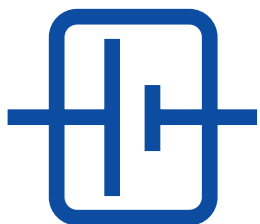
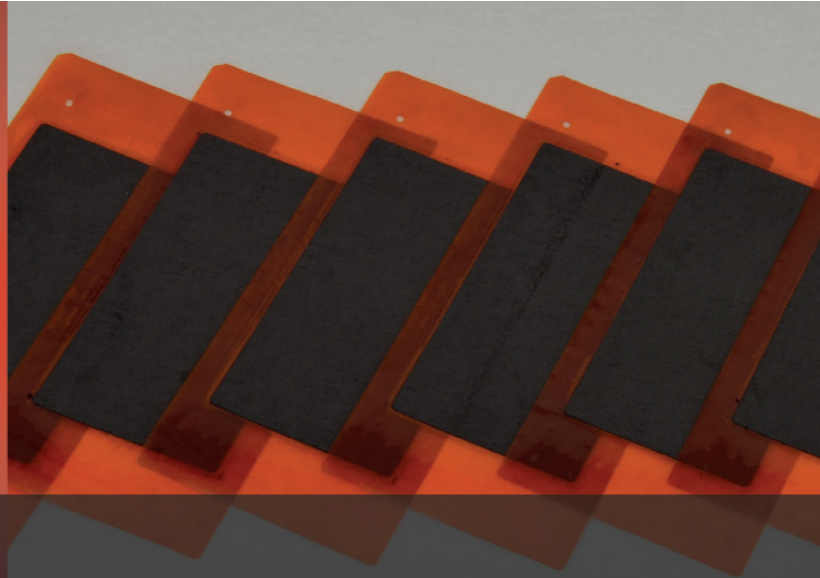


Fuel Cell Technology

Dapozol[®] Membrane Electrode Assemblies

Dapozol[®] Membrane Electrode Assemblies

MEAs with excellent performance and high chemical, thermal and mechanical stability



Danish Power Systems[®]



Company Profile

Danish Power Systems specializes in the development and manufacture of the core component of fuel cells, the membrane electrode assembly (MEA).

HTPEM (High Temperature Polymer Electrolyte Membrane) fuel cells can use all fuels – methanol, diesel, natural gas - that can be converted into a hydrogen containing gas. The conversion is performed through a reformer.

The fuel cells are operated at 140-180 °C. At this temperature the catalyst is highly active and not poisoned by impurities in the fuel, e.g. carbon monoxide.

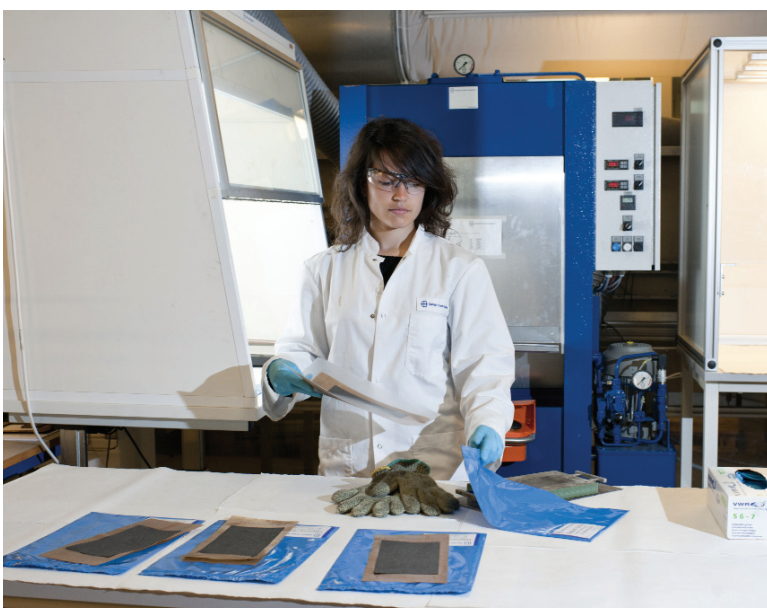
This is made possible by using PBI (polybenzimidazole) as the ionic conducting membrane material. PBI is a thermally highly resistant material and less expensive than the membrane materials used for traditional PEM fuel cells.

The higher temperature eliminates problems associated to the water balance and facilitates less system complexity.

Surplus heat from the fuel cells can be used for further electricity generation and heating or cooling purposes due to the high temperature.

The MEAs can be manufactured in many different sizes depending on the customer requirements.

We always have the customer in focus, and we believe that collaboration and good relations are of crucial importance for the deployment of the HTPEM fuel cells.

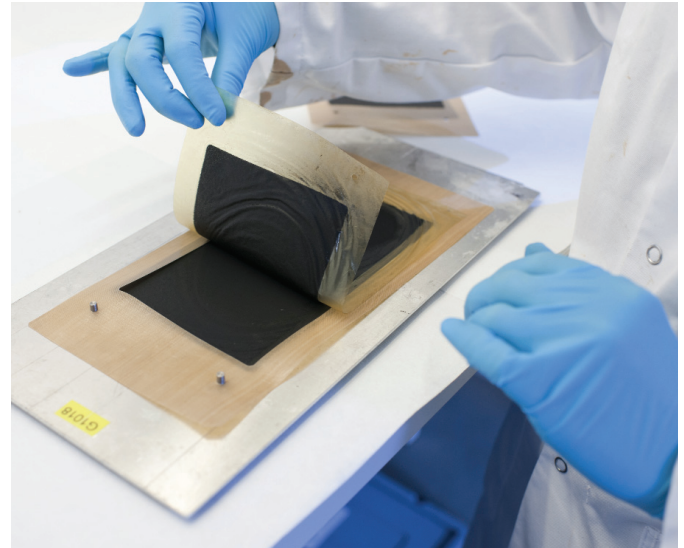


Products

Dapozol[®] Membranes

Dapozol[®] membranes produced from high molecular weight polybenzimidazole (PBI)
Research on chemical and physical modifications for improvement of the membrane properties:

- Synthesis of PBI and derivatives
- Cross-linking
- Blends
- Composites



Dapozol[®] Membrane Electrode Assemblies

Production of Dapozol[®] MEA's for HTPEM
with an area in the range of 10 - 400 cm²

Characteristics:

- Pt based catalysts
- Carbon based electrode material
- Edge reinforcement for easy implementation



Membrane and MEA Performance

Acid doped membranes with excellent chemical, thermal and mechanical stability
High proton conductivity at 140-200 °C
and nearly zero water drag:

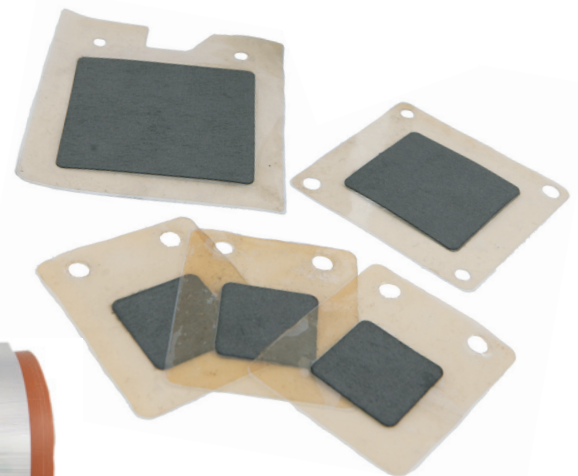
- Temperature of operation up to 200 °C
- No humidification required
- Very high CO tolerance above 150 °C

MEA lifetime and durability:

- > 8,000 hours by continuous operation
- > 140 start-up cycles during 7,000 hours

Our special competencies

Electrode materials
Membrane materials
Electrolysis components
Materials science in general
Training
Consultancy





Danish Power Systems®

HTPEM Fuel Cell Technology

The High Temperature PEM fuel cell technology delivers clean energy and very high efficiency.

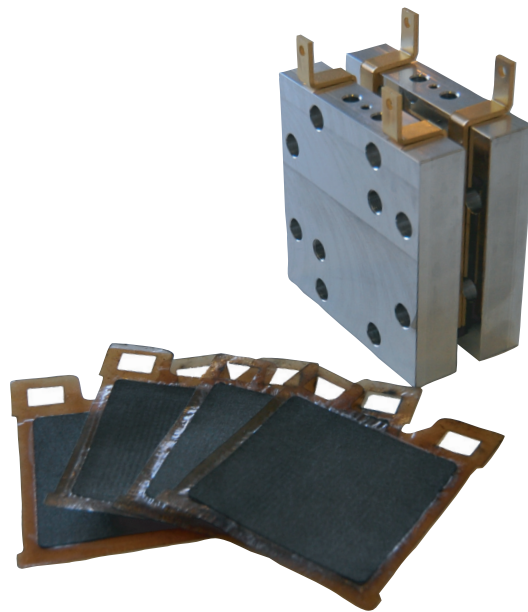
Danish Power Systems delivers world class and customised critical MEA components.

Danish Power Systems is a research based development company founded in 1994, working in the fields of energy and chemistry.

Our mission is to promote and develop environmentally sustainable technology to the benefit of our business partners.

Danish Power Systems, the DPS-logo and Dapozol® are registered trade marks.

Danish Power Systems® is a member of The Danish Partnership for Hydrogen and Fuel Cells.



For a confidential consultation and further information, contact:

Danish Power Systems

Denmark - Main office:

Danish Power Systems ApS

Technical University of Denmark
Kemitorvet, Building 207
DK-2800 Lyngby
Denmark
Phone: (+45) 4587 3934
Fax: (+45) 4587 3933
E-mail: daposy@daposy.com
Web: www.daposy.com

DPS International:

South Korea - Sales agent:

IoneerCell, Inc.

C-313, Sangmyung University,
31 Sangmyungdae-gil,
Dongnam-gu Cheonan,
Chungnam 330-720
Republic of Korea
Phone: (+82) 41 550 5315
Fax: (+82) 41 550 5315
E-mail: ioneercell@gmail.com
Web: www.ioneercell.co.kr

India - Sales agent:

Vispadh Group

15721, S3, Ashok Shri Kamakshi
4th Street, Lakshmi Nagar
Naganallur
Chennai - 60061 Tamil Nadu
India
Phone: (+91) 984 154 2653
Mail: shriram_v100@yahoo.co.in