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Experimental and Characterization Studies on Micro Direct Methanol Fuel Cell

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Abstract : A micro Direct Methanol Fuel Cell (DMFC) of 1 cm2 active area with selective sensor materials to sense methanol for redox, has been developed. Among different Pt alloys, Pt-Sn/C was able to produce high current density and repeatability. Membrane Elecctrode Assembly (MEA) of anode catalyst Pt-Sn/C was prepared with nafion as active membrane and Pt black as cathode catalyst. The sensor's maximum ability to detect the trace levels of methanol in ppm has been analyzed. A compact sensor set up has also been made and the characterization studies were carried out. The acceptable value of current density was derived by the cell and the results are able to fulfill the needs of DMFC technology for the practical applications.

Keywords : DMFC, sensor, MEA, Pt-Sn
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