



PRESS RELEASE

hte develops accelerated catalyst aging protocol for hydrotreatment application together with MOL Group

HEIDELBERG, Germany [November 15, 2018] hte – the high throughput experimentation company has been commissioned by MOL Group to develop an accelerated catalyst aging protocol for a diesel hydrotreatment application. With the results, MOL will be able to better predict long-term performance when selecting refining catalysts.

Selecting the right catalyst in a refinery is crucial for optimizing economic profit and efficiency. When selecting a new diesel hydrotreatment catalyst it is important to consider the start of run activity and selectivity, but also to predict the lifetime, which can be several years. Evaluating long-term stability can be costly and time-consuming. Hence, hte has been commissioned by MOL to develop an accelerated catalyst aging protocol. This protocol simulates catalyst deactivation under realistic process conditions but with a much reduced test duration. Aging catalysts under actual process conditions provides more reliable information about long-term stability than empirical laboratory aging protocols. The project was completed in the third quarter of 2018. With the results, MOL is able to predict the long-term activity of its pre-selected catalysts.

“Diesel hydrotreatment is an important refinery process. Being able to predict catalyst activity during the entire life span gives us more confidence in selecting the right catalyst for our refineries,” says Thomas Raetzsch, Head of Downstream Research and Development at MOL Group.

“We are pleased that MOL has chosen to work with hte again. We look forward to further strengthening our partnership with MOL and our role in the European refining market,”



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says Wolfram Stichert, CEO at hte. He adds that this type of protocol is adaptable to other processes and will be included in hte's R&D Solutions offering.

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 industry 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 Solutions:** integrated hardware and software solutions, enabling our customers to establish high throughput workflows in their own laboratories.

Our customers benefit from a broad technical and scientific expertise, an exceptional customer orientation, complete end-to-end solutions, and an 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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About MOL

MOL Group is an integrated, international oil and gas company, headquartered in Budapest, Hungary. It is active in over 30 countries with a dynamic international workforce of 26,000 people and a track record of more than 100 years in the industry (www.molgroup.info/en/about-mol-group/mol-group-at-a-glance).

MOL Group's Downstream division is made up of different business activities that are part of an integrated value chain. This value chain turns crude oil into a range of refined products, which are moved and marketed for household, industrial and transport use. The products include, among others, gasoline, diesel, heating oil, aviation fuel, lubricants, bitumen, sulphur and liquefied petroleum gas (LPG). In addition, it produces and sells petrochemicals worldwide and holds a leading position in the petrochemical sector in the Central Eastern European region (www.molgroup.info/en/our-business/downstream).

MOL's Downstream Research&Development department aims to contribute to technological and business competitiveness of MOL Group via innovations, product development and other technical solutions. We identify new opportunities, assess them from both technical and business point of view, perform proof of concept experimental work and propose viable implementation solutions for the proven projects. We perform our activities with professional dedication in close alignment with our clients.

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