ScSZ基致密扩散障型氧传感器的研究

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摘　要：

本实验采用具有高电导率的ScSZ基电解质材料和La0.8Sr0.2MnO3混合导体材料，利用Pt浆粘结，制成了新型的混合导体极限电流氧传感器。实验测试了其在温度993K氧浓度8100ppm～22.43%范围内的电流-电压曲线，数据表明该传感器在上述氧浓度范围内具有较好的测氧特性，且极限电流与氧浓度存在良好的线性关系；同时测试了其在不同氧浓度下的响应时间特性，结果显示传感器重复性好，响应时间较快。

关键词：氧传感器；极限电流；扩散障；响应时间；钪稳氧化锆

The study on dense diffusion barrier oxygen sensor using ScSZ based

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Abstract:

A new type of limiting current oxygen sensor using scandium stabilized zirconia (ScSZ) as oxygen ion conducting solid electrolytes and La0.8Sr0.2MnO3 as diffusion barrier was developed successfully through the technology of Platinum liquid agglutination. The I-V curve of oxygen sensor sample was tested at 993K in a mixture of the N2-O2 with the oxygen concentration being 8100ppm～22.43%, and the data had indicated that the sensor can get stable current platform in the above oxygen concentration scope, and the limiting current has good linear relationship with the oxygen concentration; Simultaneously the response time characteristic of the sensor under the different oxygen concentration tested, the data indicated that the sensor duplication is good and the response time is quick.

Keywords: oxygen sensor; limiting current; diffusion barrier; response time; scandium stabilized zirconia

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