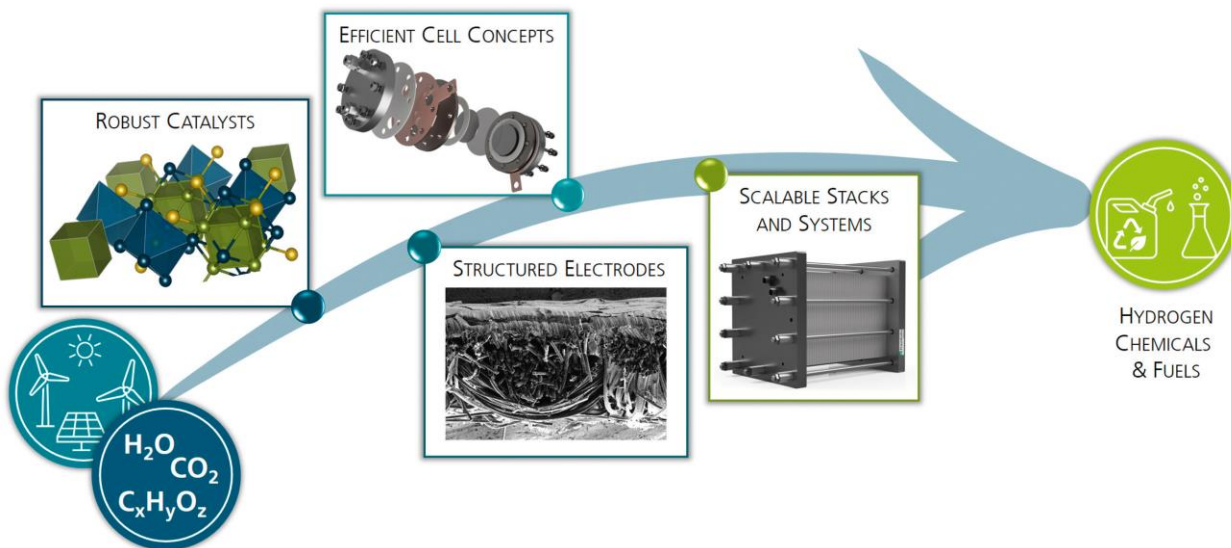


Material and Component Development for Electrolysis Processes [From Catalysts to Industrial Electrolysis]

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.



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.

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.

Fraunhofer is one of the world's largest applied R&D organizations, with nearly 76 research units in all sectors of industry, 32000 employees and an annual outlay of Euros 3.4 billion. Of this sum, 3.0 billion euros is generated through contract research. Our global footprint is very strong, with offices and research centers in the Europe, USA and Asia. Some of our renowned innovations are the MP3 format, the white LED, the smallest of cameras. Fraunhofer covers the entire spectrum of energy (Renewables, Storage, E-Mobility, Grid, Hydrogen...) across the value chain from materials to testing and certification. Fraunhofer has been active in India since the past several years, bringing innovative technologies and research competence to India. Fraunhofer in India is the chosen R&D and innovation technology partner of some of the major players in the field of Energy, Environment, Automotive, Electro-mobility, Materials, Production Technology and Smart Cities working with Industry, Government and Public Sector.

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Kindly get in touch with us if you are interested in this technology or require further information.
Thanks and Regards,

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