

# The effect of substitution of Mn by Pd on the structure and thermomagnetic properties of the $\text{Mn}_{1-x}\text{Pd}_x\text{CoGe}$ alloys

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The aim of the present work is to study the influence of a partial substitution of Mn by Pd in MnCoGe alloys. The X-ray diffraction (XRD) studies revealed a co-existence of the orthorhombic TiNiSi-type and hexagonal Ni<sub>2</sub>In-type phases. The Rietveld analysis showed that the changes in lattice constants and content of recognized phases depended on the Pd addition. The occurrence of structural transformation was detected. This transformation was confirmed by analysis of the temperature dependence of exponent  $n$  given in the relation  $\Delta S_M = C \cdot (B_{MAX})^n$ . A decrease of the Curie temperature with an increase of the Pd content in the alloy composition was detected. The magnetic entropy changes were determined for  $\text{Mn}_{0.97}\text{Pd}_{0.03}\text{CoGe}$ ,  $\text{Mn}_{0.95}\text{Pd}_{0.05}\text{CoGe}$ ,  $\text{Mn}_{0.93}\text{Pd}_{0.07}\text{CoGe}$ , and  $\text{Mn}_{0.9}\text{Pd}_{0.1}\text{CoGe}$ .