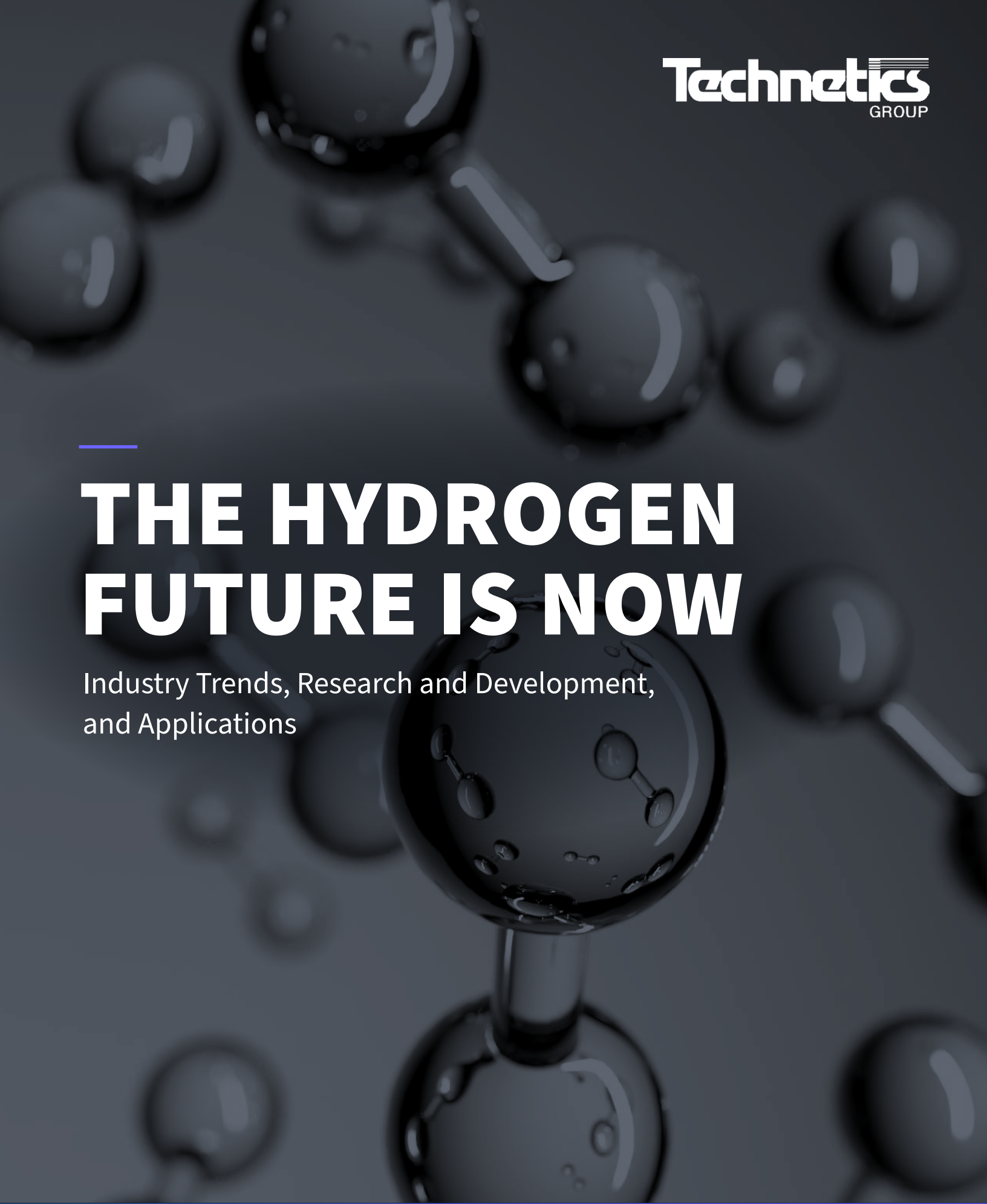


Technetics GROUP

THE HYDROGEN FUTURE IS NOW

Industry Trends, Research and Development, and Applications

Trends

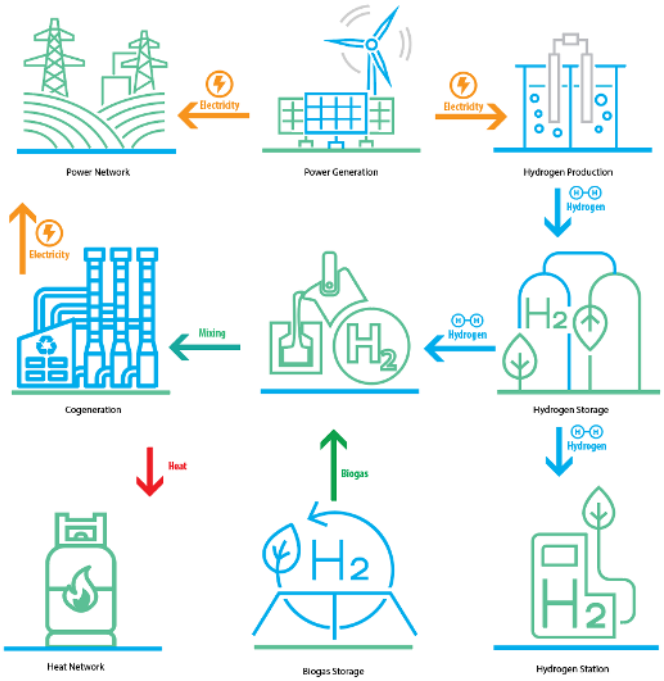
How Hydrogen May Be Used in the Power Lifecycle

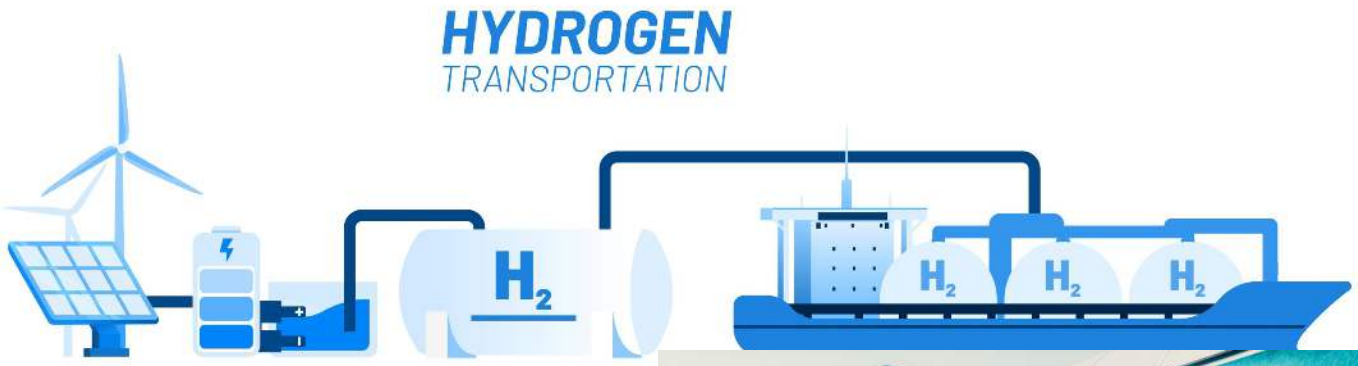
Storage solutions for renewable energies provide more flexibility to the grid

- Using electrolysis (clean H2)
- Storage of excess renewable energy during high-production cycles
- Generation of power during low production cycles of renewables

Stored hydrogen can be used for:

- Production of electricity with fuel cells for mobility
- Injection in the gas network for heating and electricity

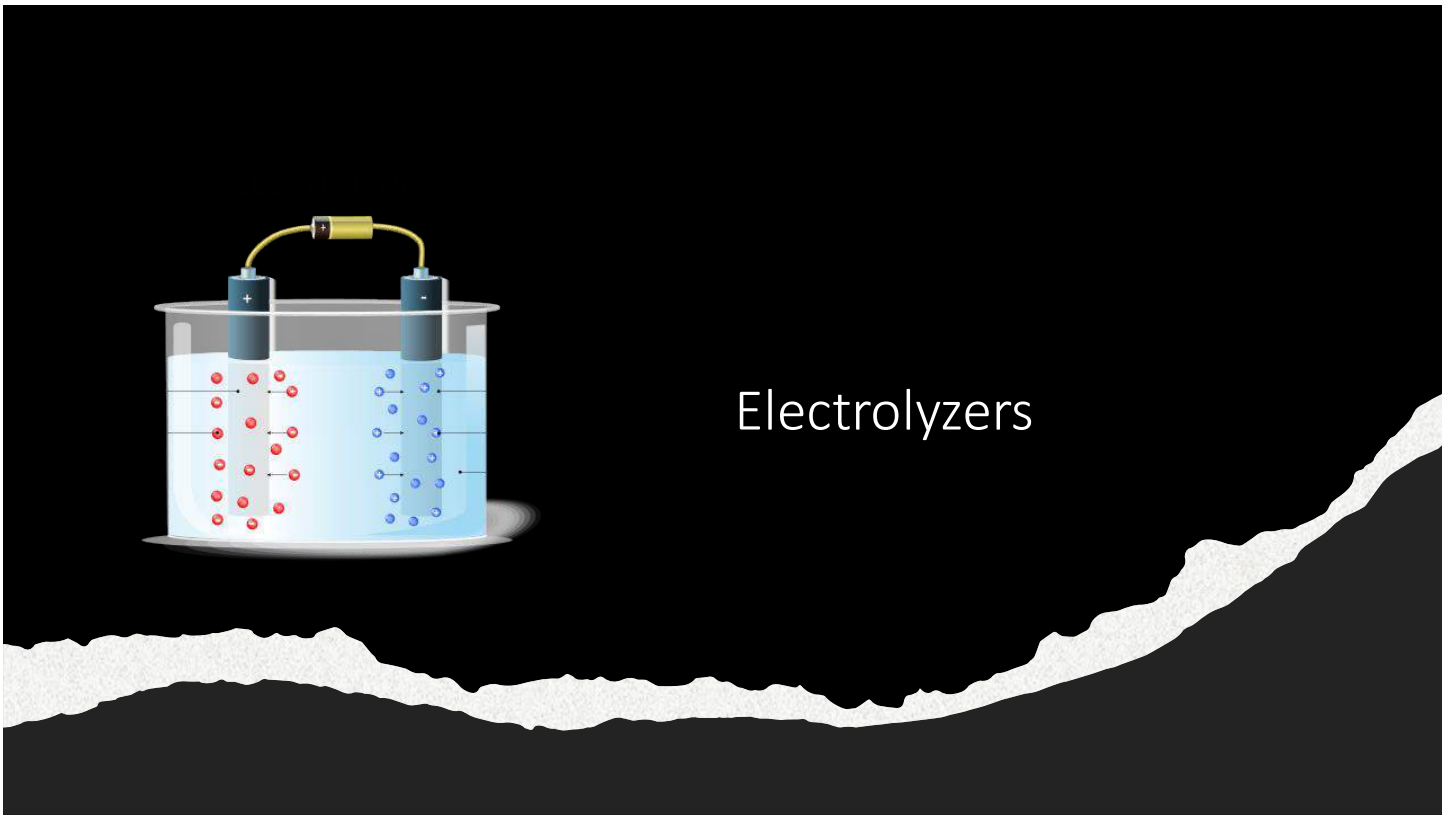




How do you safely transport hydrogen gas?

High-Pressure Cryogenic Requirements


Technetics
GROUP
H2


+
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Electrolyzers

Hydrogen Applications:
Now at Technetics Group

Solid oxide electrolyzers and fuel cells

Hydrogen compressors and pumps

LH2 carrier, tanks and machinery

Helicoflex®, C-Flex®, Elastomers, Mechanical Seals, Burst Discs, FeltMetal®

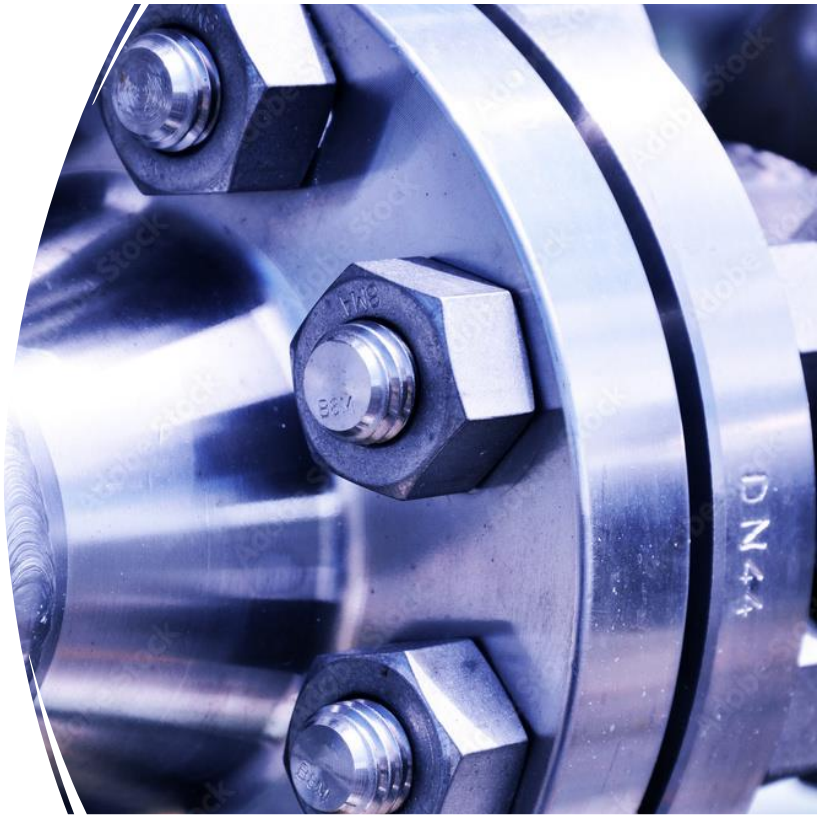
The TECHNETICS GROUP Value Proposition

- Experience handling hazardous gases
- Experience with compressors, tanks, valves, sensors
- Expertise with cryogenics and turbomachinery
- Expertise with high-temperature applications (SOEC/SOFC)
- R&D programs

Electrolysis

Production of Hydrogen through High-Temperature Electrolysis

- Temperature: 650 – 850 deg C
- Modular systems: from 300 kW to 10 MW



Fuel cells

Production of electricity by Solid Oxyde

- Temperature : 750°C
- 40K hours of operation

Storage and transport

Liquid Hydrogen

- Liquefaction systems
- Large cryogenic tanks for sea transport
- Transfer, gasification and distribution

Pumps

Hydrogen handling

- Gas
- Liquid (cryogenic)
- Complete sealing solution

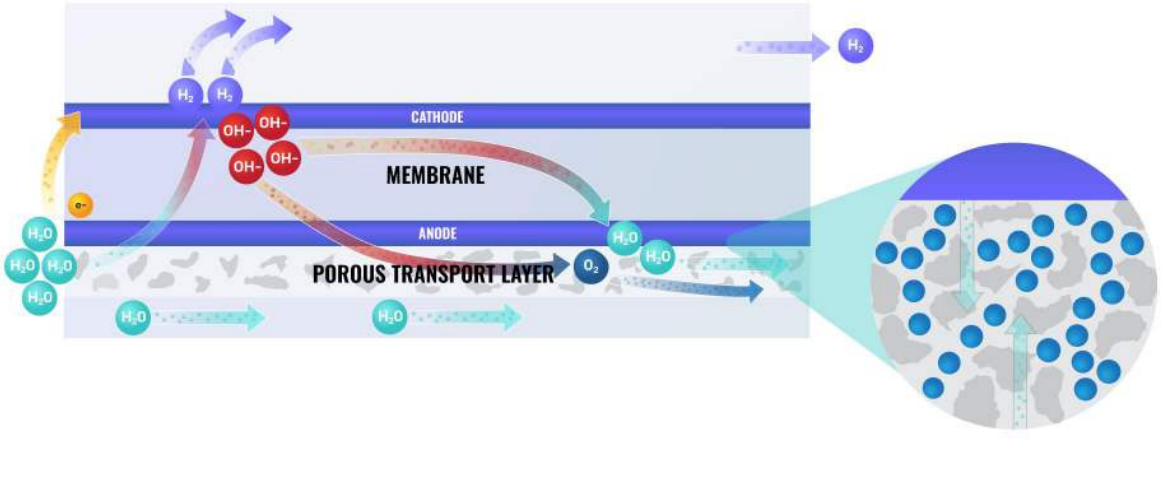
Compressors

Hydrogen handling

- Gas
- For infrastructures
- For local distribution

PTL Supplier Qualities

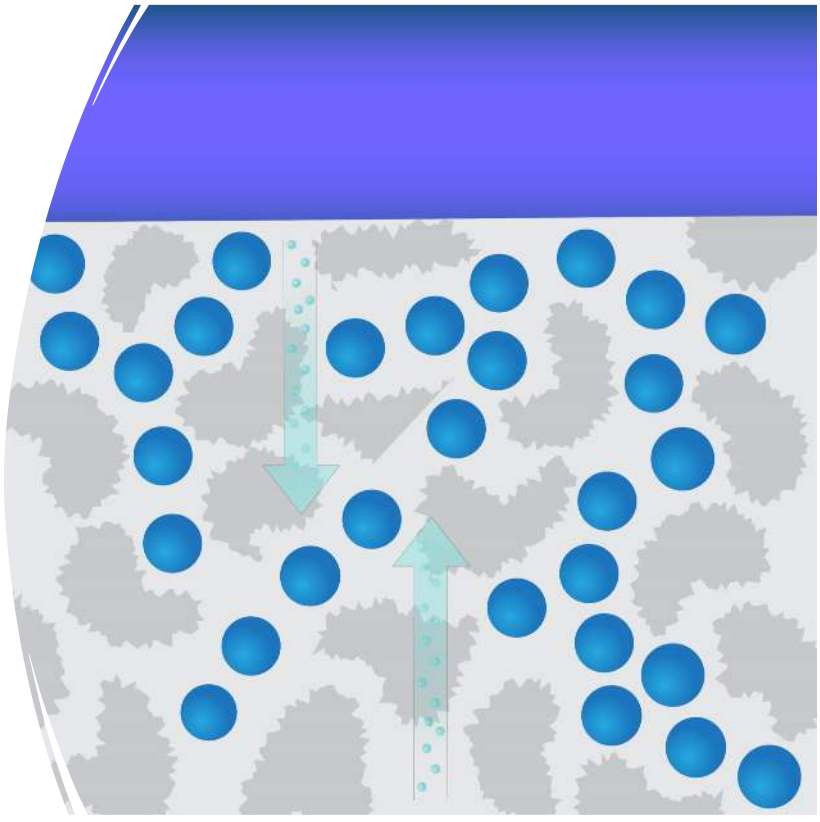
Porous Transport Layer (PTL)



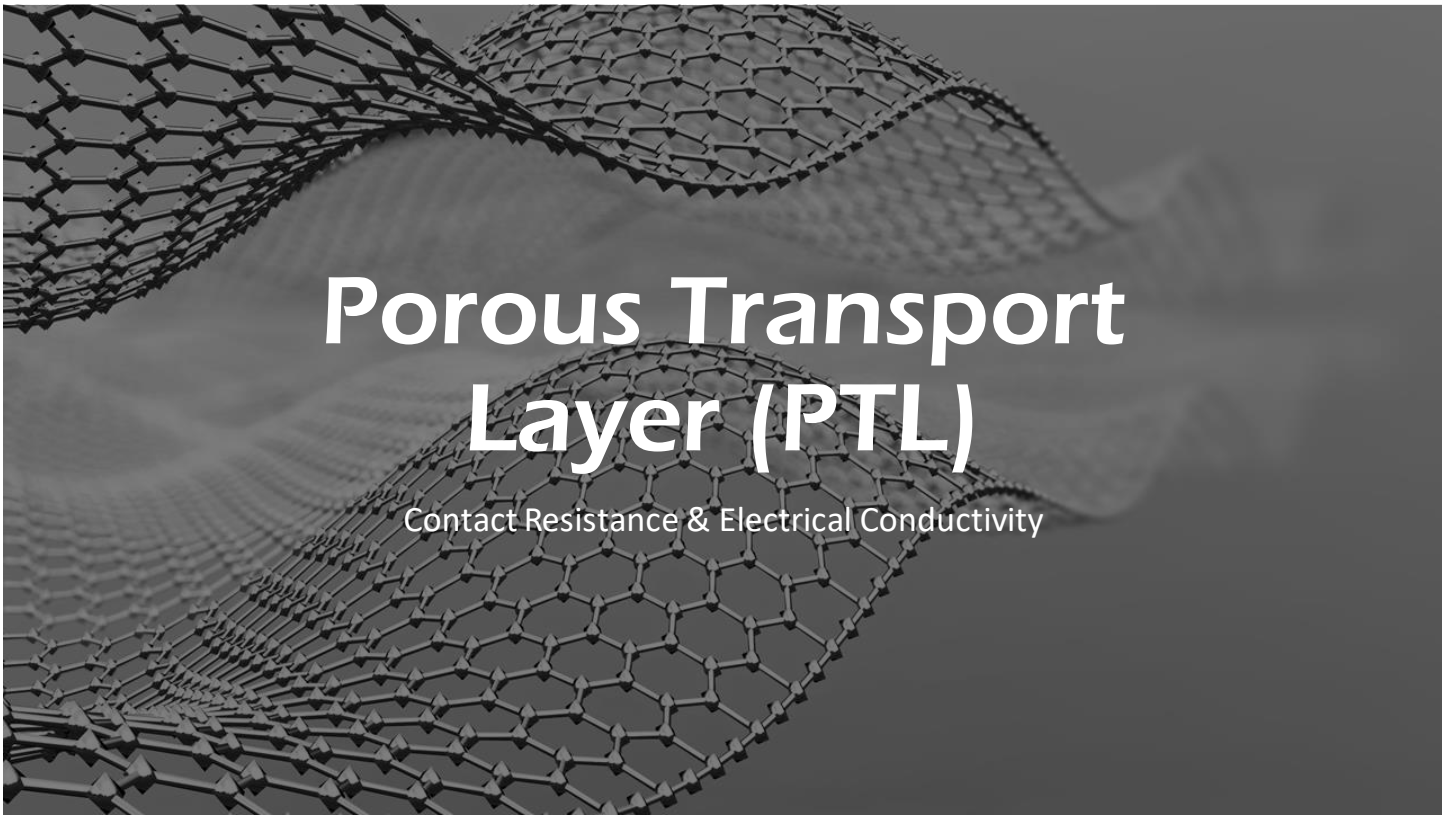
FELTMETAL™

PTL Requirements

- Porosity
- Low Contact Resistance
- Durability

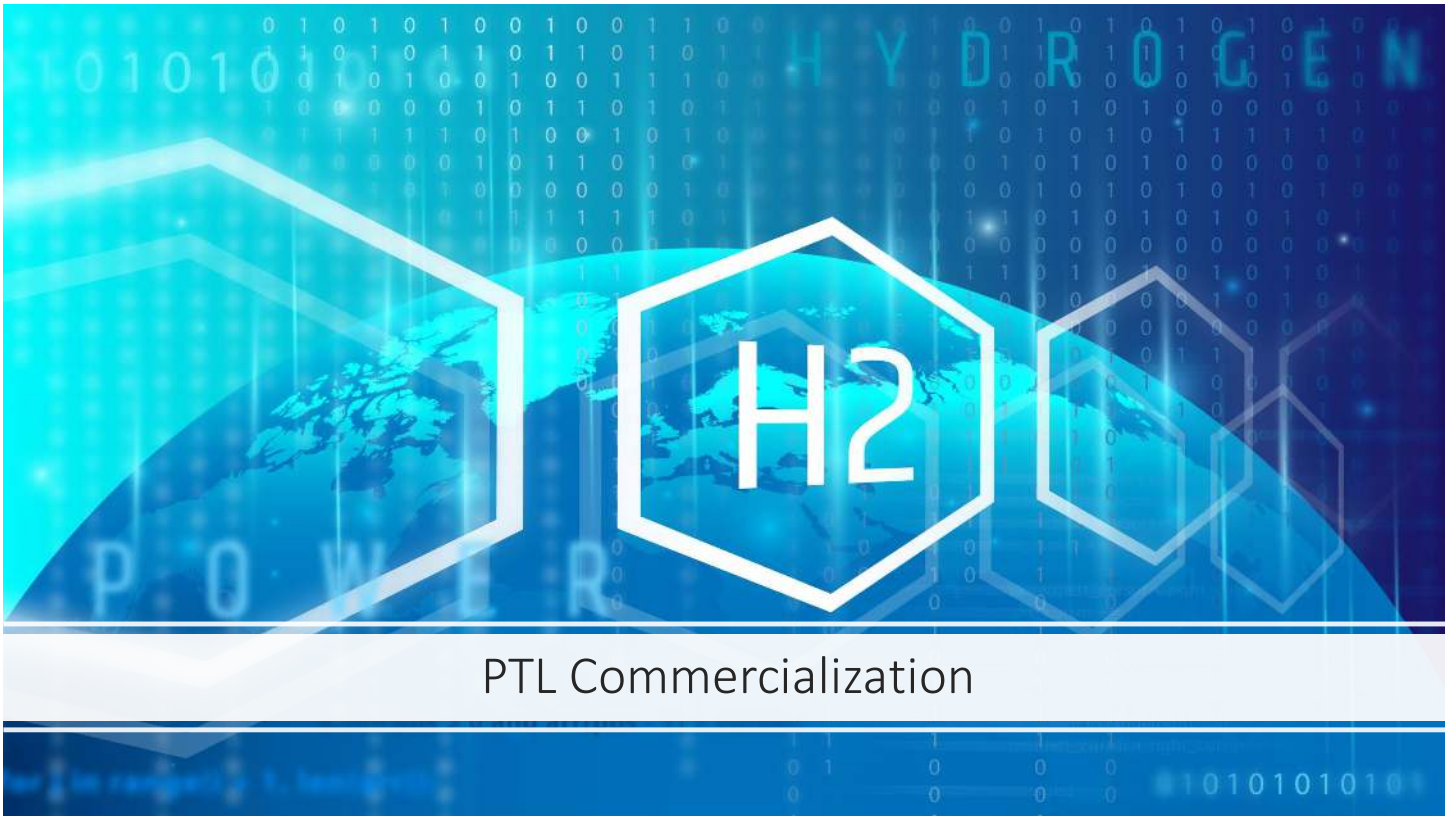


Research and Development

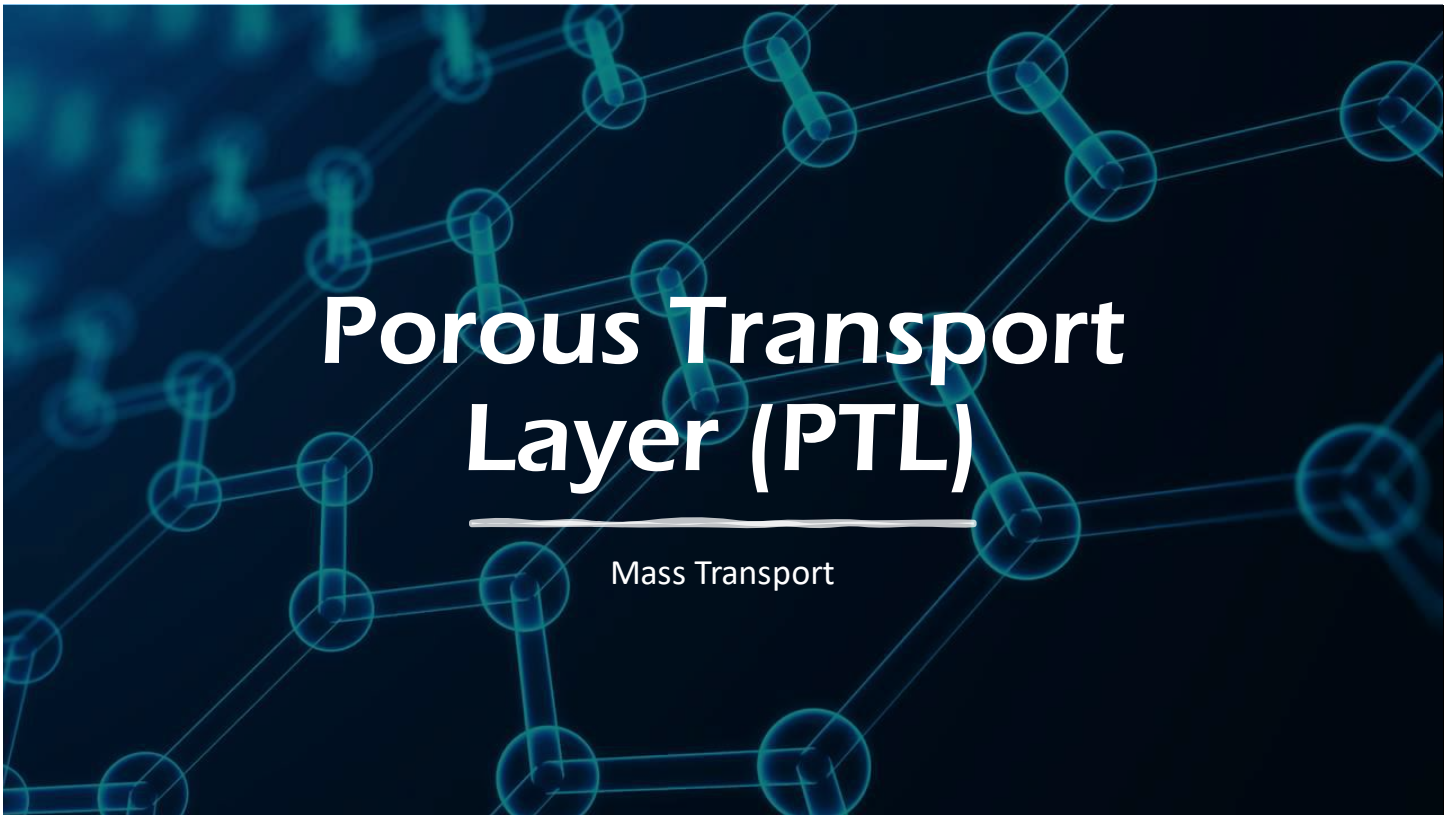


Porous Transport Layer (PTL)

Contact Resistance & Electrical Conductivity



PTL Commercialization



Porous Transport Layer (PTL)

Mass Transport

Porous Transport Layer (PTL)

Corrosion Resistance

Questions