

## Phase Equilibria in the Ln-Sr-Co-O Systems

**Authors :** Anastasiia Maklakova

**Abstract :** The perovskite type oxides formed in the Ln-Me-Me/-O systems (where Ln - rare-earth, Me - alkaline earth metal, Me/ - 3-d metal) have potential applications as gas sensors, catalysts or cathode materials for IT-SOFCs due to the high values of mixed electronic -ionic conductivity and high oxygen diffusivity. Complex oxides in the Sr-(Pr,Gd)-Co-O systems were prepared via the glycerol-nitrate technique. The phase composition was determined using a Shimadzu XRD-7000 diffractometer at room temperature in air. Phase identification was performed using the ICDD database. The structure was refined by the full-profile Rietveld method using Fullprof 2008 software. Gradual substitution of strontium by Pr or Gd leads to the decrease of unit cell parameters and unit cell volume that can be explained by the size factor. An introduction of Pr or Gd into the strontium cobaltite increases the oxygen content in samples.

**Keywords :** phase equilibria, crystal structure, oxygen nonstoichiometry, solid oxide fuel cell

**Conference Title :** ICCMC 2020 : International Conference on Ceramic Materials and Components

**Conference Location :** Venice, Italy

**Conference Dates :** November 12-13, 2020