

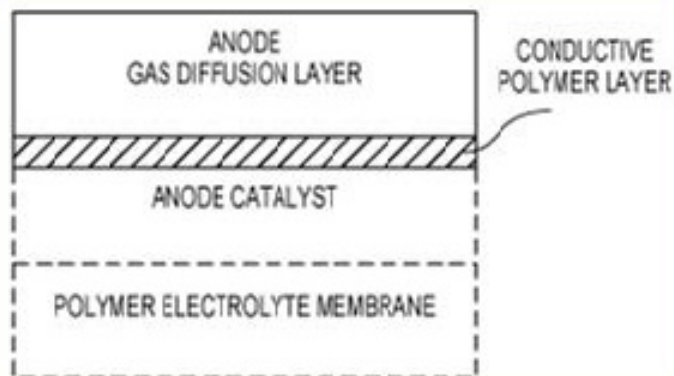
US Pat. No.: 9,515,340

Technology Readiness Level: 4

*Basic technological components have been integrated to establish the pieces will work together*

A unique gas diffusion electrode technique resulting in little to no leftover methanol, therefore increasing the overall effectiveness and performance of fuel cells.

Direct methanol fuel cells have an advantage over hydrogen fuel cells because the liquid methanol has high energy density and is easily transportable. However, one of the challenges with this process has been the large amount of methanol that crosses over from the cathode side of the membrane electrode assembly. This crossover poisons the cathode, decreasing operating voltage and weakening the power output of the cell. Sandia researchers have developed a method for mitigating the methanol crossover poisoning effect in fuel cells. This unique gas diffusion electrode technique results in little to no leftover methanol, therefore increasing the overall effectiveness and performance of fuel cells.



## TECHNICAL BENEFITS

- Advanced materials
- Power and efficiency gains
- Smaller scale
- Reduced cost

## INDUSTRIES & APPLICATIONS

- Electronics
- Microelectronics
- Portable power supply
- Storage battery
- Transportation
- Automotive