Ref.: 10-35

Electrochemical Impedance Spectroscopy Characterization of Perovskite/YSZ Ceramic Films

de Florio, D. Z.; Esposito, V.; Muccillo, R.; Traversa, E.

Apresentador: **Daniel Zanetti de Florio** ***Instituição:*** CMDMC - CCTM - IPEN

E-mail: dzflorio@ipen.br Centro de Ciência e Tecnologia de Materiais

Perovskite-type La0.8Sr0.2Co0.8Fe0.2O3-d powders were prepared using a complex polymeric precursor method.
This material was deposited by wet spray technique on dense yttria-stabilized zirconia layers. The morphology of
the deposited perovskite thick films was investigated by field emission scanning electron microscopy. These samples
were charactyerized by Electrochemical impedance spectroscopy. These measurements were carried out under
synthetic air flux at temperatures ranging from 200 °C to 600 °C in the 10 mHz-10 MHz frequency range.
Electrochemical impedance spectroscopy measurements were performed also in the same frequency range at
different oxygen partial pressures (10-5 - 1 atm) at 600 °C. At this temperature and at frequencies below 0.1 MHz,
the electrical response to the applied signal of the electrode material is best fitted by two semicircles, which can be
related to charge transfer processes. The activation energy for the limiting step (adsorption/desorption) was found
to be 1.6 eV.

Palavras-chave: sofc, LSCF, impedance spectroscopy