

轧膜成型 YSZ 电解质薄片性能

韩敏芳¹, 杨翠柏¹, 李伯涛², 彭苏萍¹

(1. 中国矿业大学化学与环境工程学院, 北京 100083; 2. 德累斯顿工业大学, 德国)

摘要: 探索了以 YSZ 纳米粉体为原料, 采用轧膜成型的方法制备 YSZ 电解质薄片的工艺过程。结果表明: 轧膜坯体在 1450 °C 烧结最为适宜, 保温时间应控制在 2 h 左右; 同时, 在 1000 °C 附近的烧结初期, 保温时间也应控制在 2 h 左右为宜。YSZ 电导率在 950 °C 已达到 0.10 S/cm 以上, 满足 SOFC 对电解质材料导电性的要求。

关键词: 轧膜成型; YSZ 电解质; 电导率

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Properties of YSZ electrolyte thin film by tape calendering process

HAN Min-fang¹, YANG Cui-bai¹, LI Bo-tao², PENG Su-ping¹

(1. School of Chemical & Environmental Engineering, China University of Mining & Technology, Beijing 100083, China; 2. Technical University Dresden, Germany)

Abstract: The process and properties of YSZ electrolyte thin film made by tape calendering from nano YSZ powders were researched. As a result, the sintering processes at 1450 °C for 2 h was suitable to the adobe made by tape calendering, in the beginning stage of sintering process at 1000 °C for 2 h. High electric conductivity up to 0.10 S/cm at 950 °C met the electric property of electrolyte material used in SOFC.

Key words: tape calendering; YSZ electrolyte; electric conductivity