

H2 Giga - DegradEI³

Identification of degradation mechanisms & development of life prediction methods for AEL, PEMEL & HTEL electrolyzers

Key Facts



Funding Agency
BMBF



Duration
04/2021 - 03/2025



Coordinator
Dechema Forschungsinstitut
(DFI)



Partners

- Deutsches Zentrum für Luft- und Raumfahrt (DLR)
- Zentrum für Brennstoffzellen Technik GmbH (ZBT)
- Fraunhofer-Institut für Produktionstechnik und Automatisierung (Fh-IPA)



Website
<https://www.wasserstoff-leitprojekte.de/>

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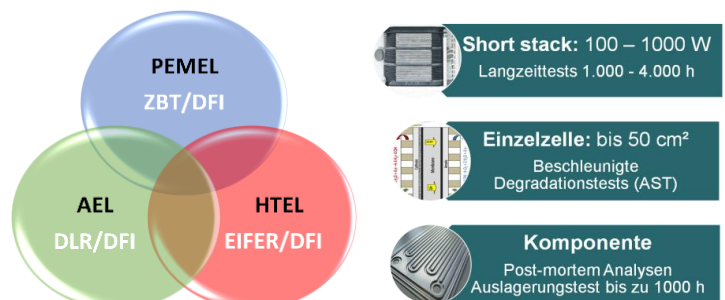
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Project Objectives

H2Giga - DegradEI³ aims at advancing the understanding of the degradation mechanisms of the three types of electrolyzers considered, namely alkaline (AEL), proton exchange membrane (PEMEL) & High-temperature (HTEL). The target is to analyze the evolution of the degradation by scaling-up from cell to short-stack. Several characterization methods will be used as well as modelling. In addition, taking into account these results, life prediction methods will be developed. In turn, these findings will be transferred to the industry in order to increase the performance and the durability of the single unit and module.

EIFER's Contribution

EIFER is involved in the high temperature steam electrolysis. EIFER will perform long-term tests at cell and short stack to assess the degradation rate. Thereafter, multimodal approach will be used in order to understand the degradation mechanism and provide potential detrimental layers to the electrochemical reactions. Finally, strategy to compensate the degradation will be developed and tested.



Source: DFI

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