

# Normal and inverse magnetocaloric effect in amorphous $R_8Co_{62}B_{30}$ ( $R = Y, Ho, Tb$ ) alloys

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The R–Co–B system possess good glass forming ability (GFA) due to large atomic size difference between rare earth element and boron atoms [1].  $Y_8Co_{62}B_{30}$ ,  $Ho_8Co_{62}B_{30}$  and  $Tb_8Co_{62}B_{30}$  ribbons were synthesized by melt-spinning method, as fully amorphous. Investigated alloys exhibit high thermal stability of amorphous structure, as confirmed by differential scanning calorimetry results and expected for good glass formers [2]. Temperature dependence of magnetization for Y-containing alloy is typical for ferromagnet, while for heavy rare earth elements, the antiferromagnetic coupling and strong anisotropy lead to sperimagnetic behavior. In the latter case, combined inverse and normal magnetocaloric effect is observed in broad temperature range.

## References:

- [1] Z. Śniadecki et al., J. Alloys Compd. 584 (2014) 477–482
- [2] K.K. Song, J. Appl. Phys. 112 (2012) 063503