

Synthesis of carbon supported Pt based catalyst via polyol process

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The polyol employed during the carbon supported Pt based catalysts synthesis could offer uniformity of Pt nanoparticles on the supports surface, acting as a reductant for the Pt cations as well as a protective agent by stabilizing the nanosize particle surface from particle growth [1,2]. We demonstrate several examples of Pt-based electrocatalysts for methanol electrooxidation. The structure and morphology of the Pt based catalysts were characterized by XRD and TEM, revealing that the Pt nanoparticles were highly-dispersed on the carbon support. To measure and compare the activity based on the Pt mass, inductively coupled plasma mass spectrophotometer (ICP-MS) was employed for composition measurements. In addition, electrochemical activities for the methanol oxidation over the Pt/C, Pt/CNT and PtRu/C catalyst systems were measured by the cyclic voltammetry.

[1] Chem. Mater. 12 (2000) 1622.

[2] J. Phys. Chem. B 107 (2003) 6292.