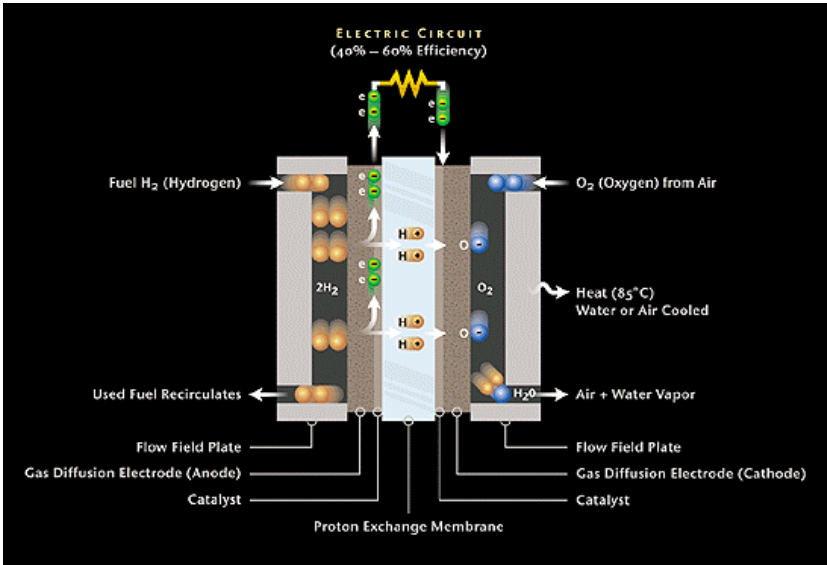


Fuel Cell Manufacturers Realize Cost Reductions With Increased Efficiencies and Performance

Result of New Carbon Fiber Product

fuel cell case study

BALLARD[®]
power to change the world[®]



A major barrier to the mass commercialization of Proton Exchange Membrane (PEM) fuel cells is the inherently high cost of raw materials. To combat this problem Ballard Material Products Inc., working jointly with our parent company Ballard Power Systems, developed Avcarb[™] carbon fiber papers. Avcarb[™] papers are specifically developed for gas diffusion layer (GDL) applications in PEM fuel cells and other applications that require a conductive substrate. Numerous fuel cell manufacturers today are reaping the low cost/high performance benefits associated with Ballard's revolutionary product.

For two years, Ballard's materials and manufacturing experts worked alongside fuel cell scientists to develop the Avcarb[™] P50 and P75 products. These papers provide an optimal balance of performance and cost. When produced at volume, these products have the potential to become the lowest cost GDL available.

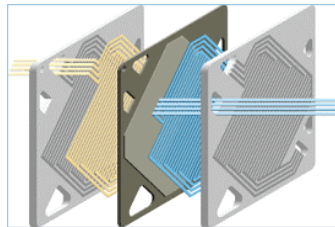
These products may also be supplied with a hydrophobic coating that minimizes the effects of moisture exposure, enhances performance, provides durability and facilitates handling. With this hydrophobic coating the grade designation becomes Avcarb[™] P50T and P75T. Our latest addition to the product family is our gas diffusion system (GDS) that incorporates a micro porous layer for optimal mass transport.

Ballard believes in fuel cell technology as the inevitable, eventual embodiment of zero emissions transportation technology leading to a decreased dependency upon fossil fuels. The hydrogen economy is developing and Ballard Material Products Inc., is positioned as the low cost GDL supplier to leading fuel cell manufacturers the world over.

As a Tier 1 supplier of critical components to the automotive industry, Ballard has demonstrated its ability to provide quality products, on time, with value added.

Though products can be customized, the work must be specifically directed by customer requirements.

- Cost Reduction
- High Performance



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