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The effect of Co addition on magnetic and structural properties of nanocrystalline (Fe,Co)-Si-B-P-Cu alloys

Markus Kuhnt^{a,b}, Xiandong Xu^b, Marshal Amalraj^c, Pawel Kozikowski^d, K.G. Pradeep^c,

Tadakatsu Ohkubo^b, Mie Marsilius^e, Thomas Strache^e, Christian Polak^e, Masato Ohnuma^d,

Kazuhiro Hono^b, Giselher Herzer^{e,*}

^a Department of Materials Science, Alarich-Weiß-Straße 2, TU Darmstadt, D-64287 Darmstadt, Germany

^b Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, 305-0047 Tsukuba, Japan

^c Materials Chemistry, RWTH Aachen University, Kopernikusstr. 10, D-52074 Aachen, Germany

^d Faculty of Engineering, Hokkaido University, Kita 13, Nishu 8, 060-8628 Sapporo, Japan

^e Vacuumschmelze GmbH & Co. KG, Grüner Weg 37, D-63450 Hanau, Germany

corresponding author: Giselher Herzer (e-mail: gherzer@gmail.com)

Abstract

Magnetic properties of amorphous and nanocrystalline $\text{Fe}_{85.2-x}\text{Co}_x\text{Si}_{10.5}\text{B}_{9.5}\text{P}_4\text{Cu}_{0.8}$ ($x = 0, 4, 10, 15, 20, 25, 35, 40, 50$ and 57 at%) alloys have been investigated and their detailed structural parameters have been quantitatively investigated by X-ray diffraction, transmission electron microscopy (TEM), small angle X-ray scattering (SAXS) and three dimensional atom probe (3DAP). The nanocrystalline structure that forms by annealing the melt-spun amorphous ribbon at above 400°C comprises a bcc phase and a residual amorphous phase. Both

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