交替微波加热法制备 Pt/C 催化剂的研究

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摘要：利用交替微波加热法制备了 Pt 载量高于 40%的 Pt/C 催化剂，具有制备过程简单，方便，快速等特点。采用 TEM 和 XRD 等分析技术对催化剂进行了表征，并对甲醇的电化学氧化性能进行了研究。结果表明：以本法制备的 Pt/C 催化剂的 Pt 颗粒高度均匀地分散于 Vulcan XC-72 碳载体上，粒径分布在 2.5～5 nm 之间。由该催化剂制备的电极对甲醇的电化学氧化性能优于 E-TEK 公司的同类产品。

关键词：交替微波加热(IMH)；电催化剂；燃料电池；纳米材料

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Studies on Pt/C catalysts prepared by intermittent microwave heating

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Abstract：Pt/C catalysts with Pt loading higher than 40% were prepared by intermittent microwave heating (IMH) method. This method had the advantages of fast, simple and easy to operate. TEM and XRD measurements indicated that Pt particles of the Pt/C catalyst prepared by this method were uniformly dispersed on Vulcan XC-72 carbon black and particle size range was 2.5～5 nm. The catalytic activity of Pt/C for the electro-oxidation of methanol was better than that of E-TEK product.

Key words：intermittent microwave heating(IMH)；electrocatalyst；fuel cells；nano materials