

Materials Processing Institute Launches Hydrogen Research Agreement

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Author - Alice Bird



The Materials Processing Institute has established a research agreement to examine the potential impact on industrial processes of using hydrogen as an alternative fuel source.

The three-year agreement, with Swedish industrial heating technology company Kanthal and Scunthorpe-headquartered Trent Refractories, will focus on the effect of hydrogen on refractories.

Refractories are the heat resistant materials that form the linings for high-temperature furnaces, crucibles, ladles and kilns - primarily used in the iron and steel industry.

It will also test a range of electrical elements, for use in high temperature applications to discover any advances that need to be made to ensure full operating demands are fulfilled under an aggressive hydrogen atmosphere.

Chris McDonald, chief executive of the Teesside-headquartered Materials Processing Institute, said: "The results of this collaborative research programme could have far-reaching effects given the range of industries that depend on refractory solutions, including iron and steel, aluminium, glass, power generation, petrochemicals and chemicals, and cement.

"Hydrogen is widely used here at the Institute, and it is crucial that we assess how it is used to help deliver long term solutions that shape and support the UK's transition to a low carbon economy."

Bob James, technical collaboration lead at the Institute, added: "It's already proven that hydrogen is an alternative clean fuel source capable of powering the majority of industrial processes. However, research is essential to assess how hydrogen may impact on the processes themselves, including its effect on refractory lining systems, the corrosion of certain compositions, and accelerated wear."

Katy Moss, managing director of Trent Refractories Ltd and the president of the Institute of Refractory Engineers, said: "We are very much looking forward to working with such dynamic partners. It means a lot to the team here at Trent Refractories, to be part of the solutions that enable our foundation industries not only to survive but to sustainably thrive."

Jesper Ejenstam, R&D manager of Kanthal, added: "Industry is entering a new age of decarbonisation with a mass shift towards electrification and the use of clean fuels such as hydrogen. Kanthal is proud to be part of the research that will ensure such innovations are industry ready."