

Synthesis of LSCF/CGO Composite used as SOFC Cathode Material

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Composites of LSCF(La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ}) and CGO(gadolinium doped ceria)-based ceramics are logical candidate cathode materials with CGO electrolytes. LSCF with perovskite structure was synthesized and investigated by Solid State Reaction(SSR) method used as cathode materials for SOFC(solid oxide fuel cell). The optimized temperature was 1100°C to synthesize La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ} with rhombohedral structure. The polarization resistance of the LSCF/CGO(50:50 wt.%) was smaller than that of other composite cathodes. The analysis of the EIS data of LSCF/CGO suggests that the diffusion and adsorption-desorption of oxygen can be the key process in the cathodic reaction.