DEVELOPMENT OF Pt-ALLOYS CATHODES SUPPORTED ON MWCNTs BY THE INTERMITTENT MICROWAVE HEATING (IMH) METHOD

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RESUMEN

In this work, we synthesized Pt-alloys supported on MWCNTs by IMH. This method allows for a fast reduction of the salts and a homogeneous dispersion of the electrocatalysts on the support. Pt_1-Co_1/MWCNT and Pt_1-Ni_1/MWCNT were characterized by XRD, TEM and electrochemical methods. Their catalytic activity for Oxygen Reduction Reaction was evaluated without and with small organic molecules such as ethylene glycol and ethanol. We found that the tolerance of the Pt-alloys to these fuels is very high, related to the characteristic poor performance shown by commercial Pt-alone cathodes when liquid fuels are present in acid solutions. This family of cathodes may be used in Direct Oxidation Fuel Cells.

Palabras clave: MWCNTs, Pt-alloys, ethylene glycol, Oxygen Reduction Reaction, Direct Ethylene Glycol Fuel Cells