# Paper Titles

# Thermoelectric Power of $Gd_4(Co\text{-}A)_3$ Compounds (A = Cu, Pt)

## Abstract:

We report on a comparative study of thermoelectric power measurements ($S(T)$) in ferrimagnetic $Gd_4(Co_{1-x}A_x)_3$ compounds with A = Cu, Pt, in the temperature range 8 K – 300 K. Whereas in $Gd_4Co_3$ $S(T)$ is always negative, for $x > 0$ the substitution of Co for Cu/Pt gives rise to the appearance of a low temperature positive maximum in $S(T)$ at around 30 K. Based on our previous study of $Gd_4(Co_{1-x}Cu_x)_3$ compounds, we argue that this maximum in $S(T)$ originates from electron-magnon scattering and is sensitive to electron band structure changes resulting from the substitution of Co for Cu/Pt and the accompanying reduction in the ratio between the electron-magnon and the electron-phonon scattering strengths. The decreasing role of Co 3d electrons with the progressive substitution of Co for Cu/Pt, evidenced by a strong reduction in the spin disorder resistivity and the Co magnetic moment, is seen to be crucial for the existence of such low temperature maximum in $S(T)$ for x > 0. It is seen that the substitution of Co for Pt leads to higher values of the amplitude and temperature of the positive maximum in $S(T)$ than the substitution of Co for Cu.

## Info:

| | |
|---|---|
| Periodical: | Materials Science Forum (/MSF) (Volumes 730-732) |
| Main Theme: | Advanced Materials Forum VI (/MSF.730-732) |
| Edited by: | Ana Maria Pires Pinto and António Sérgio Pouzada |
| Pages: | 159-163 |
| DOI: | https://doi.org/10.4028/www.scientific.net/MSF.730-732.159 (https://doi.org/10.4028/www.scientific.net/MSF.730-732.159) |
| Citation: | T. M. Seixas et al., "Thermoelectric Power of $Gd_4(Co\text{-}A)_3$ Compounds (A = Cu, Pt)", Materials Science Forum, Vols. 730-732, pp. 159-163, 2013 |
| Online since: | November 2012 |
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Keywords: Electron Band Structure (/paper-keyword/electron-band-structure), Gadolinium-Cobalt Compounds (/paper-keyword/gadolinium-cobalt-compounds), Thermoelectric Power (/paper-keyword/thermoelectric-power)

Export: RIS, (/MSF.730-732.159.ris) BibTeX (/MSF.730-732.159.bib)

Price: 33,00 €

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