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INSTITUTE OF ENERGY PROCESS ENGINEERING AND CHEMICAL ENGINEERING

PROFESSORSHIP OF ENERGY PROCESS ENGINEERING

ArcAMAT

Advanced materials engineering for arc plasma-assisted production of hydrogen-containing syngas for clean energy utilization

CHALLENGE

In the context of plasma-assisted gasification of waste, especially with steam plasma for hydrogen production, high electrode erosion rates lead to uneconomical plant operating times.

OUR PROJECT

Development of advanced electrode materials with high mechanical and chemical resistance to reduce electrode erosion under the influence of the electric arc and reactive gases. Furthermore, new electrode geometries with a monolithic three-dimensional structure are being developed and manufactured using additive processes in order to achieve better heat transfer during water cooling of the electrodes and to minimize thermally induced degradation of the electrodes.

PARTNERS

- AGH University of Krakow
- DTU Technical University of Denmark
- DBI Virtuhcon GmbH

FUNDING

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DURATION

September 2024 – August 2027 (3 years)

„Diese Maßnahme wird mitfinanziert mit Steuermitteln auf Grundlage des vom Sächsischen Landtag beschlossenen Haushaltes."

SACHSEN