

# 甘油和乙醇在 Pt-CeO<sub>2</sub>/C 电极上的氧化

徐常威, 田植群, 沈培康

(中山大学物理科学与工程技术学院, 广东 广州 510275)

摘要: 用交替微波加热法快速制备 CeO<sub>2</sub>/C 复合材料, 进而制备 Pt-CeO<sub>2</sub>/C。用电化学方法研究了甘油、乙醇在 KOH 溶液中, 在 Pt/C 和 Pt-CeO<sub>2</sub>/C 电极上的电化学氧化性能。结果显示: 负载在碳粉上的 Pt 和 Pt-CeO<sub>2</sub> 催化剂对甘油和乙醇的电化学氧化具有较高的活性, 而 Pt-CeO<sub>2</sub>/C 催化剂与 Pt/C 催化剂相比, 表现了更好的活性和更强的抗毒化能力。

关键词: 燃料电池; 碱性溶液; CeO<sub>2</sub>; 交替微波加热法

中图分类号: TM911.4 文献标识码: A 文章编号: 1001-1579(2004)03-0217-02

## Oxidation of glycerol and ethanol on Pt-CeO<sub>2</sub>/C electrodes

XU Chang-wei, TIAN Zhi-qun, SHEN Pei-kang

(School of Physics and Engineering, Sun Yat-Sen University, Guangzhou, Guangdong 510275, China)

**Abstract:** CeO<sub>2</sub>/C composite was prepared by intermittent microwave heating (IMH) method and used as support to make Pt-CeO<sub>2</sub>/C catalyst. The electrochemical oxidation properties of glycerol and ethanol on Pt/C or Pt-CeO<sub>2</sub>/C electrodes were measured by electrochemical techniques. The results showed that both Pt/C and Pt-CeO<sub>2</sub>/C electrodes were active for the oxidation of glycerol and ethanol Pt-CeO<sub>2</sub>/C catalyst had better activity and poisoning resistance than that of Pt/C.

**Key words:** fuel cells; alkaline solution; CeO<sub>2</sub>; intermittent microwave heating