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Transfer of knowledge from the laboratory to practice - Technical center opened at LIKAT in Rostock

Chemists at the Leibniz Institute for Catalysis in Rostock, LIKAT, can now test the application readiness of their laboratory findings themselves on a pilot scale. The institute's new pilot plant, which was officially opened on July 4, serves this purpose. Among other things, it provides space for test rigs for chemical reactions in the kilogram range, bringing basic research in particular closer to practical applications. The pilot plant was built in a construction period of about three and a half years and was funded by the federal government and the state of Mecklenburg-Western Pomerania to the tune of about 12 million euros.

With the possibilities of the pilot plant, LIKAT will in future also be able to participate in those tenders for funding projects that require proof of the functioning of laboratory chemistry in the kilogram range. In the opinion of its director, Prof. Dr. Matthias Beller, this will enable the Leibniz Institute to fulfill its mission, as laid down in its statutes, even more clearly than before: to conduct cutting-edge basic research and to apply the findings to practical applications.

The main focus of LIKAT's research is on new catalysts and reactions that enable sustainable chemistry based on renewable raw materials and energy. Hydrogen plays a special role here as an energy carrier and raw material, provided it is obtained from renewable sources. At the pilot plant, for example, ways of CO₂-neutral production and storage of green power and raw materials from hydrogen are being tested. In addition, the Rostock researchers want to make their specially developed catalysts available for semi-industrial uses. There is no research facility in Germany that can do this on this scale. According to Matthias Beller, the pilot plant will thus also develop its international appeal.

With the help of a grant from the state's Ministry of Economics, the pilot plant supplies itself with electrical energy via a photovoltaic system. Green hydrogen is produced there via electrolysis and CO₂ from the air. Both raw materials are to be processed at the pilot plant in innovative processes to produce e-fuels as well as energy storage media and basic chemicals such as kerosene and methanol. All chemical processes require new catalysts, which are being developed at LIKAT. For example, there are no market-ready solutions yet for CO₂ capture from the atmosphere.

In addition to LIKAT researchers, start-ups and established companies will be able to work hand in hand at the

Technikum will be able to work hand in hand and benefit from each other. Among the first projects now starting there is the development of a demonstrator for so-called hydrogen batteries, which LIKAT is developing together with the APEX Group.



The new pilot plant (left, red facade) at the Leibniz Institute for Catalysis (building complex to the right) blends into the Südstadt science campus. Foto: LIKAT/Thomas Müller

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