

A 3D schematic diagram of a Proton Exchange Membrane (PEM) fuel cell. The top part shows a perspective view of the flow field with a yellow box labeled "180° Turn" indicating the flow direction change. The bottom part is a cross-sectional view showing the internal layers: Flow Channel, Backing Layer, Catalyst Layer, Membrane, Catalyst Layer, Backing Layer, and Flow Channel. The left side is labeled "ANODE" and the right side "CATHODE". The central membrane is labeled "PEM". Arrows indicate the flow of "Fuel" on the left and "Air" on the right. A proton (H⁺) is shown moving from the anode to the cathode through the membrane. A coordinate system (x, y, z) is shown in the bottom left corner.