

研究简报

镓酸镧基中温-SOFC的新型阳极NiO-La_{0.3}Ce_{0.7}O_{2-δ}研究

朱晓东¹, 孙克宁¹, 张乃庆^{1,2}, 陈新兵¹, 付强¹, 贾德昌²

1. 哈尔滨工业大学应用化学系,
2. 材料科学与工程博士后流动站, 哈尔滨150001

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摘要 采用共沉淀法制备了NiO-La_{0.3}Ce_{0.7}O_{2-δ}(LDC30)新型阳极材料, 通过对其配方与性能的研究, 探索获得中温SOFC高性能阳极材料的新途径.

关键词 [NiO-La_{0.3}Ce_{0.7}O_{2-δ}](#)-[La_{0.8}Sr_{0.2}Ga_{0.8}Mg_{0.2}O_{3-δ}](#)-[阻挡层](#) [中温固体氧化物燃料电池](#)

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Investigation of Novel Anode NiO-La_{0.3}Ce_{0.7}O_{2-δ} of IT-SOFC with LSGM-based Electrolyte

ZHU Xiao-Dong¹, SUN Ke-Ning^{1*}, ZHANG Nai-Qing^{1,2}, CHEN Xin-Bing¹, FU Qiang¹, JIA De-Chang²

1. Department of Applied Chemistry,
2. The Research Station on Material Science and Engineering for Postoral Fellows, Harbin Institute of Technology, Harbin 150001, China

Abstract NiO-La_{0.3}Ce_{0.7}O_{2-δ}(LDC30) novel anode was investigated for IT-SOFCs(Intermediate Temperature-Solid Oxide Fuel Cells) with LaGaO₃-based electrolyte. The results showed that LDC30 has a suitable chemical compatibility with NiO and NiO-LDC30 has a good thermal expansion matching with LDC30 interlayer and LSGM(La_{0.8}Sr_{0.2}Ga_{0.8}Mg_{0.2}O_{3-δ}) electrolyte, so NiO-LDC30/LDC30 was considered as a feasible and novel anode system. It was also shown that NiO content plays a key role on polarization performance and morphology of the anode. When the content of NiO was 60%(mass fraction), the polarization loss of anode was the lowest. Next we will optimize the porosity and sintering procedure to modify the microstructure and performance of the anode.

Key words [NiO-La_{0.3}Ce_{0.7}O_{2-δ}](#)-[La_{0.8}Sr_{0.2}Ga_{0.8}Mg_{0.2}O_{3-δ}](#)-[Interlayer](#) [Intermediate Temperature-Solid Oxide Fuel Cells\(IT-SOFC\)](#)

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通讯作者 孙克宁 sunkn@hit.edu.cn

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