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hte supports research on metal-free catalysts to produce CO from CO_2

HEIDELBERG, Germany [October 17, 2023] hte – the high throughput experimentation company was selected by Stanford School of Humanities and Sciences researchers to perform an R&D project on reverse water-gas shift using novel metal-free catalysts to produce CO from CO_2.

hte has gained great expertise in the field of high throughput technology over the past 24 years through the successful development, design, construction, and operation of R&D technology solutions. hte's flexible high-temperature units enable industrially relevant process conditions to be reproduced. In the case of reverse water-gas shift (rWGS), the test system combines high temperature with elevated pressure for accelerated catalyst testing.

The reverse water-gas shift process is an important emerging topic, enabling the smart integration of CO_2 as a feedstock into existing petrochemical refineries. Renewable H_2 and CO_2 from industrial exhaust streams, biogas plants, or direct air capture can be converted to sustainable syngas, which can be utilized by conventional syngas conversion units followed by product upgrading toward fuels and chemicals.

hte was pleased to support and speed up the testing of metal-free rWGS catalysts developed by Matthew Kanan and his co-workers and is looking forward to further opportunities to investigate these materials in support of syngas applications.

"Three months of high throughput testing at hte provided data that would have taken many years to obtain in my lab," said **Matthew Kanan, Associate Professor of Chemistry at**

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Stanford School of Humanities and Sciences. "We were very pleased with the performance of the metal-free rWGS catalysts and are excited to continue their development for scalable production of sustainable fuels."

"Working together with universities on research projects is really important to us because we are able to speed up R&D processes with high throughput methods in an academic context. We understand the challenges of developing new catalysts and processes, and are committed to delivering innovative solutions and providing a significant advantage in achieving a short time to market," comments **Wolfram Stichert, CEO of hte.**

Figure 1: Flexible 16-fold parallel high-temperature test system

About hte

At hte – the high throughput experimentation company, we make R&D in the area of catalysis faster and more productive. We enable cost-effective innovations and reduced time to market for new products, thereby allowing our customers in the energy & refining, chemical & petrochemical, and environmental industries to keep ahead of the competition.

Our technology and services comprise:

- **R&D Solutions**: Highly efficient contract research programs at hte's state-of-the-art laboratories in Heidelberg, Germany
- **Technology & Digitalization**: Integrated hardware and software solutions, enabling our customers to establish highly efficient R&D workflows in their own laboratories.

Our customers benefit from broad technical and scientific expertise, exceptional customer orientation, complete end-to-end solutions, and outstanding data quality. Our close ties with BASF guarantee long-term orientation and stability.
For more information, visit our website www.hte-company.com.

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