

Fabrications and Electrochemical analysis of WC derived from conventional TPR method

함동진, 윤덕현, 한승현, 배강홍, 이재성*
포항공과대학교 화학공학과
(jlee@postech.ac.kr*)

Recently tungsten carbides have been considered as an alternating electrocatalyst at the anode and cathode electrode of low temperature fuel cells, because they show high activity for electro-oxidation of methanol, hydrogen and electro-reduction of oxygen with minimal loading of platinum. We have fabricated the various structures and phases of tungsten carbides preserved the high physical properties and good electro-activity via conventional modified TPR method by using WO_3 and H_2WO_4 . Especially, the mass activity (mA/mg of Pt taken at 0.75V - Ag/AgCl) of all 7.5wt% Pt loaded tungsten carbide based catalysts show higher activity for methanol oxidation than commercial 20wt% PtRu/C (E-Tek) catalyst.