

Press release

thyssenkrupp Uhde

30.03.2022

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thyssenkrupp, Holcim and TU Berlin kick off research project on CO₂ reduction

- **Carbon capture by means of a new amine scrubbing process**
- **Goal is to reduce emissions in existing cement plants**

The cement industry is working on reducing CO₂ emissions in a number of ways. Why? Because even with the sole use of renewable energies, the raw materials used in cement production result in CO₂ being released and emitted to the atmosphere. thyssenkrupp Uhde, Holcim and the Technische Universität Berlin have therefore partnered up in a joint project to investigate the use of a novel amine scrubbing technology for carbon capture. The goal is to significantly reduce CO₂ emissions from existing cement plants and at the same time utilize the captured CO₂ for other applications. In concrete terms, this includes the development of new mass transfer process equipment that is more efficient and resilient to contaminations. The project is being funded by the German Federal Ministry for Economic Affairs and Climate Action under the funding number 03EE5103A.

Dr. Ralph Kleinschmidt, Head of Technology, Innovation and Sustainability at thyssenkrupp Uhde: "Amine scrubbing is already commonly used to recover CO₂ from process gases or exhaust gases. Now, we are developing the technology further and optimizing it for the cement industry. Additional applications for capturing CO₂ direct at source, such as in waste incineration plants, are also possible."

Arne Stecher, Head of Decarbonization at Holcim Germany: "Carbon capture will be a must for cement plants in the near future. That is why we are testing different processes to find the best carbon capture technology. Carbon capture by means of amine scrubbing is a promising solution. I am pleased that, together with our partners, we can test the use of this innovative process in the cement industry."

Prof. Dr.-Ing. Jens-Uwe Repke, Chair of Process Dynamics and Operations Group at TU Berlin: "Developing innovative carbon capture technology for gas treating and improving the efficiency, environmental compatibility, and sustainability of existing carbon capture processes, as well as putting them into practice, is an urgent and crucial task that makes a direct contribution to climate protection. These goals can only be achieved if industry cooperates closely with research facilities like universities."

The performance and efficiency of this equipment is being tested using real exhaust gas at the cement plant located in Beckum, Germany. This is paving the way for commercial use. Various possibilities for using the captured CO₂ are also being examined, for example methanol or sustainable fuels. With this process, the partners are seeking to make a contribution to the reduction of greenhouse gases, especially in existing cement production plants. These can then be retrofitted with equipment for capturing CO₂ from the process gas without further adapting the production process.

About thyssenkrupp Uhde

thyssenkrupp Uhde combines unique technological expertise and decades of global experience in the engineering, procurement, construction and service of chemical plants. We develop innovative processes and products for a more sustainable future and thus contribute to the long-term success of our customers in almost all areas of the chemical industry. Our portfolio includes leading technologies for the production of base chemicals, fertilizers and polymers as well as complete value chains for green hydrogen and sustainable chemicals. www.thyssenkrupp-uhde.com

About the Holcim Germany Group

Holcim Germany is one of the leading companies for innovative, sustainable and digital building products and solutions in Germany. As a pionier in sustainable construction, the employees of Holcim develop tailor-made solutions for builders, civil contractors, architects and engineers - coupled with a clear focus on climate protection and a circular economy. Our mission: To build more with less. Holcim embraces diversity: The Group employs about 1,800 people of 36 different nationalities at around 130 locations in Germany and the Netherlands. Holcim Germany is a subsidiary of the world's leading building materials group Holcim Ltd.

About TU Berlin

TU Berlin is one of Germany's largest technical universities. With 49 Bachelor's and 89 Master's courses on offer, there are currently around 34,000 young people enrolled at the university. About 26 percent of its students come from abroad. 7,800 people research, teach, learn and work at the TU Berlin. In and around the capital, TU Berlin is the only university that offers engineering subjects. Bringing together engineering and natural sciences, planning and social sciences, economics and humanities, it trains the young talents urgently needed by industry and society.

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