Influence heat treatment on the irreversible structural relaxation in bulk amorphous Fe$_{61}$Co$_{10}$Ti$_3$Y$_6$B$_{20}$ alloy

Marcin Nabiałek, Katarzyna Błoch, and Michał Szota

$^1$Czestochowa University of Technology, Faculty of Materials Processing Technology and Applied Physics, Institute of Physics

$^2$Czestochowa University of Technology, Faculty of Materials Processing Technology and Applied Physics, Materials Engineering

In the amorphous materials are present a structural defects, which play a decisive role in the magnetization process in the area known as the approach to ferromagnetic saturation. The paper presents the results of magnetization studies in a strong magnetic fields of the bulk Fe$_{61}$Co$_{10}$Ti$_3$Y$_6$B$_{20}$ alloy obtained in the form of a rod 1mm in diameter, in the as-quenched state and after isothermal annealing process at a temperature below the crystallization temperature. It was observed that the heat treatment carried out below temperature $T_x$ leads to a irreversible structural relaxations, namely remodeling in atoms configuration in a volume of the amorphous structure.