

Development of a Cathode-Type $\text{Ca}_{1-x}\text{Sr}_x\text{MnO}_3$

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Abstract : Oxides with formula $\text{Ca}_{1-x}\text{Sr}_x\text{MnO}_3$ ($0 \leq x \leq 0.2$) were synthesized using co-precipitation method. The identification of the obtained phase was carried out using infrared spectroscopy and X-ray diffraction. Thermogravimetric and differential analysis was permitted to characterize different transformations of precursors which take place during one heating cycle. The study of electrochemical behavior was carried out by cyclic voltammetry and impedance spectroscopy. The obtained results show that apparent catalytic activity improved when increasing the concentration of strontium. Anodic current densities varies from 1.3 to 5.9 mA/cm² at the rate scan of 20 mV.s⁻¹ and a potential 0.8 V for oxides with composition $x=0$ to 0.2.

Keywords : oxide, co-precipitation, electrochemical properties, cathode-type

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