



Comparison of catalysis of ethanol and methanol electro-oxidation by layered Pt/GO-ZSM-5 over graphite foil for fuel cell applications

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Abstract : Platinum nanoparticles electro-deposited on graphene oxide over carbon felt electrodes are found to be able to catalyse electro-oxidation reactions of fuel cells. But as zeolites have added advantages of a support and second catalyst so this investigation can prove important. An interesting investigation of influence of platinum nanoparticles electro-deposited on 1:1 composite of graphene oxide and zeolite over carbon felt electrodes in electro-catalysis of ethanol and methanol is done. The results show a promising improvement in the catalytic ability of platinum nanoparticles in presence of zeolite additive. The stability of the electrodes with composite of graphene oxide and zeolite is also found to be better. Thus zeolites can increase the ability and stability of catalysts of fuel cell reactions.

Keywords: Graphene oxide; ZSM-5; Zeolite modified electrode; Platinum nanoparticles; Electro-oxidation; Fuel cell.

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