



Material and component development for electrolysis processes

From catalysts to industrial electrolysis



According to your specifications, we develop customized solutions for every electrolysis problem.”

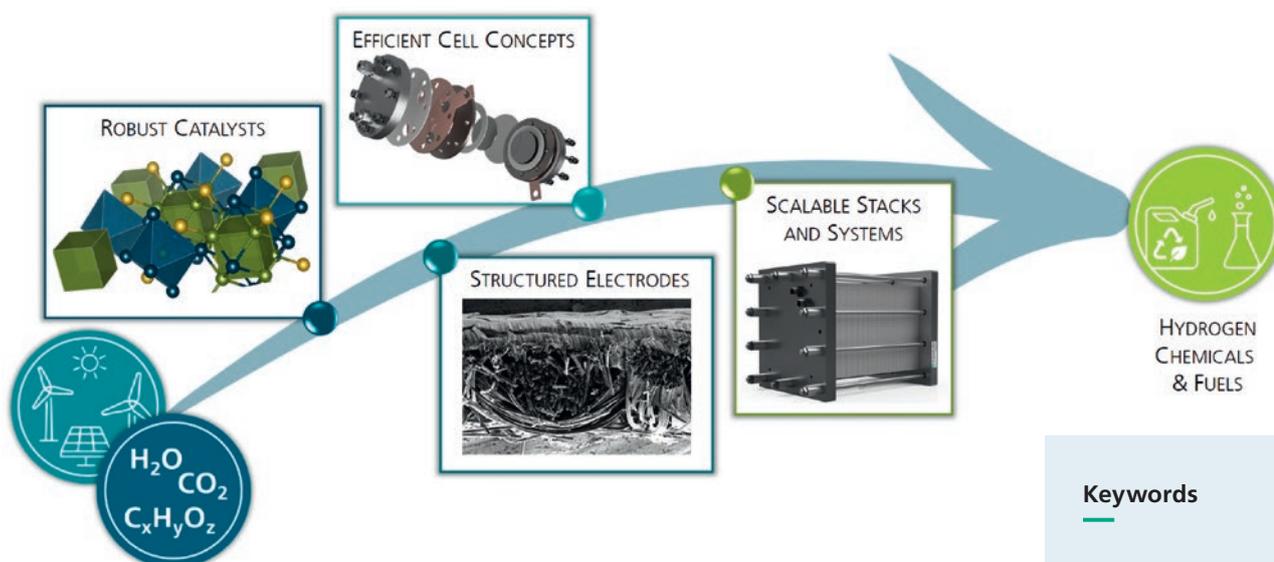
Electrolysis for a sustainable future

Electrolysis technologies are one of the cornerstones of a successful energy transition. By directly using renewable energies for chemical processes, electrolyzers offer a high potential to replace existing processes based on fossil fuels.

A key to optimizing electrolyzers is the electrolysis stack, which is tailored to the targeted chemical conversion. Accordingly, the design of high-performance and components is required for each application.

Industrial sectors

- Chemical industry
- Steel industry
- Cement industry
- Mechanical engineering
- Plant construction



Keywords

- Catalyst
- Electrodes
- Water electrolysis
- Co-electrolysis
- Electrosynthesis

Electrolysis process development

At Fraunhofer UMSICHT, all relevant work steps for the industrial establishment of an electrolysis process are addressed – from catalyst, cell and stack to process design. According to your specifications, we develop customized solutions for every electrolysis problem.

Our portfolio includes the development of high-performance and robust catalysts and takes a holistic approach to integration into functional electrodes. These form the basis for individual, highly efficient cell and stack concepts, which are designed to meet your (electro)chemical and process engineering requirements. A recording and evaluation of the process structures and economic key figures rounds off our offer for you.

Our sustainable solutions are based on materials and components using non-critical raw materials while maintaining high performance and exceptional durability. The focus is always on an intensive dialog in order to be able to realize your wishes in the best possible way.

Our service

We support you in all matters concerning electrolysis technologies: be it technical and commercial consulting for your projects, the development of new materials and components for your electrolyzers or the piloting of new electrolysis processes.

Through our many years of experience in the field of electrolysis processes, we can provide you with goal-oriented support at every stage of development and adapt to your individual needs. In doing so, we make use of our modern laboratory and pilot plant equipment, which enables us to realize nearly any electrolysis technology up to the kilowatt scale.

Your benefit

A profitable electrolysis process requires a precise interplay of materials, components and process parameters. Here we offer a holistic solution from conceptual design and material development to pilot-scale implementation, so that you naturally receive a tailor-made solution.

By working with us, we can help you create a prudent future based on sustainable yet profitable electrolysis processes.

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