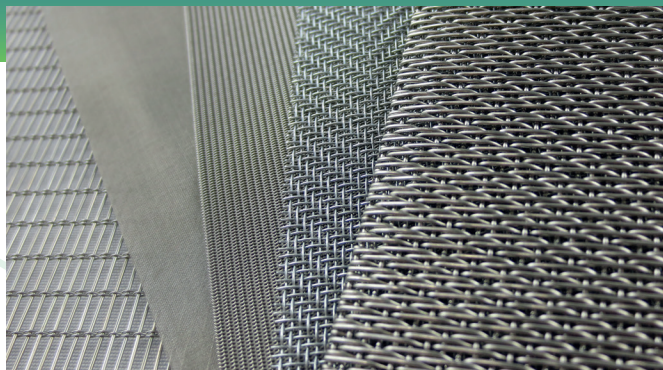


Woven wire mesh



Wire mesh is homogeneous and precise

- Perfect homogeneity due to variable weave patterns and small tolerances
- High permeability of the PTL / GDL
 - fast and efficient gas transport
- Precise definition of media cross-section
 - uniform power distribution
- Smooth contact surface – reduces risk of damage of membrane and contamination
- Exact tolerances of wire mesh thickness
- Mechanically durable and flexible
- Wide range of material selection
- Wire mesh as power distributor and carrier of the catalytic active mesh as electrode – AEM



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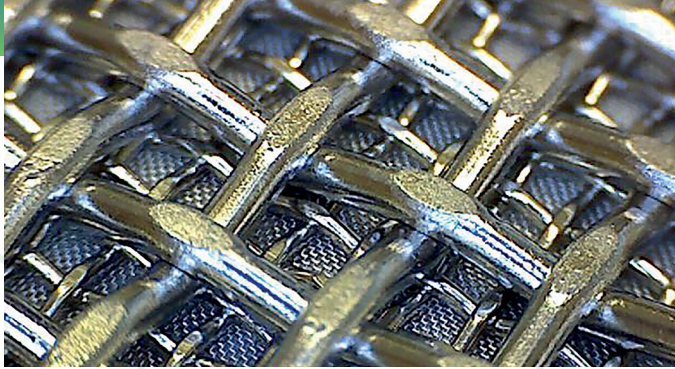


Material Solutions



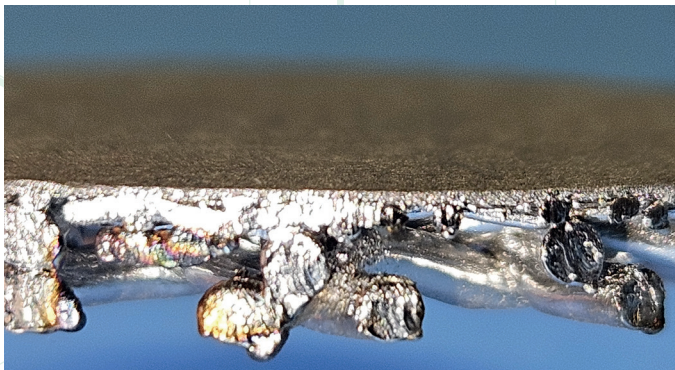
Electrolysis

Sintered laminate

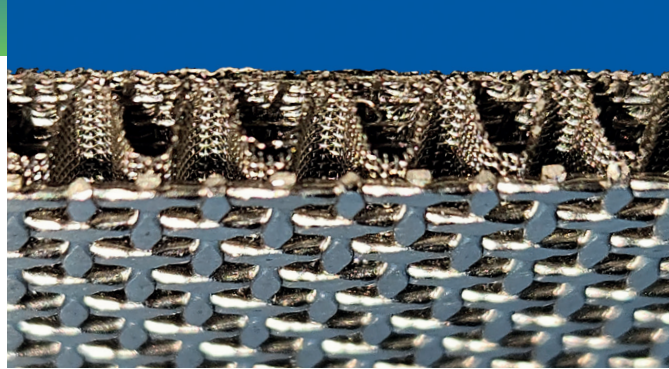


Bonded multilayer design creates new PTL / GDL design options

- Choice of woven wire mesh, fiber felt or other metallic media
- Durable with strong connection by diffusion bonding of the layers
- Offers very uniform power distribution & exact definable cross-sections of media
- High conductivity and controlled diffusion
- Precise overall thickness with μm tolerances
- Great fabricating and processing characteristics
- Wide range of materials available



Overview of systems



AEM – ELECTROLYSIS

Anode Exchange Membrane

- Fiber felt with small thickness & smooth surface (PTL)
- Wire mesh as spacer, conductor and diffuser (GDL)
- Materials: Ni > 99,2 / SS 316L / other

PEM – ELECTROLYSIS

Proton Exchange Membrane

- Multilayer sintered laminates (GDL)
- Fiber felt with small thickness & smooth surface (PTL)
- Materials: Ti Grade 1 / SS 316L / other

SOFC / SOEC

- Solid Oxide Fuel Cell
- Woven mesh as current collector
- Material: Ni > 99,2 / 99,6 / other

Fiber felt



Fiber felt material has unique characteristics

- High porosity (> 50%) – good flow & throughput rates
- Definable porosity, fiber thickness and overall thickness (tolerances in the μm -area)
- Smooth surface with different fiber < 25 μm
 - low risk of membrane damage
- Small overall thickness
- Good mechanical strength, especially when bonded to woven mesh
- A combination of woven wire mesh and fiber felt can eliminate the assembly of the bipolar plate
- High distribution effect
- Large active material surface
- Resistant material selection: Ti Grade 1 / Nickel & more