

Structural, Morphological and Electrical Properties of $\text{La}_{1-x}\text{Sr}_x\text{AlO}_{3-\delta}$ ($x = 0, 0.1, 0.15$) Synthesized by the Pechini Method.

Authors

Farida Bouremmad, Abderrahim Benabbas, Hachemi Bouridah, Kamel Rida, Shalima Shawuti, Mehmed Ali Gülgün

Publication date

2012/12/1

Journal

Acta Chimica Slovenica

Volume

59

Issue

4

Description

Materials with a high ionic conductivity can be obtained by introducing oxygen ion vacancies into a perovskite type oxide. Such aliovalent ion doped ceramics are currently of considerable interest primarily because of their possible application as solid electrolytes in solid oxide fuel cells. They also cater to a wide variety of other applications as catalysts for oxidation reaction and as oxygen sensors. 1–2

LaAlO_3 type perovskite is a potential candidate for a cost effective solid electrolyte. The pure phase presents a very low ionic conductivity. An addition of divalent cations is expected to enhance the oxygen ion conduction. 3 Earlier studies have shown that substitution of divalent cations in LaAlO_3 on the La site could raise the conductivity value. Most commonly, these phases were prepared by the classical solid state reaction method which requires repeated cycles of high temperatures in the range of 1500 C–1700 C ...