

**STRUCTURE, THERMAL STABILITY AND MAGNETIC
PROPERTIES OF $\text{Fe}_{80-x}\text{Co}_x\text{P}_{14}\text{B}_6$ METALLIC GLASSES**

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Structure, thermal stability, and magnetic properties of $\text{Fe}_{80-x}\text{Co}_x\text{P}_{14}\text{B}_6$ ($20 \leq x \leq 40$) metallic glasses have been studied by means of X-ray diffraction (XRD), vibrating-sample magnetometry (VSM), non-isothermal differential scanning calorimetry (DSC) and thermomagnetic (TMG) measurements. All studied FeCo-based glasses crystallize into eutectic mixture of α -Fe and bc-tetragonal Fe_3P -like phases at temperatures in the range 730-745 K. Structural (sizes of the coherently scattered domains), thermal (the glass transition and crystallization temperatures, the heats and apparent activation energies of transformation) and magnetic (the saturation magnetization and the Curie temperatures) characteristics of the amorphous alloys have non-monotonic compositional dependencies. From the DSC and TMG data it follows that crystallization of the Co-rich glasses occurs at temperatures below its Curie points. The as-quenched amorphous $\text{Fe}_{80-x}\text{Co}_x\text{P}_{14}\text{B}_6$ alloys have improved magnetic properties and essentially enhanced thermal stability of the structure in comparison with the commercial $\text{Fe}_{80-x}\text{Ni}_x\text{P}_{14}\text{B}_6$ (MG2826) glasses.

9.7 cm

13.4 cm

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