

Table of Contents

Brownian Particle Escape Rate Approaches	
J. Gouyet	1
How to Reliably Determine Equilibrium Vacancy Concentrations in Metals	
Y. Kraftmakher	17
Equilibrium Point Defects in Metals: Unsolved Problems	
Y. Kraftmakher	23
Direct Observation of Self-Interstitial Motion in Pure Iron by $^{56}\text{Fe}(\text{d},\text{p})^{57}\text{Fe}$ In-Beam Mössbauer Spectroscopy	
Y. Yoshida, Y. Kobayashi, F. Ambe, E. Yagi, X. Diao, J. Nakamura, H. Hässlein, A. Feinauer, T. Grund, A. Röck and A. Seeger	29
Measurement of the Low-Temperature Self-Diffusivity of Lithium by Elastic Recoil Detection Analysis	
O. Wieland and H.D. Carstanjen	35
Interstitial Cluster Motion in Nickel: A Molecular Dynamics Study	
N.V. Doan, D. Rodney and G. Martin	43
Theory of Diffusion under Pressure	
A.V. Nazarov, M.G. Ganchenkova and A.A. Mikheev	49
Vacancy Model for Threshold Electromigration in Thin Metallic Films	
A.N. Aleshin and L.S. Shvindlerman	55
The Enhancement of Diffusion Processes in BCC Phases of Anomalous Metals by Fluctuation-Induced Frenkel Pairs	
E.A. Smirnov	61
Diffusion in a Constant Magnetic Field: Influence of Matrix Magnetization	
A.V. Mironov, A.V. Pokoev, D.I. Stepanov and I.S. Trofimov	67
Interactions of Dissolved Atoms and Carbon Diffusion in Fe-Cr and Fe-Al Alloys	
I.S. Golovin, M.S. Blanter and L.B. Magalas	73
Volume and Grain Boundary Diffusion of Al in β-Ti by Laser Induced Breakdown Spectrometry (LIBS)	
C.G. Lee, K.T. Youn, Y. Lee, D. Yoo and T. Shimozaki	79
Diffusion Analysis of Rhenium in Graphite Using Rutherford Backscattering Spectroscopy	
R.H. Zee and J.L. Li	85
Impurity Diffusion of Al and Cu in γ-Fe	
O. Taguchi, M. Hagiwara, Y. Yamazaki and Y. Iijima	91
Sn and Sb Diffusion in α-Fe	
R.A. Pérez, D.N. Torres, M. Weissman and F. Dymant	97
Jahn-Teller Effect and Diffusion Activation Energy of Interstitial Atoms in α-Ti	
A.Y. Fishman and V.B. Vykhodets	103
Measurement of the Impurity Diffusion of Al in Ni by Laser Induced Breakdown Spectrometry (LIBS)	
C.G. Lee, K.T. Youn, H.H. Cho, Y. Lee, D. Yoo and T. Shimozaki	109
Diffusion in the Cottrell Atmosphere	
L.B. Magalas	115
The Measurement of Carbon Diffusivities in Fe-C-Cr-Mn-Si Steels by Chromatographic Methods	
J. Kučera, M. Hajduga, J. Glowacki and J. Čermák	121
Application of the Modified Electrostatic Model to Impurity Diffusion in γ-Iron	
D. Bergner, G. Neumann and V. Tölle	127
On Impurity Diffusion in β-Ti	
G. Neumann, V. Tölle and C. Tuijn	133
Diffusion in Dilute $\text{Fe}_{1-x}\text{Cu}_x$ Alloys: Comparison between a Rigid Lattice Model and Static EAM Simulations	
Y. Le Bouar and S. Walle	139
On-the-Fly Evaluation of Diffusional Parameters during a Monte-Carlo Simulation of Disordered AuNi Alloys	
J.L. Bocquet and C. Schmidt	145

A New Approach to Understanding Electromigration in Al(Cu) Alloys on an Atomistic Basis	151
C. Schmidt, J.P. Dekker, P. Gumbusch and E. Arzt	
The Concentration Dependence of Diffusion Coefficients in Binary Metal Systems: Empirical Relationships	
Ü. Ugaste	157
Calculation of the Effective Diffusion Coefficient in Inhomogeneous Solids	
J.R. Kalnin, E.A. Kotomin and V.N. Kuzovkov	163
Mean Field Kinetics: a Sound Framework for Understanding Diffusion in Alloys	
M. Nastar	171
Diffusive Relaxation of Short-Range Order Parameters and the Time Evolution of Diffuse Radiation Scattering in Solid Solutions	
V.A. Tatarenko and T.M. Radchenko	183
On the Relation between Interdiffusion and Tracer Diffusion Coefficients in Ternary Solid Solutions	
C. Cserháti, Ü. Ugaste, M.J.H. van Dal, N.J.H.G.M. Lousberg, A.A. Kodentsov and F.J.J. van Loo	189
Instabilities of Kirkendall Planes	
M.J.H. van Dal, A. Gusak, C. Cserháti, A.A. Kodentsov and F.J.J. van Loo	195
Interdiffusion-Independent Modes in Multicomponent Systems	
A. Gusak and P.J. Desré	201
Variable Intrinsic Diffusivities in Ternary and Higher Alloys	
R. Filipek	209
Nonparabolic Diffusion in Ternary Solutions	
R. Bachorczyk Nagy, M. Danielewski and W. Krzyżański	217
Diffusion Paths in Ternary Systems – Comparison of Onsager and Darken Models	
M. Danielewski, R. Bachorczyk Nagy, A. Milewska and Y. Ugaste	223
Interdiffusion in Ternary Alloys of Actinides with Transition Metals	
A.A. Shmakov and E.A. Smirnov	229
Quaternary Diffusion in the α Solid Solutions of Al-Zn-Mg-Ag Alloys	
T. Takahashi, K. Hisayuki, T. Yamane and Y. Minamino	235
Ternary Diffusion: A New Approach	
F. Guillemot, M. Joulaud, J. Debuigne and D. Ansel	241
Calculations of Interdiffusion Coefficients via an Extended Boltzmann-Matano Analysis of the Ti-Mo-Ta System	
F. Guillemot, I. Thibon, J. Debuigne and D. Ansel	247
Diffusion in 2000 Series Aluminum Alloys	
T. Yamane, K. Hisayuki, T. Takahashi and K. Fujita	253
Defects and Diffusion: First- Principles Modeling	
Y.J. Lee and R.M. Nieminen	261
Atomic Defects and Electronic Structure of B2 FeAl, CoAl and NiAl	
M. Fähnle, B. Meyer, G. Bester, J. Majer and N. Börnsen	279
Oxygen Self Diffusion in SiO₂: An Ab-Initio Approach	
G. Roma, Y. Limoge and S. Baroni	287
Structure and Energetics of Vacancies in Body Centered Cubic Hafnium under Pressure: First-Principles Study	
F. Willaime, A. Satta and S. de Gironcoli	295
Cesium Incorporation and Diffusion in Ca₁₀(PO₄)₆F₂, Ca₄La₆(SiO₄)₆F₂ and Ca₂La₈(SiO₄)₆O₂	
A. Chartier and C. Meis	303
Collective Diffusion of O Atoms on the W(110) Surface	
M.A. Załuska-Kotur, S. Kruckowski, Z. Romanowski and Ł.A. Turski	309
Bulk and Grain Boundary Diffusion in Intermetallic Compounds of the Systems Ni-Al and Ti-Al	
C. Herzig, S.V. Divinski, S. Frank and T. Przeorski	317
Point Defects and Diffusion in Nickel-Based L1₂-Ordered Compounds	
H. Numakura, T. Ikeda, H. Nakajima and M. Koiwa	337

Microscopic Diffusion Mechanisms in Fe-Al, Ni-Ga and (Ni Fe)-Al B2 Phases	
B. Sepiol, W. Löser, M. Kaisermayr, R. Weinkamer, P. Fratzl, H. Thiess, M. Sladecek and G. Vogl	349
Thermal Point Defects in FeAl, CoGa and NiGa Intermetallic Compounds	
S. Zaroual, O. Sassi, J. Aride, J. Bernardini and G. Moya	357
Diffusion in the Intermetallic Phase of Ordered $\text{Fe}_x\text{Si}_{1-x}$ (0.69)	
H. Thiess, B. Sepiol, R. Rüffer and G. Vogl	363
Diffusion Mechanism in the Hexagonal B8 Structure of FeSb	
M. Sladecek, M. Miglierini, B. Sepiol, H. Ipser, H. Schicketanz and G. Vogl	369
Vacancy Jumps in PdIn: Reconciling Nuclear Relaxation and Diffusion Measurements	
G.S. Collins and H.T. Nieuwenhuis	375
Vacancy-Vacancy Interactions in NiAl	
M.O. Zacate and G.S. Collins	383
Vacancy Formation and Diffusion in FeAl-Alloys	
T. Hehenkamp, P. Scholz, B. Köhler and R. Kerl	389
Atomic Defects in Ternary B2-(Fe,Ni) Al Alloys Studied by Time Differential Dilatometry	
W. Sprengel and H.E. Schaefer	397
Order and Migration Energies in a CoPt_3 Single Crystal: Experimental Determination from Neutron Scattering and Monte-Carlo Simulations	
V. Parasote, E. Kentzinger, V. Pierron-Bohnes, M.C. Cadeville, A. Kerrache, M. Zemirli, H. Bouzar and B. Hennion	403
The Six-Jump-Cycle Mechanism in Intermetallic Compounds: Extension to Nonstoichiometric Compositions	
I.V. Belova and G.E. Murch	411
The Six-Jump Diffusion Cycles in B2-Compounds	
R. Drautz, B. Meyer and M. Fähnle	417
Atomistic Study of Self-Diffusion in Ni, Al and Ni_3Al	
J. Duan, Y.N. Ossetsky and D.J. Bacon	423
Simulation of Diffusion Mechanisms in Ordered Structures	
M.G. Ganchenkova and A.V. Nazarov	429
Correlations of the Fluctuations of Order Parameters in Binary Stoichiometric Alloys at Equilibrium	
A.O. Kovalchuk	435
Diffusion in the $\text{L}1_2$ Ordered Structure: a Monte Carlo Study	
M. Athènes and P. Bellon	441
Ordering Kinetics in $\text{L}1_2$ and $\text{L}1_0$ Structures via a General Monte-Carlo Approach	
A. Kerrache, H. Bouzar, M. Zemirli, V. Pierron-Bohnes, M.C. Cadeville and M.A. Khan	447
Implementation of EAM-Potential Formalism with Monte-Carlo Simulation of 'Order-Order' Relaxations in Ni_3Al	
P. Oramus, R. Abdank-Kozubski, V. Pierron-Bohnes, M.C. Cadeville, C. Massobrio and W. Pfeiler	453
Correlation Factors in Intermetallic Alloys Determined using Neutron Scattering: Ni_3Sb, NiGa and CoGa	
M. Kaisermayr, J. Combet, B. Sepiol and G. Vogl	461
Tracer Diffusion in Iron-Aluminides	
M. Eggersmann and H. Mehrer	467
Pressure Dependence of Self-Diffusion in B2 Intermetallic Phases	
G. Erdélyi, Z. Erdélyi and D.L. Beke	473
Diffusion of ^{44}Ti and ^{63}Ni in Single-Crystal TiAl	
H. Kadowaki, T. Ikeda, H. Nakajima, H. Inui and M. Yamaguchi	481
Tracer Measurements of Ni Self- Diffusion and Atomistic Calculations of Diffusion Mechanisms in NiAl	
S.V. Divinski, S. Frank, U. Södervall and C. Herzog	487
Solute Diffusion in the Intermetallic Compound γ-TiAl	
T. Przeorski, M. Friesel, F. Hisker, S.V. Divinski and C. Herzog	493
Diffusion of Si and Ge in the Intermetallic Phase Fe_3Si: Ion Implantation and SIMS Studies	
M. Wellen, P. Fielitz, G. Borchardt, S. Weber, S. Scherrer, H. Mehrer, H. Baumann and B. Sepiol	499

Tracer Diffusion in Ni₃Ga and its Relation to Thermodynamic Properties	505
T. Ikeda, H. Numakura, H. Nakajima and M. Koiwa	
Tracer Diffusion of Ni and Ge in L1₂-Type Intermetallic Compound Ni₃Ge	511
T. Ikeda, H. Nakajima, H. Numakura and M. Koiwa	
In Diffusion in B2-Type Ordered NiAl Intermetallic Compound	517
Y. Minamino, Y. Koizumi and Y. Inui	
Diffusion of ⁷¹Ge in Molybdenum Disilicide	523
M. Salamon, K. Ito, M. Yamaguchi, K. Freitag, D. Eversheim and H. Mehrer	
The Vacancy Wind Effect in Intermetallic Compounds	533
G.E. Murch and I.V. Belova	
Chemical Diffusion in Ni₃Al	541
G.E. Murch and I.V. Belova	
A Self-Consistent Theory of Atomic Transport in the B2 Ordered Alloy: The Sum Rule	547
I.V. Belova and G.E. Murch	
Interdiffusion and Diffusion of Al in Iron-Aluminides	553
M. Salamon, S. Dorfman, D. Fuks, G. Inden and H. Mehrer	
Tracer and Chemical Diffusion in Pt₃Fe	559
Y. Nosé, H. Numakura, M. Koiwa, T. Ikeda and H. Nakajima	
Intrinsic Diffusion in Ni₃Al	565
K. Fujiwara and Z. Horita	
Interdiffusion in the Pt/β-NiAl System	571
R. Filippek, P.K. Datta, M. Danielewski, L. Bednarz, R. Best and A. Rakowska	
Coalescence Behavior of the Antiphase Domain in Ti₃Al	577
Y. Koizumi, Y. Minamino, T. Nakano and Y. Umakoshi	
Ordering in Cu₃Au: Equilibrium, Kinetics and Domain Growth	583
H. Lang, H. Uzawa, T. Mohri and W. Pfeiler	
Mechanical Properties of Intermetallic γ-TiAl Based Alloys at Elevated Temperatures	589
M. Weller, A. Chatterjee, G. Haneczok and H. Clemens	
Diffusion of Dopants and Impurities in Device Structures of SiC, SiGe and Si	597
M.S. Janson, M.K. Linnarsson, J.S. Christensen, P. Lévêque, A.Y. Kuznetsov, H.H. Radamson, A. Hallén, A. Nylandsted-Larsen and B.G. Svensson	
In-Beam Mössbauer Study of Interstitial and Substitutional ⁵⁷Mn/⁵⁷Fe Jumps in Si	611
Y. Yoshida, Y. Kobayashi, K. Hayakawa, K. Yukihira, F. Shimura, A. Yoshida, X. Diao, H. Ogawa, Y. Yano and F. Ambe	
Controlling Process of P Diffusion in Si Based on the Pair Diffusion Model	617
M. Yoshida, M. Morooka, M. Takahashi and H. Tomokage	
Effect of Surface Condition on the Solid Solubility of Substitutional Gold in the Out-Diffusion of Supersaturated Gold in Silicon	623
M. Morooka, Y. Nakabayashi and S. Matsumoto	
Diffusion of Gold in Germanium	629
A. Strohm, S. Matics and W. Frank	
Diffusion and Solubility of Iridium in Silicon	635
S. Obeidi and N. Stolwijk	
Self Interstitials, Vacancies and Oxygen Atoms in CZ Silicon	641
T. Okino, T. Shimozaki and C.G. Lee	
Preliminary Results of Numerical Profiles for the Simultaneous Diffusion of Boron and Point Defects in Silicon using Irreversible Thermodynamic Theory	647
D.K. An and V.B. Dung	
Computer Calculations of the Enhanced Diffusivity and Effective Activation Energy from Measured Profiles of Impurites in Silicon	653
D.K. An	
Diffusion of Implanted ¹⁹⁵Au Radiotracer Atoms in Amorphous Silicon under Irradiation with 1 Mev-N⁺ Ions	659
T. Voss, P. Scharwaechter, W. Frank and Isolde Collaboration	
Diffusion Creep of Silicon during Direct Silicon Wafer Bonding	667
E. Belyakova, N. Shmidt, V.V. Ratnikov, A.A. Kamanin, E.D. Kim and S.C. Kim	
Self-Assembled Impurity Superlattices and Microcavities in Silicon	673
N.T. Bagraev, A.D. Bouravlev, W. Gehlhoff, L.E. Klyachkin, A.M. Malyarenko and S.A. Rykov	

Low Temperature Impurity Diffusion into Large-Band-Gap Semiconductors	679
N.T. Bagraev, A.D. Bouravleuv, A.A. Gippius, L.E. Klyachkin and A.M. Malyarenko	
Hybrid Impurity and Self-Diffusion in GaAs and Related Compounds: Recent Progress	687
N. Stolwijk, G. Bösken and J. Pöpping	
Boron Diffusion in Strained and Relaxed Si_{1-x}Ge_x	703
N.R. Zangenberg, J. Fage-Pedersen, J. Lundsgaard Hansen and A. Nylandsted-Larsen	
Phosphorus Diffusion in Si_{1-x}Ge_x	709
J.S. Christensen, A.Y. Kuznetsov, H.H. Radamson and B.G. Svensson	
Enhanced Diffusion Following Point Defect Injection into B in SiGe and Si	717
A.F.W. Willoughby, J.M. Bonar, A. Dan and B.M. McGregor	
Measurements and Modeling of Zinc Diffusion Profiles in Gallium Phosphide	723
J. Pöpping, N. Stolwijk, G. Bösken, C. Jäger, W. Jäger and U. Södervall	
Defect Formation During Zinc Diffusion in GaP	731
C. Jäger, W. Jäger, J. Pöpping, N. Stolwijk and U. Södervall	
Microstructure of GaN Heteroepitaxial Layers after Diffusion of Mg, Zn and Au under High Pressure	737
D. Kolesnikow, W. Łojkowski, C. Jäger, W. Jäger, M. Gastel and L.N. Paritskaya	
GaAs Surface Modifications Under Millimetre Wave Irradiation	745
D.V. Lioubtchenko, T.A. Briantseva, Z.M. Lebedeva, I.A. Markov and A.V. Räisänen	
Zinc Diffusion into Gallium Antimonide from Polymer Spin-On Films	751
A.A. Kamanin, N. Shmidt, B. Ber, V.V. Ratnikov, V. Khvostikov, V. Lantratov, T. L'vova, S. Sorokina and V. Andreev	
Au Diffusion in Polycrystalline CdTe Thin Films	755
N. Di Lalla, R.A. Pérez and F. Dymont	
Spatial Separation of Vacancies and Interstitials in the Initial Stage of Zinc Diffusion in Indium Phosphide	761
A.A. Kamanin, B. Ber, V.V. Ratnikov, N. Shmidt and A.N. Smirnov	
Coherent Diffusion in InGaAsP Heterostructures	767
A. Holm, J. Buršík, D.V. Malakhov, Y. Wang, G.C. Weatherly and G.R. Purdy	
Simulating Diffusion at Low Temperatures in Binary Lennard-Jones Glasses: The Activation-Relaxation Technique	775
N. Mousseau	
Diffusion in Quasicrystals	789
H. Nakajima and T. Zumkley	
Diffusion of B and Fe in Differently Produced and Heat Treated Zr_{46.75}Ti_{8.25}Cu_{7.5}Ni₁₀Be_{27.5} Glass	801
T. Zumkley, V. Naundorf, M.P. Macht and G. Frohberg	
Reactive Diffusion in Al/Pt Films and the Determination of the Diffusion Coefficients of Al in Amorphous Al₂Pt	807
P. Gas, C. Bergman, G. Clugnet, P.B. Barna, A. Kovács and J.L. Lábár	
Activation Energy for the Structural Relaxation Process of Amorphous Tb-Fe and Tb-Fe-Si Alloys	815
K. Yamada, M. Ito, M. Tatsumiya, Y. Iijima and K. Fukamichi	
Does the Diffusion Mechanism Change at the Caloric Glass Transition of Bulk Metallic Glasses?	821
F. Faupel, H. Ehmler, C. Nagel and K. Rätzke	
Activation Parameters for Tracer Diffusion in a Ni₅₄Zr₄₆ Amorphous Alloy	827
Y. Loirat, Y. Limoge and J.L. Bocquet	
Diffusion and Thermal Defects in Amorphous Metals	833
K. Rätzke, P. Klugkist, A. Heesemann and F. Faupel	
Is Diffusion in Selenium Heterogeneous or Homogeneous?	841
D. Caprion and H.R. Schober	
Simulation of Diffusion in Amorphous Solids and Liquids	849
M. Kluge and H.R. Schober	
Diffusion in Lennard-Jones Glasses: Simulation Studies of the Activation Parameters for Collective Mechanisms	855
Y. Loirat, G. Brébec, Y. Limoge, N. Mousseau and J.L. Bocquet	

The Random Trap Model and the D₀-Q Correlation in Disordered Structures	861
V. Naundorf and C. Abromeit	
Diffusion in Icosahedral Zn-Mg-RE and Al-Pd-Mn Quasicrystals	867
R. Galler, R. Sterzel, W. Assmus and H. Mehrer	
Self-Diffusion of Ni and Co in Decagonal Al-Ni-Co Quasicrystals	873
C. Khoukaz, R. Galler, M. Feuerbacher and H. Mehrer	
Determination of the Interdiffusion Coefficients of Liquid Zn and Sn Using Ta/Zn-Sn/Si Trilayers	883
Relaxation and Diffusion in Glass-Forming Metallic Liquids	891
A. Meyer, S. Roth and W. Petry	
Diffusion in and Through Polymers	897
F. Bénieré	
Tracer Diffusion Studies of Chalcogenide Glasses	909
E. Bychkov	
⁶⁴Cu Tracer Diffusion in Copper Chalcogenide Glasses	919
E. Bychkov, A. Bolotov, V. Tsegelnik, Y.S. Grushko and Y. Vlasov	
Diffusion in Single and Mixed-Alkali Borate Glasses	925
U. Schoo, C. Cramer, E. Ratai and H. Mehrer	
Li Diffusion in Nano- and Microcrystalline (1-x)Li₂O:xB₂O₃	935
S. Indris, P. Heijmans, H.E. Roman and A. Bunde	
Tracer Self-Diffusion Studies in Amorphous Si-(B)-C-N Ceramics Using Ion Implantation and SIMS	941
H. Schmidt, G. Borchardt, H. Baumann, S. Weber, S. Scherrer, A. Müller and J. Bill	
Diffusion of Gold in the Amorphous Ceramic Si₂₈C₃₆N₃₆	947
S. Matics and W. Frank	
Diffusion in Archaeological Bone	953
I. Reiche, C. Vignaud, L. Favre-Quattropani, L. Charlet and M. Menu	
Sodium Diffusion and Isotope Effect in an Aqueous Gel	961
L.W. Barr and D.W. Smart	
Effect of Aging on Diffusion of Small Molecules in Polymer Glasses	969
P. Pekarski and R. Kirchheim	
Study of the Transport of Small Molecules in Amorphous Polymers by Means of Mechanical Spectroscopy	975
I. Böhm, P. Pekarski, H.-. Brion and R. Kirchheim	
Diffusion and Geophysics: Geospeedometry and Compensation Rule	983
O. Jaoul and F. Béjina	
Chemical Diffusion Across Grain Boundaries: In-Situ Observation and Phenomenological Modeling	1001
J. Jamnik, M. Leonhardt and J. Maier	
Diffusion of ^{110m}Ag Tracer in Polycrystalline Piezoelectric Ceramics	1009
D.J. Lewis, D. Gupta, M.R. Notis and Y. Imanaka	
Stress-Diffusion Coupling Applied to Oxygen Dissolution in Metals: Anisotropy Geometry and Mechanical Properties Gradient Effects	1017
J. Favergon, T. Montesin, I. Desvignes and G. Bertrand	
Influence of Oxygen Activity-Dependent Interfacial Non-Stoichiometry on Diffusion at Metal-Oxide Interfaces	1025
M. Backhaus-Ricoult	
Ni Short-Circuit Diffusion in Alumina	1033
I. Vallasek, G. Erdélyi, G.A. Langer, I. Gódény and D.L. Beke	
Cation Mobility in Y₂O₃- and CaO-Stabilised ZrO₂ Studied by Tracer Diffusion and Mechanical Spectroscopy	1039
M. Kilo, M. Weller, G. Borchardt, B. Damson, S. Weber and S. Scherrer	
Diffusion Structural Analysis of Oxygen Sublattices in Oxides	1045
V.B. Vykhodets, T.E. Kurennykh, B.V. Slobodin, E.E. Soldatova and A.Y. Fishman	
Selfdiffusion and Point Defects in Iron Oxides: FeO, Fe₃O₄, α-Fe₂O₃	1051
B. Amami, M. Addou and C.J.A. Monty	
Recovery Creep and Diffusion in Magnetite (Fe₃O₄) Single Crystals	1057
D. Gómez-García, A. Domínguez-Rodríguez, J. Castaing and F. Millot	

Hydrogen-Induced Superabundant Vacancies and Diffusion Enhancement in Some FCC Metals	
Y. Fukai, T. Haraguchi, E. Hayashi, Y. Ishii, Y. Kurokawa and J. Yanagawa	1063
Interdiffusion in Au / Fe Couples under Elevated Hydrogen Pressures	
Y. Yamazaki, H. Kakuta, M. Okada and Y. Iijima	1069
Volumetric Measurement of Hydrogen Permeation in Certain Ni-Al - Based Alloys	
J. Čermák, V. Rothová and I. Stloukal	1075
The Role of Microstructure in Hydrogen Permeation in Palladium and Pd₇₇Ag₂₃ Alloys	
Y. Cao, J.A. Szpunar and W. Shmayda	1081
Hydrogen Solubility and Diffusivity in Palladium-Rich Alloys	
D.S. dos Santos, S. Miraglia, D. Fruchart and P.E.V. de Miranda	1087
Diffusion Loss of Hydrogen Isotopes from Iron Based Alloys	
L.I. Ivanov, V.N. Pimenov, Ü. Ugaste, E.V. Dyomina, S.A. Maslyakov, V.A. Gribkov and F. Mezzetti	1093
Hydride-Like Segregation at Dislocations in α-Iron and Steels	
Y.S. Nechaev and G.A. Filippov	1099
Effect of Hydrogen on Processes of Reactive Diffusion in a 'Metal - Protective Coating' System	
V.V. Fedorov, E.V. Dyomina, T.M. Zasadny, R.I. Koroluk, M.D. Prusakova and N.A. Vinogradova	1105
50 Years of Grain Boundary Diffusion: What Do We Know about It Today?	
Y.M. Mishin	1113
On the Physical Meaning of the Segregation Coefficient Determined by Tracer Diffusion Measurements in the Harrison's B- and C-Type Regimes: Results on Ag in Cu Polycrystals	
S.V. Divinski, M. Lohmann and C. Herzog	1127
Non-Linear Thermodynamic Effects of Grain Boundary Heterodiffusion and Segregation	
A.S. Ostrovsky and B.S. Bokstein	1135
Effect of Diffusant Segregation on the Misorientation Dependences of the Characteristics of Grain-Boundary Diffusion: Ni and Au in Copper	
S.I. Prokofjev	1141
Effect of Grain Boundary Structure on Diffusion Parameters	
A.N. Aleshin, R.G. Faulkner and L.S. Shvinderman	1147
Pressure and Orientation Dependence of Zn Diffusion along <001> Tilt Grain Boundaries in Al Bicrystals	
P. Klugkist, A.N. Aleshin, W. Łojkowski, L.S. Shvinderman, W. Gust and E.J. Mittemeijer	1153
Experimental and Theoretical Study of Type-C Grain Boundary and Volume Diffusion by AES in Metal/Metal Structures	
Z. Erdélyi, C. Girardeaux, J. Bernardini, D.L. Beke and A. Rolland	1161
Investigation of the Diffusion Mechanism of ⁵⁷Co Atomic Probes at the Grain Boundary Core, Segregation of ⁵⁷Co at Grain Boundaries and Measurement of the Diffusion Parameters of ⁵⁷Co Outside of the Grain Boundary Core in Polycrystals of Ta, W and Cr.	
S.M. Klotsman, V.N. Kaigorodov and M.I. Kurkin	1167
Intercrystallite Diffusion and Segregation of ⁵⁷Co Atomic Probes at Grain Boundaries in Polycrystals of Noble Metals: Palladium, Platinum and Gold	
V.K. Rudenko, N.I. Timofeev, A.N. Timofeyev, S.M. Klotsman, M.I. Kurkin and V.N. Kaigorodov	1173
Intercrystallite Diffusion of ⁵⁷Co and ¹⁹⁵Au in Iridium Polycrystals. The Structure and Physical Properties of States Populated by ⁵⁷Co During Intercrystallite Diffusion	
S.M. Klotsman, S.A. Matveev, G.N. Tatarinova, A.N. Timofeyev, V.N. Kaigorodov, A.V. Ermakov, N.I. Timofeev and G.F. Kuzmenko	1179
A New Parameter, Sensitive to the Type of Profile in the Diffusion Zone, and a Set of Grain Boundaries in a Polycrystal	
M.I. Kurkin, S.M. Klotsman, A.N. Timofeyev and V.K. Rudenko	1185
Grain Boundary Porosity in NiAl Induced by Cu Diffusion	
E. Rabkin, L. Klinger, T. Izumova and V.N. Semenov	1191
Self-Diffusion in Nanocrystalline Fe and Fe-Rich Alloys	
S. Herth, T. Michel, H. Tanimoto, M. Eggersmann, R. Dittmar, H.E. Schaefer, W. Frank and R. Würschum	1199

Diffusion in Ultrafine-Grained Al-Mg Alloys	1205
T. Fujita, H. Hasegawa, Z. Horita and T.G. Langdon	
Co-Diffusion Along the Alpha/Beta Interphase Boundaries of a Zr-2.5%Nb Alloy	1211
M.J. Iribarren, O.E. Agüero and F. Dymont	
Vacancy Segregation at Surface Grain Boundaries and their Intersection: an Atomistic Study	1217
J. Creuze, F. Berthier, R. Tétot and B. Legrand	
Analysis of the Hart Equation in Fine-Grained Material	1223
I.V. Belova and G.E. Murch	
Computer Simulation of a Diffusion Process in a Polycrystalline Material	1227
H.L. Li and J.A. Szpunar	
Effect of Precipitates on Grain Boundary Diffusion-3D Case	1233
N. Chouit, N. Guediri-Khader, D.E. Mekki and R.J. Tarento	
Diffusion of ^{51}Cr in a Cold-Rolled 18Cr8Ni-Steel	1239
Z. Tökei and H.J. Grabke	
Mass Transfer by Laser-Generated Dislocations	1247
A. Pogorelov and A. Zhuravlev	
The Kinetics and Thermodynamics of Deformation Twin Grain Boundaries in Zn	1253
A.U. Tuflin, V.G. Sursaeva and U. Czubayko	
The Kinetic Parameters of Triple Junction Motion in Aluminium	1259
S. Protasova and V.G. Sursaeva	
Triple Junction Diffusion: Experiments and Models	1265
A. Petelin, S. Peteline and O. Oreshina	
Grain Boundary Wetting: Diffusion or Non-Diffusion Mechanism	1273
I. Apykhtina, B.S. Bokstein, A.S. Ostrovsky, A. Petelin, A. Rodin and D.J. Srolovitz	
Atomic Transport at Liquid Metal / Al_2O_3 Interfaces	1297
E. Saiz, R.M. Cannon and A.P. Tomsia	
The Role of Diffusion and Faceting in Surface and Grain Boundary Wetting	1307
D. Chatain, V. Ghetta, J. Bernardini and E. Rabkin	
Direct Observation of Grain Boundary Wetting by Synchrotron Radiation Imaging Techniques	1319
W. Ludwig, S.F. Nielsen, H.F. Poulsen and D. Bellet	
Kinetics of Diffusion-Controlled Grooving in Solid-Liquid Systems	1331
I. Apykhtina, B.S. Bokstein, A. Khusnutdinova, A. Petelin and S. Rakov	
Diffusion of Au along $<100>$ Symmetrical Tilt Boundaries in Copper: Grain-Boundary Roughening?	1337
S.I. Prokofjev	
Grain Boundary Phase Transitions in the Cu-Bi System	1343
B.B. Straumal, S.I. Prokofjev, L.S. Chang, N.E. Sluchanko, B. Baretzky, W. Gust and E.J. Mittemeijer	
Reactive Solid-State De-Wetting of Ag Films on Ni Substrates: Kinetics and Mechanisms	1349
H. de Monestrol, L. Schmiegeld-Mignot, P. Molinàs-Mata, S. Poissonnet, L. Gay and G. Martin	
Growth of the L1_0 Structure in Co-Deposited (001) Epitaxial Co-Pt Alloy Films Driven by Surface and Volume Diffusion	1357
V. Parasote, O. Ersen, V. Pierron-Bohnes, C. Ulhaq-Bouillet, D. Spor, J. Arabski and M.C. Cadeville	
Abnormal Segregation Kinetics During Recovery	1363
F. Christien, R. Le Gall and G. Saindrenan	
Grain Boundary Grooves with Singular Walls	1369
L. Klinger	
Surface-/Point-Defect Interaction in Zr: a Static Simulation Study	1375
J.R. Fernández, M.I. Pascuet, R.C. Pasianot and A.M. Monti	
Vacancies near to Metal Surfaces: Formation Energy and Interlayer Migration	1381
F. Willaime, Y. Piquet and B. Legrand	
Molecular Dynamics Simulation Study of Ni^{2+} Adatom Diffusion on the NiO (001) Surface	1387
T.E. Karakasidis, D.G. Papageorgiou and G.A. Evangelakis	
Diffusion in a Triangular Antiferromagnetic Lattice Gas	1393
A. Tarasenko, L. Jastrabik, F. Nieto and C. Uebing	

Diffusion and Thermal Stability in Multilayers	1403
D.L. Beke, G.A. Langer, A. Csik, Z. Erdélyi, M. Kis-Varga, I.A. Szabó and Z. Papp	
Electromigration Kinetics in Thin Film Interconnects: Electro-Transport Coupled to Diffusional Creep	1417
E.E. Glickman and M. Nathan	
Diffusion and Stresses in Multiphase Solids	1431
I.A. Szabó, G. Opposits and D.L. Beke	
Early Stages of Interdiffusion in Cu / Au Multilayers	1437
F. Hartung, P.J. Wilbrandt and G. Schmitz	
On the Identification of the Diffusion Ageing Mode of Ni/Cu Assemblies	1445
O. Arnould, J. Duval and F. Hild	
Radiation Enhancement of Diffusion in Metals and Alloys	1451
E.A. Smirnov and A.A. Shmakov	
Ionic Nitriding of Austenitic and Ferritic Steel with the Aid of a High Aperture Hall Current Accelerator	1457
B.B. Straumal, N.F. Vershinin, M. Friesel, T.V. Ishenko, S.A. Polyakov and W. Gust	
Radiation-Enhanced Diffusion Effect in the Ion Beam Synthesis of Iron Silicides	1463
G.G. Gumarov, I.B. Khaibullin and V.A. Zhikharev	
Possible Mechanism of Anomalous Mass Transfer under Pulse Loading	1469
D.S. Gertzricken, T.V. Kolenova and A. Gusak	
Exploring Thin-Film Reactions by Means of Simultaneous X-Ray Surface Roughness and Resistance Measurements	1477
C. Lavoie, C. Cabral, F.M. d'Heurle and J.M.E. Harper	
Patterning in Reactive Diffusion	1491
A.A. Kodentsov, M.J.H. van Dal, C. Cserháti, A. Gusak and F.J.J. van Loo	
Reaction Diffusion in Binary Solid-Solid, Solid-Liquid and Solid-Gas Systems: Common and Distinctive Features	1503
V.I. Dybkov	
Diffusional Phase Transformation in the Fe-Zn-Al System: The Galvanising of Steels	1523
M. Guttmann, Y. Leprêtre and J.- Mataigne	
Reactive Interdiffusion of Cu/Co/Au Thin-Film Couples Investigated by 3-Dimensional Atom-Probe	1525
C. Lang, G. Schmitz and R. Kirchheim	
Kinetics of Reactive Diffusion in Al/Co Multilayers	1533
C. Bergman, E. Emeric, G. Clugnet and P. Gas	
The Kinetics of Cd₁₈Cu₆ Intermetallic Growth under Elevated Hydrostatic Pressures	1539
L.N. Paritskaya, V.V. Bogdanov, Y.S. Kaganovsky, W. Łojkowski, D. Kolesnikow and A. Presz	
Surface Diffusion Intermetallic Growth under Elevated Hydrostatic Pressure	1545
Y.S. Kaganovsky, L.N. Paritskaya, V.V. Bogdanov, W. Łojkowski, D. Kolesnikow and A. Presz	
Solid State Diffusion in the Bi-Pd System	1551
P.J.T.L. Oberndorff, M.G.A. van Vinken, A.A. Kodentsov and F.J.J. van Loo	
High-Temperature Silicon Diffusivities in Mo₅Si₃ and W₅Si₃ Phases	1557
S.L. Kharatyan, H.A. Chatilyan and A.B. Harutyunyan	
Interfacial Pattern Formation in the Pt-Ni-O System, Studied by Energy-Filtering Transmission Electron Microscopy	1563
A. Schröder, W. Sitte, I. Rom, W. Grogger and F. Hofer	
Reaction Diffusion in the Au-Ti System between 1110K and 1150K	1569
O. Taguchi, T. Watanobe, Y. Yamazaki and Y. Iijima	
Investigations of Phase Growth in the Copper-Tin System	1575
S. Däbritz, V. Hoffmann, G. Sadowski and D. Bergner	
Growth of Intermetallic Phases in the Al-Mg System	1581
E.M. Tanguep Njiokep, M. Salamon and H. Mehrer	
The Effect of Impurities in Iron on the Growth of Iron Silicides Formed in Fe/Si Bulk Diffusion Couples	1587
T. Shimozaki, A. Hirai, T. Okino and C.G. Lee	
Reaction Layer Sequences at the Interface Between Iron and Al-Si Alloys	1593
D. Pierre, F. Barbeau, M. Peronnet, F. Bosselet and J.C. Viala	

Kinetics of Interfacial Reactions in the Liquid Pd-Mg/α-Al₂O₃ System	1599
F. Hodaj, I. Guesdon and N. Eustathopoulos	
Formation of Molybdenum Nitrides by Ammonia Nitridation of Mo Powder and Sheet	1607
V. Ucakar, F. Cheviré, F. Tessier, N. Krendelsberger, R. Marchand and W. Lengauer	
Layer-Growth of Tantalum Nitrides by Nitridation of Ta Metal: the Basis of the Preparation of a Well-Characterised Nitrogen Standard Material	1613
M. Dopita, B. Wollein, D. Rafaja, W. Gruner and W. Lengauer	
Reactive Diffusion in the GaSb-Co System at 500°C	1619
A.A. Kodentsov, S.L. Markovski, C. Cserháti and F.J.J. van Loo	
Initial Stage of Reactive Diffusion: Nucleation and Avrami Kinetics	1625
A. Gusak, A.O. Bogatyrev and A.O. Kovalchuk	
On Reactive Diffusion: 1) Kinetics, Growth and Diffusion, 2) Equilibrium?	1631
F.M. d'Heurle, P. Gas, J. Philibert and S.-. Zhang	
The Detection of Structural Conversions in Crystallizing Thin Films of the Ta-Si System by the Method of Coherent Optical Fourier-Analysis	1637
S.I. Sidorenko, Y.N. Makogon, V.A. Mokhort, A.A. Dziaryk and O.V. Zelenin	
The Influence of Deposition Conditions upon the Development of Solid-State Reactions in the Ta-Si Thin Film Systemi	1643
Y.N. Makogon, E.P. Pavlova and S.I. Sidorenko	
Surface and Interface Reactions and Diffusion during the High-Temperature Corrosion of Metals and Alloys	1649
H.J. Grabke	
A Diffusion-Based Model for Uniform Corrosion	1661
S. Nešić, M. Nordsveen, R. Nyborg and A. Stangeland	
Diffusion and High-Temperature Oxidation of Nickel	1675
D. Monceau, R. Peraldi and B. Pieraggi	
The Role of Oxide Grain Boundary Character Distribution in Nickel Oxidation Kinetics	1683
H.L. Li, F. Czerwinski and J.A. Szpunar	
The Role of Fast Diffusion Paths in the Selective Oxidation of Chromium Steels	1689
C. Piehl, Z. Tókei and H.J. Grabke	
Effect of a Tensile Load on the Oxide Growth Rate on Ni-20Cr Alloy	1695
G. Calvarin-Amiri, B. Lesage, A.M. Huntz and R. Molins	
Decarburization and Hardness Changes in Carbon Steels Caused by High-Temperature Surface Oxidation in Ambient Air	1701
K. Adamaszek, P. Brož and J. Kučera	
Aluminium Depletion in FeCrAl Alloys During Oxidation	1707
B. Lesage, L. Maréchal, A.M. Huntz and R. Molins	
Some New Aspects of the Internal Oxidation of Metals	1713
Y.S. Nechaev	
Calculations of Iron Diffusion Coefficients - High-Temperature Oxidation in Air in a Cylindrical Geometry	1719
Z. Jurasz, M. Danielewski and R. Filipek	
On the Defect Mobility in Ni_{1-x}S	1725
Z. Grzesik	
Transport Properties of α-MnS, Comparison of Different Techniques	1731
Z. Grzesik, J. Gilewicz-Wolter, M. Wolter, S. Mrowec and M. Danielewski	
Interaction of Point Defects with Extended Defects in the Si-SiO₂ System during its Formation Process	1737
D. Kropman, T. Kärner, U. Abru, M. Strik, Ü. Ugaste and E. Mellikov	
Interface Migration in Diffusional Phase Transformations: Thermodynamic and Kinetic Aspects	1745
G.R. Purdy	
The Role of Grain Boundary Diffusion in Discontinuous Reactions	1759
P. Zięba, A. Pawłowski and W. Gust	
Modeling of Niobium Carbide Precipitation in Steel	1767
P. Maugis, D. Gendt, S. Lanteri and P. Barges	

Comparison of Measured and Calculated Thicknesses of Martensite and Ledeburite Shells Around Graphite Nodules in the Hardened Layer after Laser Surface Remelting	1773
J. Grum and R. Šturm	
Monte Carlo Simulation of NbC Precipitation Kinetics in α-Fe	1779
D. Gendt, P. Maugis, G. Martin, M. Nastar and F. Soisson	
Monte Carlo Investigation of Thermal Stability and Morphology Development of Coherent Multilayers at Elevated Temperatures	1787
M. Bobeth, A. Ullrich and W. Pompe	
Strain-Induced Effects upon the Diffusion of Atoms in Solid Solutions during their Spinodal Decomposition	1793
V.A. Tatarenko	
The Mathematical Model for New-Phase Particle Growth in Refractory Alloys	1799
S.I. Sidorenko, A.A. Berezovsky, S. Berezovsky and I.P. Nikitina	
Teaching Diffusion, a Round Table	1807
J. Philibert	
Teaching Diffusion A WEB Page	1811
D. Monceau and J. Philibert	
Concluding Remarks	1815
Y.M. Mishin	