

October 15, 2019
Mitsui Chemicals, Inc.
Elephantech Inc.

Mitsui Chemicals and University of Tokyo Startup Elephantech Form Strategic Partnership

Setting up inkjet-based mass production for flexible PCBs at Mitsui Chemicals' Nagoya Works

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: Tsutomu Tannowa) has agreed to a strategic partnership with Elephantech Inc. (CEO: Shinya Shimizu), a startup company in the printed electronics sector. The two companies will work together to develop production technologies and pursue commercialization for new forms of inkjet-based manufacturing.

In aim of forming a new business for ICT materials, Mitsui Chemicals will use this tie-up to invest in Elephantech and provide access to Nagoya Works in Nagoya, Aichi Prefecture, making the buildings and plant infrastructure here available for Elephantech to use. With this support, Elephantech will target a September 2020 completion date for the construction of a mass production line that uses inkjet technology to manufacture flexible printed circuit boards (PCBs; maximum production capacity: 50,000m²/month). Development will also be carried out toward having an inkjet production line that enables new kinds of manufacturing.

Together, Mitsui Chemicals and Elephantech will pursue production technologies and materials development relevant to inkjet-based printed electronics and additive manufacturing. The companies hope through this to broaden the scope of possibilities available for manufacturing.

Elephantech is pursuing the mission of "Making the world sustainable with new manufacturing technologies." And in an effort to make this a reality, the company is working to expand a flexible PCB production business that uses inkjet printing to manufacture PCBs using just 1/15th the energy and 1/13th the water of conventional processes. Elephantech is also implementing development and market cultivation efforts aimed at broadening the scope of these technologies – with work here including the printing of biosensor materials, as well as the formation of wiring compatible with 3D structures.

Mitsui Chemicals conducts a broad range of business operations, with Mobility, Health Care and Food & Packaging as its targeted business domains. In an effort toward the creation of new businesses and products, the company is also actively pursuing open innovation, such as by forming tie-ups with venture companies.

"Inkjet production technologies are in a different league when it comes to their energy and water consumption – and that makes me confident that they're going to become a standard production technology in the future," said Shinya Shimizu, CEO, Elephantech. "Still, establishing the sort of mass production systems needed to scale things up has been a major issue for engineering startups like us. Given now that we have Mitsui Chemicals allowing us to use its factory infrastructure as-is, however, we'll be able to get a production system together quickly.

“We’ve also got a scheme to cooperate on the technical development front,” Shimizu added. “So then in having also an ideal form of tie-up between a major company and a startup, I think our joint efforts here are going to be a landmark case.”

“At Mitsui Chemicals, we’re always trying to create new customer value and help solve social issues through our business,” said Hideki Matsuo, Representative Director, Senior Managing Executive Officer and CTO, Mitsui Chemicals. “Innovative manufacturing processes with inkjet technologies are a good fit here. They’re quite environmentally friendly and should help to broaden the possibilities sought with materials, so this is something we’re pursuing as a form of manufacturing for the future.

“Capitalizing on the merits of Nagoya as a hub for our company’s processing technologies, we’re going to start with the printed electronics sector,” Matsuo added. “By bringing about innovation right from the materials stage, we aim to expand on inkjet-based additive manufacturing and find broader use for it in society.”

■ Overview of Companies

	Elephantech Inc.	Mitsui Chemicals, Inc.
Established	January 2014	October 1997
Address	4-3-8 Hatchobori, Chuo-ku, Tokyo	1-5-2 Higashi-Shimbashi, Minato-ku, Tokyo
Capital	506 million yen	125.125 billion yen
Main business	Development and servicing of production technologies for printed electronics	Mobility, Health Care, Food & Packaging, Next Generation Business, Basic Materials
No. of employees	25	17,743 (consolidated)

■ Overview of Mitsui Chemicals’ Nagoya Works

Address	1, Tangodori 2-chome, Minami-ku, Nagoya, Aichi Prefecture
Floor space	380,000 square meters (approximately six Nagoya Domes)
Foundation	1950
General manager	Satoshi Ozaki
Main products	ICROS™ Tape (process tape for integrated circuit production), SOLAR EVA™ (photovoltaic encapsulant sheets), SYNTEX™ (high-performance nonwovens), MiRet™ lithium-ion battery (LiB) electrolytes, polypropylene glycol (raw material for polyurethane), TouchFocus™ (next-generation eyewear), etc.

