

Ceramic-Supported Honeycomb SOFC on the Anode Side: Design and Fabrication

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Using simple and cheap processes, we successfully fabricated a new honeycomb single cell of SOFC based on a ceramic substrate on the anode side. The single cell unit consists of thick 3YSZ support and thin films of functional components (NiOYSZ anode, YSZ electrolyte and LSM cathode) coated on the support. The highly porous anode support and cathode (40% porosity) with large open pores (10 micro); and dense, thin layer of electrolyte with thickness less than 20 micrometer were achieved with high mechanical strength. The honeycomb cell has 9 channels with wall thickness of 1.5 mm and height of 2.3 cm.