

## عنوان مقاله:

Synthesis and characterization of Ag-Y co-doped Mn-Co spinel for solid oxide fuel cell application

## محل انتشار:

فصلنامه هیدروژن و پیل سوختی ایران، دوره 8، شماره 1 (سال: 1400)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Tara Arjomandbigdeli - *Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran*

Zahra Isapour - *Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran*

Adrine Malek Khachatourian - *Department of Materials Science and Engineering, Sharif University of Technology, Tehran, Iran*

Mohammad Golmohammad - *Renewable Energy Department, Niroo Research Institute, Tehran, Iran*

## خلاصه مقاله:

Mn-Co spinel coating for solid oxide fuel cell interconnects shows a suitable thermal expansion match, acceptable electrical conductivity, and good structural stability. In this paper, the addition of different amounts of Ag and Y as dopants on the physical and electrical properties of the Mn-Co spinel is investigated to improve the coating performance. First, the doped and co-doped powders were successfully synthesized using the Pechini sol-gel method. The synthesized powders were then characterized using X-ray diffraction and field emission scanning electron microscopy. The results confirmed that Ag was not completely doped into the spinel structure and instead acted as an additive, whereas Y caused Mn<sup>3+</sup>O<sub>2</sub> impurity phase formation at higher mol%. Next, the powders were pressed and sintered at different temperatures (۹۵۰ and ۱۰۵۰ °C) to evaluate the effect of dopants on the sintering and electrical behavior of the samples. Finally, the electrical conductivity of the samples was evaluated using a ۲-probe direct current technique. Although results showed that room temperature electrical conductivity increased upon doping, adding Y had a better effect on conductivity than Ag.

## کلمات کلیدی:

Mn-Co spinel, Solid oxide fuel cell, interconnect coating, characterization, doping

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1247996>

