

Table of Contents

Preface

Amorphous Metals in Slovakia

J. Krempaský 1

Thermodynamic Stability of Amorphous Alloys

B. Predel 17

The Oxidation Behaviour of Amorphous Alloys

W. Gao and B. Cantor 39

Surface Crystallization of Metal-Metalloid Glasses

U. Köster, B. Punge-Witteler and G. Steinbrink 53

Surface Crystallization Induced by Selective Oxidation of Boron in Fe-B-Si Amorphous Alloy

N. Morito 63

Micromechanism of Crystallization of Amorphous Alloys

P. Duhaj and P. Svec 69

Crystallization from Amorphous Fe-Nd-B Alloys and their Hard Magnetic Properties

T. Horiguchi, H. Sekizawa, M. Murata, H. Kondo, T. Kawagoe, Y. Iguchi, K. Kohn and T. Mizoguchi 87

Crystallization and Relaxation of $\text{Fe}_{85-x}\text{Co}_x\text{B}_{15}$ Amorphous Alloys Rapidly Quenched from the Melt

S. Budurov, M. Lazarova and E. Illeková 93

Mössbauer and Resistometric Study of Crystallization of the Fe-Co-B Amorphous Alloys

T. Zemčík and M. Kocová 101

Kinetics of Crystallization in an $\text{Fe}_{90}\text{Zr}_{10}$ Amorphous Alloy

N. Zárubová, N. Moser and H. Kronmüller 107

The Processes of the Volume and Surface Crystallization of Amorphous Alloys Ni-Me (Zr,Nb,Mo)-B

V.I. Fadeeva, L.M. Kubalová, D.V. Varganov and I.N. Shabanova 113

Resistance Changes after Stress-Annealing in Co-Based Metallic Glasses

A. Siemko, J. Fink-Finowicki, L. Zaluski and M. Kuzminski 119

Influence of the Nature of Metalloid on the Morphology and Crystallization Kinetics of Fe-Co-B-Si Alloys

S. Suriñach, M.D. Baró, J.A. Diego, M.T. Clavaguera-Mora and N. Clavaguera 125

Crystallization of Fe-B Metallic Glasses

D. Oleszak and H. Matyja 131

Dilatometric Study of Crystallization Kinetics of $\text{Co}_{80-x}\text{Ni}_x\text{B}_{20}$ Glasses

G. Vlasák, Z. Bezáková and P. Duhaj 137

The Study of Crystallization Kinetics of $\text{Fe}_{85-x}\text{Co}_x\text{B}_{15}$ Metallic Glasses with Nonisothermal Dilatometry

G. Vlasák, Z. Bezáková, P. Duhaj and M. Jergel 143

Stability of Amorphous Iron in Fe/Si and Fe/Ge Multilayers

C. Dufour, A. Audouard, A. Brusson, B. George, G. Marchal, P. Mangin and E. Majková 147

Structural Relaxation in Metallic Glasses

G. Riontino and M. Baricco 155

Relaxation Processes in Metallic Glasses

K. Ludovít 165

Variation of the Structural Relaxation Exotherm of a $\text{Fe}_{73}\text{Co}_{12}\text{B}_{15}$ Metallic Glass

E. Illeková, A. Aharoune, F. Kuhnast, C. Cunat, J.M. Fiorani and P. Duhaj 173

Viscous Flow and Thermal Relaxation in $\text{Pd}_{82}\text{Si}_{18}$ Amorphous Alloy

K. Russew, L. Stojanova and E. Illeková 179

Influence of Composition on the Relaxation Kinetics in Metallic Glasses Containing Cr

T. Tarnóczy, E. Zsoldos and Z. Hegedűs 185

Structural Relaxation and Ductility of Amorphous Alloys

A.M. Glezer and O.L. Utevskaia 191

Structural Relaxation and Physical Criterion of the Stability of Magnetic Properties of Amorphous Alloys E.A. Dorofeeva	197
The Investigation of Processes in Amorphous Alloys Prior to Crystallization by DSC Method (Oxidation or Relaxation) I.A. Tomilin, S.D. Kaloshkin and P.D. Hoang	203
Mössbauer and Magnetic Studies of Relaxations in the Fe-Co-B Amorphous Alloys T. Zemčík and Y. Jirásková	209
Hyperfine Structure Changes in Amorphous Fe₇₀Co₁₀B₂₀ during Relaxation at 125°C I. Turek and T. Zemčík	215
Relaxation Changes in the Structure of the Cu_{53.5}Zr_{44.3}Nb_{2.2} Amorphous Alloy M. Jergel, G. Vlasák, J. Spisiak and P. Duhaj	221
Relaxation of the Cu₅₄Zr₄₄Nb₂ Amorphous Alloy J. Spisiak, L. Kubičár, M. Jergel and P. Duhaj	229
Interpretation of the Partial Structure Functions of Amorphous Binary Alloys by a Semi-Empirical Fitting and Simulating Procedure F. Hajdu and E. Sváb	237
Investigation of the Short Range Order of the Amorphous Pd_{33.3}Zr_{66.7} Alloy with Anomalous X-Ray Scattering F. Paul, C. Biehl, R. Frahm and P. Rabe	245
An EXAFS Study of Amorphous Fe₇₅TM₅B₂₀ (TM=Ti,V,Cr,Mn,Fe,Co,Ni) G. Cocco, E.P.M.V. Angelini, S. Enzo and G. Riontino	251
Investigation of the Atomic Structure and Thermal Stability of (Fe,Cr)₈₅B₁₅ Amorphous Alloys Subjected to Gamma-Pre-Irradiation D.J. Paderno, G.M. Zielinskaja, A.P. Brovko, V.V. Maslov and A.G. Iljinskij	259
The Temperature and Radiation Effects on a Local Order of Amorphous Alloys A.M. Shalaev, V.V. Kotov, V.V. Polotnjuk and I.N. Makeeva	267
Post Irradiation Activity of FeNiB Metallic Glasses J. Sitek, M. Miglierini and S. Balúch	275
Neutron Irradiation of Metallic Glasses and Mössbauer Spectroscopy M. Miglierini and J. Sitek	281
FMR Measurements of Ion Implanted Amorphous FeCrSiB Ribbons G. Serfözö, L.F. Kiss, C. Daróczi, J. Gyulai and E. Kisdi-Koszó	287
The Influence of Structure Changes on Charge and Spin Densities in Amorphous Fe₈₀B₂₀ Clusters I. Turek	293
Packing of Hard Circles P. Mrafko	299
Structure of Microcrystalline Liquid-Quenched Fe-Alloys V.V. Sosnin	305
Modulation of Hydrogen in Amorphous Materials M. Vergnat, S. Houssaini, A. Bruson, B. George, G. Marchal, P. Mangin and J.P. Stoquert	311
Glass Forming Ability, Structure and Properties of Ti and Zr-Intermetallic Compound Based Alloys V.V. Molokanov and V.N. Chebotnikov	319
The Influence of Short-Range Atomic Order on Mechanical Properties of Metallic Glasses Fe_{80-x}Ni_xB₂₀ V.Z. Bengus, E.B. Korolkova, P. Duhaj, V. Ocelík, P. Diko and E.D. Tabachnikova	333
Low Temperature Strength and Fracture of the Amorphous Metal Alloy Co₆₀Fe₅Ni₁₀Si₁₀B₁₅ E.D. Tabachnikova, E.B. Korolkova, P. Diko, J. Miskuf and K. Csach	339
Heat Treatment, Thickness and Magnetomechanical Coupling Coefficient of the Fe₇₉Si₁₂B₉ Metallic Glasses Z. Kaczowski	345
Some Physical and Chemical Properties of Amorphous Co₈₀B₂₀-Based Alloys V.V. Nemoschkalenko, A.P. Shpak, S.I. Latypov, N.S. Kobsenko, D.J. Paderno, A.G. Dmitriev, P. Duhaj and G. Vlasák	351
Influence of the Annealing History on the Magnetostriction Sensitivity Characteristics of the Fe₇₉Si₁₂B₉ Metallic Glasses Z. Kaczowski and G. Vlasák	357

Stability of Magnetic Field Induced Anisotropy in Amorphous Fe-B-Si Alloys with Different Additions S. Roth	363
Propagation of Fatigue Crack in Amorphous $\text{Fe}_{40}\text{Ni}_{40}\text{B}_{20}$ at High-Frequency Loading V. Ocelík, P. Palček, P. Diko, J. Miskuf and P. Duhaj	369
The Distribution of Magnetic Hyperfine Fields in Iron-Boron Amorphous Alloys Containing Transition Elements A.F. Prokoshin, M.A. Drozdova, A.N. Gelnov and L.V. Poperenko	375
Curie Temperature and Saturation Magnetostriction of Neutron Irradiated $\text{Fe}_{75}\text{Cr}_{10}\text{B}_{15}$ and $\text{Fe}_{77}\text{Cr}_8\text{B}_{15}$ Amorphous Alloys M. Hrabčák, M. Mihálik and J. Kovác	381
Influence of the Annealing in Magnetic Field at Temperature of 300°C on the Moduli of Elasticity of the $\text{Fe}_{79}\text{Si}_{12}\text{B}_9$ Metallic Glass Z. Kaczkowski and L.M. Malkinski	385
Excitation of FMR Surface Spin Waves in Amorphous FeNiB Alloys in Parallel and Normal Configuration Z. Frait and D. Fraitová	391
Structure and Electron Transport Properties of $\text{Au}_x\text{Si}_{1-x}$ Amorphous Alloys and of Au/Si Multilayers A. Audouard and M. Gerl	397
Investigation of Kinetics of Magnetic Anisotropy Formation in Metallic Glasses Induced by Magnetic Field S. Šimik, Z. Svestka and Z. Tischer	411
Annihilation of Positrons in $\text{Fe}_{80-x}\text{Ni}_x\text{B}_{20}$ Metallic Glasses K. Kristiaková, G. Tumbev and J. Krištiak	415
Reentrant-Spin-Glass and Small Angle Neutron Scattering P. Mangin, B. George, D. Boumazouza, J.J. Rhyne and R.W. Erwin	421
Some Piezomagnetic Properties of the $\text{Fe}_{64}\text{Co}_{21}\text{B}_{15}$ Amorphous Alloy Z. Kaczkowski and P. Duhaj	439
Diffusion of Au Atoms in Fe-Co-B Metallic Glass V. Bohác, E. Majková, S. Luby, R. Sandrik and M. Vesely	445
Anelastic Polarization of as-Cast Metallic Glass Ribbons P. Butvin, M. Hlásnik, G. Vlasák and B. Butvinová	451
Thermoelectric Power of Some Magnetic Metallic Glasses E. Majková and P. Duhaj	459