and skills that were cultivated through engaging in digital transformation for many different companies. We will also consider incorporating the benefits offered by the cloud, such as its swift building process and flexibility, to create a hybrid cloud that links with the existing system. In addition, we will discuss the use of AI. We plan to use IBM® Blockchain Platform with IBM Cloud—a public cloud offering from IBM—for running it. We will contribute toward solving social challenges and toward realizing a resource circulation society by achieving the social implementation of IBM's leading-edge technologies faster than anyone else."

Hirofumi Tatematsu, Senior Executive Managing Director, Division Manager of the Consulting Division, NRI

"NRI aims to solve social challenges through co-creation with a diverse range of partners. This consortium will feature Mitsui Chemicals, a key stakeholder for a recycling society, and IBM, a company that retains vital

technologies for achieving our goal. We welcome more partners to join in and engage in co-creation. NRI will help realize a recycling society by making full use of its strengths in navigating society and companies toward transformation and in solving issues."

After the consortium is established, it looks forward to welcoming other companies that agree with its aims, such as manufacturers that seek to promote recycling their products or making products using recycled materials, companies in the "resourcing industry" that seek to gain information on the materials of collected or dismantled products to create added value for recycled materials, logistics companies looking to create new solutions for their sector, and financial institutions seeking to engage in ESG investments. Participating companies in the consortium will work together to drive efforts in creating a recycling society.

Going forward, Mitsui Chemicals, IBM Japan, and NRI will utilize their individual strengths and engage in collaborative efforts to realize a society that circulates plastics and other materials.

\* Traceability in materials covers the whole resource life cycle. This life cycle covers raw materials like monomers and polymers through to the manufacturing, sales and use of products. It also covers the recycling process thereafter, in which used products are recovered, dismantled, shredded and sorted into raw materials that can be reused to manufacture new products.

\* The "resourcing industry" is described in the "Circular Economy Vision 2020" published by the Ministry of Economy, Trade and Industry in May 2020. This industry includes recycling activities—namely, taking consumed waste products, processing them into recycled materials, and giving them back to manufacturers—as well as work for realizing a stable supply of high quality recycled materials by collecting a broad range of used products from larger geographical regions and by implementing automatic sorting technologies.

\* Blockchain technology is a form of immutable database technology that records all historical information in a continuous chain. Since all parties involved have access and there is no potential for data falsification, the technology achieves traceability by allowing all parties to follow up and see where, when and from whom various raw materials, products and more were acquired.

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