HAVER & BOECKER CONDUCTS RESEARCH WITH

Together with partners from applied science and industry, we conduct research in various projects in order to realise and further develop technologies making a contribution to a successful energy transition:

- **Referenzfabrik.H2**
  In collaboration with Fraunhofer IWU and a consortium of around 30 companies, Haver & Boecker is developing a concept for the series production of PEM-electrolysers.

Source: Referenzfabrik.H2

- **HygO**
  In the joint funding project with BMUV, Fraunhofer IWU, and industry partners, autonomous, hydrogen-based microgrids for hydrogen production are being developed in Namibia.

- **H2ExSTOP**
  In this BMBF-funded project, basic principles for explosion protection decoupling during the use of hydrogen along the entire value chain are being developed.

Fraunhofer IWU

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

Federal Ministry of Education and Research

ABOUT HAVER & BOECKER

With decades of experience in the production and processing of metal wire mesh, the experts at Haver & Boecker know what it takes to manufacture components with diverse requirements. In addition to the highest precision and care, an exceptional drive for innovation defines our actions across all areas of wire mesh production. So do not hesitate to contact us with your project ideas and challenges.

You can find further information free of charge in our download center using the code **"Hydrogen"**:

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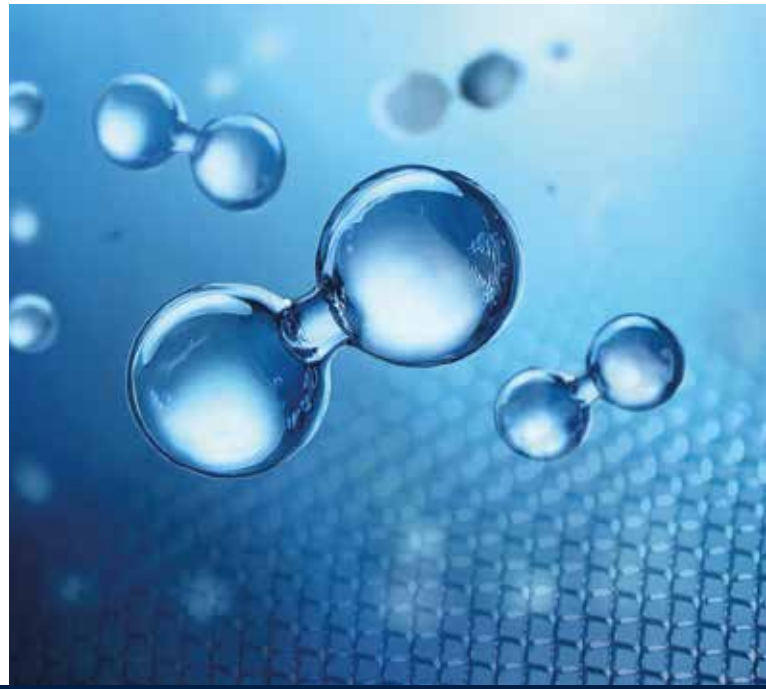
HAVER & BOECKER

DIE DRAHTWEBER

HYDROGEN.

WIRE MESH FOR A SUSTAINABLE FUTURE.



HYDROGEN PRODUCTION & RECONVERSION

Alkaline- / Solid-oxygen-electrolysis
Wire mesh as an electrode:

- Maximum surface area due to porous, uniform structure
- Excellent electrical conductivity
- Individual customisation
- Fast and flexible availability of a wide range of specifications
- Preferred material: nickel

Source: Referenzfabrik.H2

PEM-electrolysis / fuel cell
Wire mesh as a gas diffusion layer (GDL) and as a porous transport layer (PTL):

- Even distribution of water, hydrogen and oxygen due to precise geometric structure
- Minimal layer thickness combined with high stability enable optimum power density
- Manufactured using a screen printing process
- Preferred materials: stainless steel and titanium

CUSTOMISABILITY

The highest standards of efficiency and quality in hydrogen technologies require innovative solutions – we utilise our wide range of processing options and develop the optimum product to meet your requirements:

- Cutting and lasering
- Stamping and calendering
- Annealing and sintering
- (Laser) welding
- Injection moulding

This high vertical range of manufacture enables Haver & Boecker to produce specific customised products. Thanks to our in-house toolmaking department with decades of experience and a modern works laboratory that carries out bubble point tests in accordance with SAE ARP 901 for quality assurance, for example, we are able to develop the optimum customised solution for you.

FILTRATION & TREATMENT

Refuelling filters

- Laser-welded wire mesh laminates on support bodies made of stainless steel, Hastelloy, Inconel, and more
- e.g., for high-pressure applications (>350 bar)
- Very small pore sizes possible (<10 µm)

Filter elements with plastic overmoulding

- Various plastics, such as PA, PP, or EPDM
- Filtration of different kinds of contamination (e.g. after hydrogen production or in peripheral systems)
- Optionally with a sealing function

Flame and spark protection

- Used in e-mobility, chemical industry, gas heaters
- Safety component prevents flame flashback into the gas piping
- Optimal heat distribution due to uniform pore structure