Grain boundary resistivity of the percolative conduction regime in ruthenium doped manganates

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Abstract: The excellent agreement with experimental data has been achieved in fitting the resistivity of doped manganate-ruthenates for whole temperature range. The analysis interpreted the resistivity in terms of percolation of carriers through the system of grain boundaries, having been assumed as the conductive fractal medium. The percolative conduction regime has been shown substantial for the K-doped ruthenates [H.N. Nhat, H.D. Chinh and M.H. Phan, Solid State Commun. 139 (2006) 456], and we confirm here that this approach also correctly discusses the unusual semiconductor-like behaviours of the doped manganate-ruthenates. ?? 2006 Elsevier B.V. All rights reserved.

Author Keywords: Fractal; Grain boundary; Percolation; Resistivity; Ruthenates

Index Keywords: Charge carriers; Doping (additives); Electric conductivity; Grain boundaries; Percolation (solid state); Doped manganate-ruthenates; Percolative conduction; Ruthenates; Manganese compounds

Year: 2007

Source title: Journal of Magnetism and Magnetic Materials

Volume: 310

Issue: 2 SUPPL. PART 3

Link: Scorpus Link

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ISSN: 3048853

CODEN: JMMMD

DOI: 10.1016/j.jmmm.2006.11.031

Language of Original Document: English

Abbreviated Source Title: Journal of Magnetism and Magnetic Materials

Document Type: Article

Source: Scopus

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