

## Development of Protective Coatings Process on Metallic Interconnects for Solid Oxide Fuel Cell

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We developed conductive ceramic coating process on metallic interconnects for SOFC by using wet spray coating method and thermal plasma coating method. The conductive coating materials such as LSM(prepared by SSR), LSM(prepared by GNP), LSCo and LSCF were coated on Crofer22APU and SUS430. The contact strength of coated layer was much increased by using sandblast treatment. The electrical conductivity of the coated specimen was measured by a DC four probe, two wire method for 8000h, in air and at 800°C. The value of ASR kept in such a low value about 14mΩcm<sup>2</sup> after 8000h operation. Microstructure and composition of the coated layer interface were investigated SEM/EDS analysis. Both the SEM and EDS analyses revealed that the coated oxides effectively retard the formation and the growth of Cr<sub>2</sub>O<sub>3</sub> layer, which enhance long-term stability of coated metallic interconnects at high temperature under oxidizing atmosphere. The best performance was achieved using LSM(solid state reaction) perovskite conductive layers that substantially improved the surface stability of the metallic interconnects, and prevented chromium outward migration.