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Press Release

September 11, 2024
Microwave Chemical Co., Ltd.
CHUGAI RO CO., LTD.

Strategic Alliance for the Design and Manufacture of Microwave-Based Rotary Hearth Furnaces for Ore Smelting

Microwave Chemical Co., Ltd. ("MWCC") and CHUGAI RO CO., LTD. ("CHUGAI RO") have entered into a strategic alliance for the design and manufacture of microwave-based rotary hearth furnaces for ore smelting.

Currently, the steelmaking and non-ferrous metal smelting industries consume significant amounts of fossil fuels and energy in the ore refining and reduction processes, leading to substantial CO₂ emissions. This is a major challenge facing the industry.

Rotary kilns are commonly used as the mainstream technology in processes such as ore reduction and dust treatment. However, we have decided to focus on rotary hearth furnace, which offer advantages such as space efficiency and ease of handling. Leveraging these features, both companies will collaborate on the design and manufacture of microwave-based rotary hearth furnaces to address the aforementioned challenges.

MWCC has positioned the electrification of metal smelting/mining processes using microwaves as a top priority within our carbon-neutral business strategy, and we have developed a microwave technology platform for mining process called 'Green Mining-MX'.

Last year, MWCC completed the development of a continuous standard bench system that can be used for high-temperature calcination and reaction of various ores using microwaves.

CHUGAI RO has been providing highly efficient industrial furnaces for various industrial fields for about 80 years as a leading Japanese manufacturer of industrial furnaces. In recent years, CHUGAI RO has been focused on developing strategies and technologies to achieve carbon neutrality. As part of this effort, it is actively promoting the adoption of new technologies, such as



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hydrogen combustion and ammonia combustion, which contribute to improved energy efficiency and reduced CO₂ emissions.

Through this alliance, MWCC will leverage its advanced design expertise and experience in microwave technology, while CHUGAI RO will contribute its extensive knowledge and experience in industrial furnaces and rotary hearth furnaces. Together, they will drive the development of innovative rotary hearth furnaces, aimed at reducing energy consumption and CO₂ emissions in the ore smelting process. This initiative will accelerate the steelmaking and non-ferrous metal smelting industries progress toward carbon neutrality and enhance production efficiency by increasing throughput.

Moving forward, the two companies will leverage their respective strengths to develop, design, and manufacture for early commercialization.

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