

**MAGNETIC PROPERTIES AND PHASE CONSTITUTION OF
THE NANOCRYSTALLINE $(Nd_{10}Fe_{67}B_{23})_{100-x}Nb_x$
(where $x=1,2,3,4$) ALLOY RIBBONS**

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The magnetic properties and phase constitution of the $(Nd_{10}Fe_{67}B_{23})_{100-x}Nb_x$ (where $x=1,2,3,4$) alloy ribbons were investigated. The base alloys were prepared by arc-melting under an Ar atmosphere the high purity elements with pre-alloyed Fe-B. The ribbon samples were obtained by controlled atmosphere melt-spinning technique. In order to generate the nanocrystalline microstructure, the ribbon samples were annealed at various temperatures (from 923K to 1023K) for 5min. The aim of present work was to determine the influence of addition of Nb and annealing conditions on the phase constitution and magnetic properties of the ribbon samples. In as-cast state, ribbon samples were fully amorphous and soft magnetic. Subsequent annealing resulted in an evolution of the phase constitution together with change of their magnetic properties.

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13.4 cm

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9.7 cm