

**Mitsui Chemicals, Microwave Chemical Complete Setup of  
Demonstration Facility for Innovative Microwave-Based Carbon Fiber  
Production Technology at Mitsui Chemicals' Nagoya Works**

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) and Microwave Chemical Co., Ltd. (Suita, Osaka: 9227; President & CEO: YOSHINO Iwao) today announced that they completed construction in December 2023 of a demonstration facility for innovative, eco-friendly carbon fiber production technology using microwaves at Mitsui Chemicals' Nagoya Works.

The facility began a trial run in January 2024. The companies continue to look at establishing mass production technology and intend to begin supplying carbon fiber samples from the facility within fiscal 2024.



Demonstration facility for carbon fiber production

As was announced on November 16, 2022, Microwave Chemical has contributed to the installation of the demonstration facility by supplying Mitsui Chemicals with all of the

necessary equipment for a microwave-based heating line that uses Carbon-MX™ technology – which integrates the oxidation and carbonization process elements of the carbon fiber production process – while Mitsui Chemicals has set up the entire process, including those elements involving this technology.

By leveraging the ability of microwaves to heat a target substance from the inside, the technology here will enable an innovative process that minimizes unnecessary heat generation. When compared to existing methods, this will significantly reduce the time spent on heat treatment, resulting in a shorter heating process line and thus more compact facilities. Further, since the equipment itself does not reach high temperatures, the technology is expected to provide benefits with regard to equipment costs, energy costs and safety. Mitsui Chemicals and Microwave Chemical have projected that this approach will cut energy consumption by some 50 percent. What is more, if the source of the power used to generate the microwaves is switched to renewable energy in future, CO<sub>2</sub> emissions are expected to be reduced by over 90 percent.

Going forward, both Mitsui Chemicals and Microwave Chemical will employ life cycle assessments as they look to minimize CO<sub>2</sub> emissions throughout their value chains. The companies will endeavor here to meet the rising need for carbon neutrality in industries where carbon fiber is slated for use, including the mobility field.

#### References:

- Press release from May 9, 2022

Mitsui Chemicals and Microwave Chemical Establish an innovative Eco-Friendly CF manufacturing basic technology using microwaves

[https://jp.mitsuichemicals.com/en/release/2022/2022\\_0509/index.htm](https://jp.mitsuichemicals.com/en/release/2022/2022_0509/index.htm)

- Press release from November 16, 2022

Mitsui Chemicals, Microwave Chemical Set to Install Demonstration Facility at Nagoya Works to Advance Innovative Microwave-Based Production Technology for Carbon Fiber

[https://jp.mitsuichemicals.com/en/release/2022/2022\\_1116/index.htm](https://jp.mitsuichemicals.com/en/release/2022/2022_1116/index.htm)

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