عنوان مقاله:

Effect of Sr substitution on structural, redox and catalytic properties of nano-particles La۱-xSrxMn۰.۵Co۰.۵O۳ (x = ۰.۰, ۰.۱, ۰.۲, ۰.۳, ۰.۴, ۰.۵) as a catalyst for CO oxidation

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خلاصه مقاله:

Structural features of La(۱-x)SrxMn۰.۵Co۰.۵O۳ (x = ۰.۰, ۰.۱, ۰.۲, ۰.۳, ۰.۴, and ۰.۵) nano-particles were investigated using X-ray powder diffraction and FT-IR spectroscopy. The characterization of compounds by X-ray powder diffraction and using Fullprof program show a cubic structure (Pm۳m space group) for x = ۰.۰ and a rhombohedra structure (R-۳c space group) for the Sr substituted La(۱-x)SrxMn۰.۵Co۰.۵O۳ samples. Crystallite size and unit cell parameters decrease with Sr substitution. The electrical conductivity of the samples in oxidizing (air) and reducing atmosphere (۶%CO in nitrogen) and also band gap of the samples has been investigated to interpret the performance of samples. Results show that their behavior increases non-uniformly with increase in Sr substitution. An increase of Sr substitution up to ۰.۵ increases the performance of the samples and an optimal catalytic activity in the low-temperature conversion of CO to CO۲. It is mainly attributed to a decrease of the crystallite size.

کلمات کلیدی:

Manganite-Cobaltite, Air Pollutants, Conversion of CO to CO۲

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