Performance of Electrolyte Supported Solid Oxide Fuel Cells with STN Anodes

In order to replace the state of the art Ni-cermet as SOFC anode, electrolyte supported cells comprising CGO/Ni infiltrated Nb-doped SrTiO3 anodes, and LSM/YSZ cathodes have been developed and tested as single 5 x 5 cm² cells. The initial performance reached 0.4 W/cm² at 850 °C. Further tests under high fuel utilization and redox cycling have been performed to identify the performance limiting parameters in this new type of full ceramic SOFCs. Measured performances and stability have been further tentatively linked to modifications of the nano-sized infiltrates within the anode.

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