Synthesis of $La_{0.8}Sr_{0.2}MnO_3$ coated oxide powder

박중덕, 정종식*
포항공과대학교
(jsc@postech.ac.kr*)

Lanthanum strontium manganite ($La_{0.8}Sr_{0.2}MnO_3$) coated oxide (Al_2O_3, ZrO_2) powders were prepared by using two different methods, viz co-precipitation and a non-alkoxide sol-gel method. In the co-precipitation case, nitrate metal precursors were used as a starting material. Through the sol-gel technique, raw materials were prepared from metallic solution of metal chlorides. These powders were calcined in air at 850℃. The coated powders were characterized by XRD, TEM using Ultra tome, SEM. These images show that LSM particles covered metal oxide, meanwhile the coating depth is not uniform. The XRD data shows coating particles of LSM have several tens of nm size(< 100nm). We confirmed LSM particles on the metal oxide surface from the TEM image. And then the coating layer of LSM was discontinuous from SEM image. Normally, LSM powder was used for SOFC cathode material. These LSM coated metal oxide powders have a large surface area, a good sinter-activity. It is a good candidate material for SOFC system.