

## Influence of solvents under preparation of platinum-carbon aerogel electrocatalyst for PEMFC

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Recently, particular attention has been paid to carbon aerogels as catalyst support for fuel cell applications. Carbon aerogels have unique properties such as high conductivity, pronounced mesoporosity, high surface area and relatively low degree of microporosity that can make them more suitable electrocatalyst support than other types of carbons. We synthesized platinum-organic composite aerogels from the alcoholic sol-gel reaction of organic precursors using propylene oxide as a primary particle formation agent from platinum salt under various alcohol types and followed by supercritical drying with carbon dioxide. Subsequent carbonization of platinum-organic aerogels under reducing gas flow produces platinum-carbon aerogels. Electrochemical properties of various platinum-carbon catalysts were measured by cyclic voltammetry with adsorption and desorption of CO on the platinum surface. As the order of alcohols increase, initial electrochemical active surface (EAS) area of aerogel catalysts prepared under various solvents increased. The surface and morphology of the platinum-carbon catalysts were characterized by XPS and TEM.