材料研究学报 2009, 23(5) 508-512 DOI: ISSN: 1005-3093 CN: 21-1328/TG

研究论文

制备参数对不锈钢丝网催化剂结构和性能的影响

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摘要:

采用阳极氧化工艺在不锈钢丝网载体上自生长一层氧化膜, 再在其上负载活性组分铈、铂和钯, 制备了金属丝网催化剂. 研究了阳极氧化的电流密度和电解液种类等因素对阳极氧化膜形成的影响,以及还原时间和焙烧温度对催化剂氧化活性的影响. 结果表明,改变制备参数对氧化膜结构有较大影响, 进而影响到催化剂的活性.采用10%H_2SO_4电解液,控制电流密度为1.0 A时得到的氧化膜载体浸渍活性组分后,具有良好的催化活性和稳定性.

关键词: 材料合成与加工工艺 阳极氧化膜 制备参数 催化剂 不锈钢丝网

The effect of preparation parameters on the structure and catalytic performance of Ce–Pt–Pd/SSWM stainless steel wire mesh catalyst

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Abstract:

A new type of catalyst consisting of a porous anodic oxidation membrane formed on the surface of stainless steel wire mesh and active compounds of cerium, platinum and palladium dispersed on the support surface was successfully prepared. The catalyst shows good activity for the oxidation of toluene, acetone and ethyl acetate. The results show that the operating parameters affect the formation of porous anodic oxidation membrane and thereby affect the catalytic activity subsequent. The catalyst, prepared by using 10% H2SO4 as electrolyte and current density 1.0 A, shows a good catalytic activity and stability.

Keywords: synthesizing and processing technics anodic oxidation membrane preparation parameters catalyst stainless steel wire mesh

收稿日期 2009-01-19 修回日期 2009-07-30 网络版发布日期 2009-10-10

DOI:

基金项目:

国家自然科学基金20577042及浙江省重中之重学科开放基金资助项目.

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