

Abstract Submitted
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Thermal stability and oxidation resistance of protective coating on stainless steel interconnect for SOFC¹ H. CHEN, J. A. LUCAS, W. PRIYANTHA, M. KOPCZYK, R.J. SMITH, P.E. GANNON, M. DEIBERT, Montana State University, Bozeman MT 59717, V.I. GOROKHOVSKY, Arcomac Surface Engineering, Bozeman MT 59715 — The possibility of an anode-supported SOFC with ferritic stainless steel interconnects is particularly promising because of its low cost and flexibility. An effective, dense and well adherent AlCrTiCoMnYO coating was deposited on 430SS using filtered arc deposition technique. Rutherford backscattering with He⁺ and non-Rutherford scattering with H⁺ were used to characterize the composition and the thermal stability of the coatings. The chromium volatility of the coated steel plates at 800 °C was measured using ion beam analysis. Significant reductions in oxidation rates as well as reduced Cr volatility were observed for the coated alloys.

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W. Priyantha
Montana State University, Bozeman MT 59717

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