

Magnetic properties and phase constitution of the nanocrystalline $(\text{Nd}_{10}\text{Fe}_{67}\text{B}_{23})_{100-x}\text{Nb}_x$ (where $x=1,2,3,4$) alloy ribbons

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In the present work the magnetic properties and phase constitution of $(\text{Nd}_{10}\text{Fe}_{67}\text{B}_{23})_{100-x}\text{Nb}_x$ (where $x=1,2,3,4$) alloys in a form of ribbons were studied. The base alloys were prepared by arc-melting under an Ar atmosphere of 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, ribbons were annealed at various temperatures (from 923K to 1023K) for 5 minutes. The aim of present work was to determine the influence of Nb addition and annealing conditions on the phase constitution and magnetic properties.

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