

Abstract #2:

Dual Interconnect Coatings for Planar SOFC Stacks

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Ferritic stainless steel interconnects are generally used in planar type SOFC stacks, due to their low-cost, chromia scale-forming behavior, and good thermal expansion match to other stack components. However, volatile Cr-containing species, which originate from the oxide scale, can poison the cathode material in the cells and subsequently cause power deterioration in the device. To prevent this, a conductive MnCo spinel coating has been developed. However, this coating is not compatible with formation of hermetic seals between interconnects, cell frames, and ceramic cells. Thus, a new aluminizing process has been developed to enable durable sealing, prevent Cr evaporation/reaction, and maintain electrical insulation between stack repeat units. This paper will present recent progress regarding these novel coatings and discuss some of the compatibility issues that arise when integrating both coatings into the same component.