Accepted Manuscript

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PII: S0925-8388(18)31951-0

DOI: 10.1016/j.jallcom.2018.05.232

Reference: JALCOM 46208

To appear in: *Journal of Alloys and Compounds*

Received Date: 2 February 2018

Revised Date: 15 May 2018

Accepted Date: 20 May 2018

Please cite this article as: M.A. Almessiere, Y. Slimani, A. Baykal, Exchange spring magnetic behavior of $Sr_{0.3}Ba_{0.4}Pb_{0.3}Fe_{12}O_{19}/(CuFe_2O_4)_x$ nanocomposites fabricated by a one-pot citrate sol-gel combustion method, *Journal of Alloys and Compounds* (2018), doi: 10.1016/j.jallcom.2018.05.232.

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Abstract

In this study, **hard/soft** $Sr_{0.3}Ba_{0.4}Pb_{0.3}Fe_{12}O_{19}/(CuFe_2O_4)_x$ nanocomposites with various contents of the soft phase (x = 1, 2, 3, 4, and 5) have been synthesized via a one-pot citrate sol-gel route. The structure and magnetic properties of the prepared specimens were investigated using X-ray diffraction (XRD), **scanning and transmission electron microscopies (SEM and TEM)** techniques as well as a vibrating sample magnetometer. The obtained XRD patterns revealed the formation of hard/soft ferrite nano-composites without secondary phases**. The magnetic results showed that all the prepared nanocomposite magnets exhibit a good single-phase magnetic behavior, proving that the magnetic hard**

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