Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

High temperature oxidation studies of filtered arc deposited CrAlN nanolayered coatings on steel plates[1] A. KAYANI, C.V. RAMANA, R.J. SMITH, Physics Department, Montana State University-Bozeman, MT 59717, V.I. GOROKHOVSKY, Arcomac Surface Engineering, LLC. Bozeman, MT 59715, V. SHUTTHANANDAN, Pacific Northwest National Laboratory, Richland, WA 99302 — The requirements of low cost and high-temperature corrosion resistance for interconnect plates in solid oxide fuel cell stacks has directed attention to the use of metal plates with oxidation resistant coatings. We have investigated the performance of steel plates with nanolayered coatings consisting of CrAlN. The coatings were deposited using large area filtered arc deposition technology,[1] and annealed for up to 25 hours in air at 800 °C. The composition, structure and morphology of the coated plates were characterized using RBS, NRA, and AFM techniques. The oxidation rate was reduced by a factor of about 40 relative to the uncoated steel plates. [1] Vladimir I. Gorokhovsky, Rabi Bhattacharya and Deepak G. Bhat, Surface and Coating Technology, **140** (2) 2001, pp. 82-92.

[1]Work supported by DOI and DOE subcontract from PNNL, number 3917(413060-A).Work at PNNL (EMSL) supported through OBER (DOE).

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Date submitted: 06 Dec 2004 Electronic form version 1.4