

Table of Contents

Preface

v

Self- and Solute Diffusion, Interdiffusion and Thermal Vacancies in the System Iron-Aluminium

H. Mehrer, M. Luckabauer and W. Sprengel..... 1

Effect of Austenitising Temperature on Microstructural Changes in High-Speed Steel of M2 Type Inoculated with Addition of WC Powder

A.S. Chaus, M. Beznák, J. Porubský and J. Sojka..... 27

Li Diffusion in (110) Oriented LiNbO₃ Single Crystals

J. Rahn, L. Dörrer, B. Ruprecht, P. Heitjans and H. Schmidt..... 33

Anisotropy of Hydrogen Diffusivity in ZnO

J. Čížek, F. Lukáč, M. Vlček, M. Vlach, I. Procházka, F. Traeger, D. Rogalla, H.W. Becker, W. Anwand, G. Brauer, S. Wagner, H. Uchida, A. Pundt and C. Bähzt 39

Diffusion Processes in Early Stages of Precipitation in Mg-Gd and Mg-Tb Alloys

O. Melikhova, J. Čížek, P. Hruška, M. Vlach, B. Smola, I. Stuliková and I. Procházka 51

Design and Development of Nb-W-Mo Alloy Membrane for Hydrogen Separation and Purification

H. Yukawa, T. Nambu and Y. Matsumoto 61

Calculating of Diffusion Profiles in Ternary Systems Using Effective Interdiffusion Coefficients of Components

Ü. Ugaste and J. Priimets..... 73

Bi-Velocity Phase Field Method

B. Wierzba, M. Danielewski, A. Nowotnik and J. Sieniawski 83

The Influence of Yttrium on Kinetics and Mechanism of Chromia Scale Growth on Fe-Cr-Ni Base Steels

Z. Grzesik, K. Adamaszek, Z. Jurasz and S. Mrowec 91

Magnetically Controlled Grain Boundary Migration and Microstructure Evolution in Zn

D.A. Molodov, C. Günster and G. Gottstein..... 101

Microstructure and Mechanical Properties of Directionally Solidified Unmodified and Ni-Modified Sn-0.7wt%Cu Lead-Free Solder Alloy

N. Cheung, A. Garcia and J.E. Spinelli..... 107

Diffusion of Particles Adsorbed on a Patchwise Surface

A. Tarasenko 117

Membrane Separation of CO₂ from Natural Gas: A State-of-the-Art Review on Material Development

A.L. Ahmad, J.K. Adewole, S.B. Ismail, L.C. Peng and A.S. Sultan..... 135

Effect of Grain Size on the High Temperature Oxidation Behaviour of Austenitic Stainless Steels

H. Fujikawa and Y. Iijima..... 149

Mössbauer Spectroscopy of Internal Interfaces in Metals

V.V. Popov..... 157

Pseudopartial Grain Boundary Wetting: Key to the Thin Intergranular Layers
B.B. Straumal, A.O. Rodin, A.E. Shotanov, A.B. Straumal,
O.A. Kogtenkova and B. Baretzky 175

Isotope Exchange between ¹⁸O₂ Gas and Mechanoactivated Oxide NdMnO_{3+δ}
O.M. Fedorova, A.Y. Fishman, T.E. Kurennykh, E.V. Vykhodets and V.B. Vykhodets 193

Fuel-Matrix Chemical Interaction between U-7wt.%Mo Alloy and Mg
K. Huang, H. Heinrich, D.D. Keiser and Y.H. Sohn 199

Keyword Index 207

Author Index 209