HEAT CONDUCTIVITY AND OXYGEN NON–STOICHIOMETRY RELATED PHONON MODES

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9.7 cm

In oxygen deficient (δ) manganites a correlation has been found between ferromagnetism and metallic resistivity ρ, just as with stoichiometric samples. A correlation of δ and the heat conductivity k has not been presented as yet. In this contribution we present in particular heat conductivity data of $Nd_{0.7}$ $Sr_{0.3}$ $MnO_{3-\delta}$. Compiling the data of this and other systems we formulate the correlation. As strong variations in the absolute magnitude of k were assigned to changes in the phonon spectra and in particluar to O–related modes [1,2], we assign the found correlation to oxygen defect modes.

[1] H. Fujishiro, M. Ikebe, Physica B 263-264 (1999) 691

[2] I. El-Kassab, A.M.Ahmed, P.Mandal, K.Bärner, A.Kattwinkel, U.Sondermann, Physica B 305 (2001) p. 233

13.4 cm

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