Measurements of magnetocaloric effect in $LaFe_{11.14}Co_{0.66}Si_{1.2-x}Al_x$ (x=0.1, 0.2, 0.3) alloys

P. Gębara,[1] P. Pawlik,[1] B. Michalski,[2] and J.J. Wysłocki[1]

[1] *Institute of Physics, Częstochowa University of Technology, Al. Armii Krajowej 19, 42 – 200 Częstochowa*

[2] *Faculty of Materials Engineering, Warsaw University of Technology, ul. Wołoska 141, 02 – 507 Warszawa*

In present work, phase constitution and termomagnetic properties of $LaFe_{11.14}Co_{0.66}Si_{1.2-x}Al_x$ (where x= 0.1, 0.2, 0.3) alloys were investigated. Ingot samples were obtained by arc – melting under the low pressure Ar atmosphere. Subsequently samples were annealed at 1323K for 15 days. X-ray diffraction of all samples revealed coexistence of two crystalline phases dominant $La(Fe,Si)_{13}$ – type and minor bcc α-Fe. Furthermore, the magnetic measurements at various temperatures allowed to study Curie temperature, magnetic entropy changes and cooling capacity. Additionally, magnetic investigations allowed to determine the order of phase transition from ferro- to paramagnetic state.

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