Study of $La_{0.7}Sr_{0.3}Mn_{0.96}Co_{0.04}O_3$, $La_{0.7}Sr_{0.3}MnO_3$ and $BaTiO_3$ composites

Cong B.T., Dinh N.N., Hien D.V., Tuyen N.L.

Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam

Abstract: Composites with varying composition of ferromagnetic $La_{0.7}Sr_{0.3}Mn_{0.96}Co_{0.04}O_3$, $La_{0.7}Sr_{0.3}MnO_3$ and ferroelectric $BaTiO_3$ have been prepared using a solid-state ceramic method. The structure, temperature dependence of DC resistivity, dielectric constant, magnetoresistance, and the hysteresis loops of some samples have been investigated. Positive thermoresistive coefficient and colossal magnetoresistance effects were observed in the samples consisting of 90mol% $BaTiO_3$ and 97mol% $La_{0.7}Sr_{0.3}MnO_3$. The intermediate compositions (50mol% each other) are good candidates for application as multiferroic material.

Author Keywords: Composites; Magnetic-ferroelectric perovskite

Index Keywords: Barium titanate; Colossal magnetoresistance; Ferroelectric materials; Ferromagnetic materials; Lanthanum compounds; Magnetic hysteresis; Metal insulator transition; Perovskite; Positive thermoresistive coefficient (PTC); Composite materials

Year: 2003

Source title: Physica B: Condensed Matter

Volume: 327

Issue: 4-Feb

Page : 370-373

Cited by: 1

Link: Scorpus Link
Correspondence Address: Cong, B.T.; Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam; email: bcong@phys-hu.edu.vn
Editors: Boer F RBrommer P EFranse J J M

Conference name: ISAMM 2002

Conference date: 2 October 2002 through 4 October 2002

Conference location: Ha Long Bay

Conference code: 60799

ISSN: 9214526

CODEN: PHYBE

DOI: 10.1016/S0921-4526(02)01746-5

Language of Original Document: English

Abbreviated Source Title: Physica B: Condensed Matter

Document Type: Conference Paper

Source: Scopus
Authors with affiliations:

1. Cong, B.T., Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam
2. Dinh, N.N., Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam
3. Hien, D.V., Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam
4. Tuyen, N.L., Faculty of Physics, Hanoi University of Science, 334 Nguyen Trai, Hanoi, Viet Nam

References:

1. Hill, N.A., (2000) J. Phys. Chem. B, 104, p. 6694
2. Xu, Y., (1991) Ferroelectric Materials and their Application, , Amsterdam: North-Holland
3. Fan, X.J., Zhang, J.H., Li, X.G., (1999) J. Phys.: Condens. Matter., 11, p. 3141
4. Cong, B.T., Minh, D.L., Chau, N., (2000) Bull. Amer. Phys. Soc., p. 58. , March Meeting
5. Mahendiran, R., Mahesh, R., Raychaudhuri, A.K., Rao, C.N.R., (1996) Sol. State Commun., 99, p. 14