November 5, 2026
Ferruvia inc.

# IRON FUEL DAY 2026 in Hiroshima

## Toward Widespread Adoption of Iron Fuel

### Challenges and Potential for Industrial-Scale Applications

Ferruvia and Hiroshima University held IRON FUEL DAY 2026 in Hiroshima on November 2, 2026, at Hiroshima University's MIRAI CREA in Higashihiroshima, Hiroshima Prefecture.

The event brought participants up to date on leading iron powder fuel research and demonstration efforts in Europe, while providing an opportunity to discuss technology development and the potential for industrial-scale applications in Japan.

Approximately 30 people attended, including representatives of companies and research institutions as well as students. The program featured an online keynote by Professor Emeritus Philip de Goey of Eindhoven University of Technology (TU/e), a presentation of Hiroshima University's R&D work, a live iron powder combustion demonstration, and a roundtable discussion on the path toward widespread adoption.




Participants watching the iron powder combustion demonstration intently (Hiroshima University MIRAI CREA)

## ■ PURPOSE

Iron powder fuel harnesses the heat released when iron burns and can be used repeatedly by recovering and reducing the iron oxide produced after combustion. As an energy carrier that could replace fossil fuels, it is expected to contribute particularly to the decarbonization of high-temperature industrial heat.

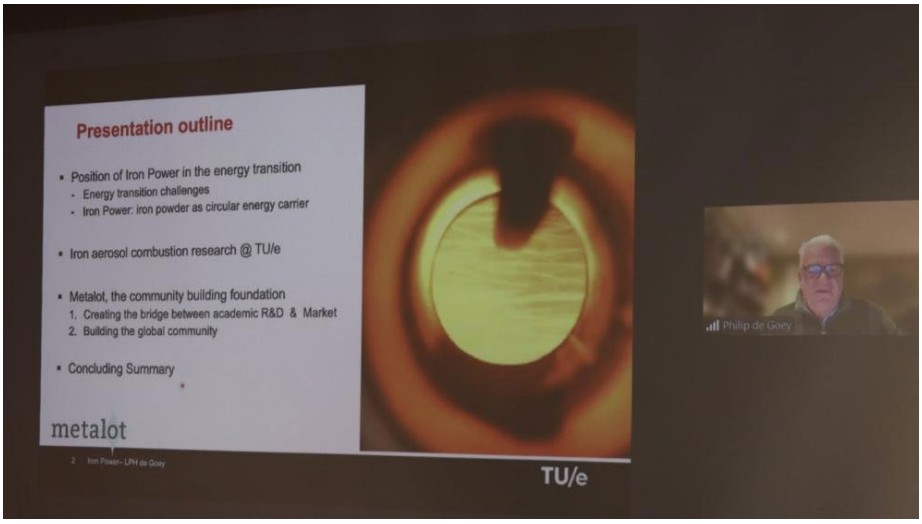
The event was organized to share the current state of research and demonstration projects in Japan and overseas, and to exchange views on the challenges and potential for industrial-scale applications and widespread adoption of iron powder fuel.

## ■ EVENT HIGHLIGHTS

### 1. Keynote | Iron Fuel Research and Demonstration in Europe

Professor Emeritus Philip de Goey of Eindhoven University of Technology (TU/e) delivered an online keynote on developments in iron powder fuel research and demonstration projects in Europe.

He discussed the potential of iron powder as an energy carrier that could complement hydrogen and ammonia, advances from fundamental research to industrial-scale demonstrations, collaboration among industry, academia, and government centered on Metalot, and efforts to build businesses around iron fuel technology in countries around the world.




Professor Emeritus Philip de Goey (TU/e) delivering his keynote remotely

### 2. Technology Presentation and Demonstration | Scaling Up Iron Powder Combustion and the Path to Industrial-Scale Applications

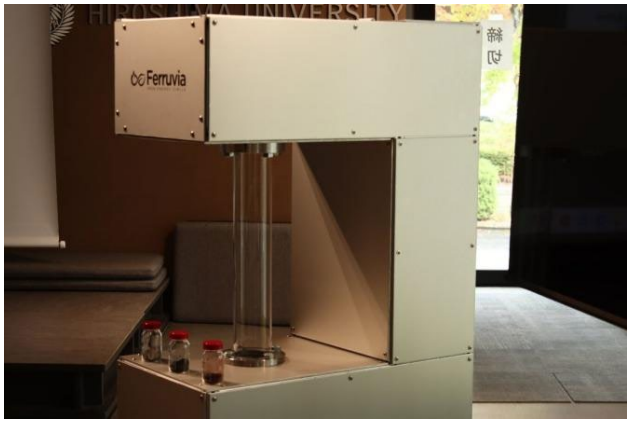
Associate Professor Wookyung Kim and colleagues at Hiroshima University presented research results spanning single-particle combustion studies through to a 5 kW turbulent burner. They also outlined plans to develop MW-scale combustion technology with a view to applications in industrial boilers.

They described efforts toward realizing a circular fuel system encompassing not only iron powder combustion but also the recovery and reduction of the iron oxide produced after combustion.

Following the presentations, students from the Kim Laboratory demonstrated iron powder combustion, and participants watched the combustion firsthand.



Associate Professor Wookyung Kim presenting Hiroshima University's R&D efforts




Iron powder combustion apparatus used in the demonstration

### 3. Roundtable | Toward Widespread Adoption of Iron Fuel Technology in Japan

Researchers and participants from industry exchanged views on the challenges and potential for widespread adoption of iron powder fuel technology in Japan.

The discussion covered the challenges of bringing pioneering European initiatives to Japan, the use of Japan's manufacturing and engineering strengths to develop the technology and build viable businesses around it, and the industry-academia and cross-industry partnerships needed for such business development.

Participants shared a wide range of views and suggestions. These included the importance of progressing steadily toward practical applications through successive quantitative technical evaluations, the potential to build viable businesses using Japan's industrial technologies, and the development of new markets and applications that take environmental value into account.




Participants exchanging views during the roundtable



Participants networking at the venue

## ■ OUTLOOK

### 「Toward MW-Scale Combustion Demonstration and Industrial Boiler Applications」

Ferruvia is advancing iron powder fuel technology from the research stage toward industrial scale, with the aim of decarbonizing high-temperature heat used in industry.

Next, the company will conduct MW-scale burner combustion tests to quantitatively evaluate combustion performance, operational stability, and other key characteristics, while continuing development for applications in existing industrial boilers.

Ferruvia will also pursue collaboration with research institutions and industry to build the full fuel cycle, including iron powder production and supply and the recovery and reduction of iron oxide after combustion.