

Magnetocaloric effect of amorphous (Fe,Mn)ZrNbB ribbons

Iwona Bialik,¹ Zbigniew Śniadecki,² Andrzej Musiał,² Anna Przybył,¹ and
Piotr Gębara¹

¹*Department of Physics, Częstochowa University of Technology,
Armii Krajowej 19, 42-200 Częstochowa, Poland*

²*Institute of Molecular Physics, Polish Academy of Sciences,
Smoluchowskiego 17, 60-179 Ponań, Poland*

The aim of the work was to study the structure, magnetic properties of the FeMnZrNbB alloys. The X-ray diffractometry and the Mössbauer spectroscopy studies confirmed amorphous structure. A monotonically decrease of the Curie temperature was observed with an increase of Mn content in alloy composition. The magnetocaloric effect was investigated indirectly based on M(H) magnetic isotherms collected in wide range of temperatures. The analysis of temperature evolution of the exponent n ($\Delta S_M = C \cdot (B_{max})^n$) showed the second order phase transition in investigated material.