

Preparation of Pt Catalysts Supported

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Multiwalled carbon nanotube(MWNT) and graphite nanofiber(GNF) were employed for the support materials of catalyst in the proton exchange membrane fuel cell(PEMFC). Until now, most of the researches related to the catalyst of fuel cells reported carbon blacks as catalyst support materials. In the present study, Pt/MWNT and Pt/GNF were prepared by the various reduction methods. The behavior of supported platinum particles on these materials compared to that when the Pt was dispersed on Vulcan carbon (XC-72). Pt catalysts on the MWNT and GNF which have various surface areas and porosities were prepared for the electrodes of PEMFC. The electrocatalytic properties of the Pt/CNT electrode for oxygen reduction reaction have been investigated by linear sweep voltammetry. The performance of prepared catalysts has been evaluated by using the typical I-V curve of PEMFC single cell. The optimum conditions of catalysts were suggested by the catalyst reactivity with surface areas, pore sizes, Pt sizes and distances between Pt particles.

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