

Table of Contents

Preface

I. The Generalized Symmetry Approach to the Geometry and Physics of Surfaces in Crystals and Quasicrystals

V. Koptsik 5

II. The Generalized Symmetry Approach to the Geometry and Physics of Surfaces in Crystals and Quasicrystals

V.A. Koptsik 13

Simulating Equilibrium Grain Boundary Segregation

D.J. Srolovitz, H.Y. Wang and R. Najafabadi 23

Studies of Grain Boundary Structure in Pure Metals and Alloys by Combined X-Ray Diffraction and Computer Simulation

P.D. Bristowe, I. Majid, C. Counterman, D. Wang and R.W. Balluffi 25

HREM Study of Grain and Interphase Boundaries: Structural and Chemical Aspects

J. Pénisson 35

Grain Boundaries in Mazed Multicrystal Microstructures of Al

U. Dahmen and N. Thangarai 45

Coincidence Site Lattices in Quasicrystal Tilings

D.H. Warrington 57

Geometry of Asymmetrical Grain Boundaries

V. Paidar 61

Atomic Relaxation Modes in Grain Boundaries

K.L. Merkle and D. Wolf 65

Computer Simulation of Twinning Dislocations in Zirconium and Other H.C.P. Metals

A. Serra and D.J. Bacon 69

Symmetric (011)Tilt Grain Boundaries in Si and Ge: Interfacial Dislocation Concept

J. Putaux, J. Thibault, A. Jacques and A. George 73

The Atomic Structure of =3 {111}Twin Boundaries in Ordered Cu₃Au

P.H.H. Rongen, J. Pénisson, F.D. Tichelaar and F.W. Schapink 77

Theoretical Study of the Polar and Non-Polar Interfaces of Grain Boundaries in Compound Semiconductors

M. Kohyama, S. Kose and R. Yamamoto 81

Grain Boundary Transformations in Bi-Doped Copper

E.C. Urdaneta, D.E. Luzzi and C.J. McMahon 85

Elastic Field Associated to Grain Boundaries

E. Bouchaud and G. Saada 89

Thermodynamic Behaviour of Domain Walls in Ordered Alloys: An Experimental Comparison between First and Second Order Transitions

C. Ricolleau and A. Loiseau 93

High Resolution Transmission Electron Microscopy of a β'-Sialon-TiN Nanocomposite

C.M. Wang, F.L. Riley and A.D. Stalios 97

Relaxation Grain Boundary Processes

L.K. Fionova 101

Auger Electron Spectroscopy of Manganese Zinc Ferrites: Electron Beam Effect fo the Grain Boundaries

C. Akita, S. Sekiguchi, M. Fujimoto, H. Haneda and M. Tanaka 105

Chemical State Analysis of Grain Boundaries of Bi₂O₃-Doped ZnO Varistors

S.I. Tanaka, K. Takahashi, C. Akita, H. Haneda and M. Tanaka 109

Theoretical Study of Twin Boundary Structure and Twin Boundary Energy of Mo-Re Alloy

T. Shinoda, K. Masuda-Jindo, S. Takeuchi, Y. Mishima and T. Suzuki 113

Conduction Properties of Intergranular Phase in SrTiO₃ -Bi₂O₃ Capacitors

S. Shibagaki, K. Ito, C. Akita, M. Tanaka and H. Haneda 117

About the Structure, Morphology and Orientation Relationships of β'-Mg₂Si Precipitates in Al

T. Epicier, G. Guichon, D. Dafir and P. Merle 121

| | |
|---|-----|
| Structural Study of a New Aluminium-Rich Borocarbide Formed by Reaction at the B₄C/Al Interface | 125 |
| G. González, C. Esnouf and J.C. Viala | |
| Study of Interfaces in the Modulated α-Ni₇S₆ by Conventional and High Resolution Electron Microscopy | 129 |
| C.B. Lioutas and G. Van Tendeloo | |
| Twin-Corner Disclinations in YBa₂Cu₃O_{7-δ} | 133 |
| A.H. King and Y.M. Zhu | |
| Diffusion Effect of Dissociation of Grain-Boundary Structural Dislocations (GBSD) in Aluminium Bi-Crystals | 137 |
| I. Suliga, K. Przbylowicz and A. Siwek | |
| The Core Structures of Transformation Dislocations at TiAl/Ti₃Al Interfaces | 141 |
| J. Pénisson, M. Loubradou, C. Derder and R. Bonnet | |
| Dislocation Arrays in the (0-112)Twin of Magnesium as a Function of the Misorientation | 145 |
| S. Lay and G. Nouet | |
| Grain Boundary Dislocation Structures in Deformed Hexagonal Close-Packed Metals | 149 |
| T. Kehagias, P. Komninou, G.P. Dimitrakopoulos, E.K. Polychroniadis, J.G. Antonopoulos and T. Karakostas | |
| Effects of Nitrogen on Grain Boundary Fracture in Molybdenum | 153 |
| Y. Hiraoka, B.C. Edwards and B.L. Eyre | |
| Anisotropy of Grain Boundary Segregation Enthalpy in [100] Bicrystals of an Fe-Si Alloy | 157 |
| P. Lejček and S. Hofmann | |
| Atomic Scale Observations of Solute-Atom Segregation at Grain Boundaries in an Iron (Silicon) Alloy | 161 |
| B.W. Krakauer and D.N. Seidman | |
| Monte Carlo Simulations of Solute-Atom Segregation at [001] Symmetrical Twist Boundaries in the Au-Pt System | 165 |
| D. Udler and D.N. Seidman | |
| Monte Carlo Simulations of Solute-Atom Segregation at [001] Symmetrical Twist Boundaries in the Ni-Pt System | 169 |
| D. Udler and D.N. Seidman | |
| Self Supporting Ceramic Films for Grain Boundary Characterization | 173 |
| W.D. Kaplan and D.G. Brandon | |
| Grain Boundary Properties in SrTiO₃ Ceramics | 177 |
| K. Ito, S. Shibagaki, H. Haneda, M. Tanaka and S. Shirasaki | |
| Segregation of Secondary Phase Particles near Dislocations in NaCl:Ni (2+) Crystals | 181 |
| M. Suszynska | |
| Interfacial Segregation in Ultra-Low Carbon Steels | 185 |
| D. Alaoua, A. Larere, S. Lartigue-Korinek and L. Priester | |
| Boron Grain Boundary Segregation in Cobalt Disilicide | 189 |
| A. Larere, P. Gas, T. Barge, C. Haut, A. Malchère and T.T. Nguyen | |
| Intergranular Segregation and Grain Boundary Crystallography in Al₂O₃ | 193 |
| W. Swiatnicki, S. Lartigue-Korinek, A. Dubon and J.Y. Laval | |
| Grain Boundary Migration with Solute Segregation under Electron Irradiation | 197 |
| H. Takahashi and T. Kato | |
| Cooling Induced Non-Equilibrium Segregation of Impurity Concentration of Phosphorus and Tin to Grain Boundaries in an Iron-3% Nickel Alloy | 201 |
| V. Vorlíček, P. Doig and P.E.J. Flewitt | |
| Silver Grain Boundary Segregation in Copper | 205 |
| M. Menyhard | |
| Effect of Oxygen on Segregation and Chemical Activity of Titanium in Ag-Cu Brazing Alloys | 209 |
| J.K. Kivilahti and F.J.J. van Loo | |
| Tight-Binding Study of Twist Boundaries in Silicon | 213 |
| M. Kohyama, S. Kose and R. Yamamoto | |
| Theoretical Study of the Atomic and Electric Structure of the {113} Planar Interstitial Defects in Silicon | 217 |
| M. Kohyama and S. Takeda | |

| | |
|--|-----|
| Geometric and Energetic Considerations for Grain Boundaries of Finite Extent | 221 |
| A.H. King | |
| A New Semiempirical Method for Calculation of Segregation and Interfacial Energies of Metallic Systems | 225 |
| G. Bozzolo and J. Ferrante | |
| Grain Boundary Structure in NiO, Temperature Evolution: A Molecular Dynamics Study | 229 |
| M. Meyer and C. Waldburger | |
| A Modified Lennard-Jones Potential for the Relaxation of a Cu-AlN Interface | 233 |
| J. Du, J.P. Gaspard and S. Hagège | |
| A Quasiperiodic Twin Description of General Grain Boundaries in Hexagonal Materials | 237 |
| S. Hagège | |
| Energy Calculation of the $\Sigma = 5<001>$ Twist Grain Boundary in Silicon and Germanium | 241 |
| N. Ralantoson, F. Hairie, A. Hairie, G. Nouet and E. Paumier | |
| Energy Calculation of the $\Sigma = 9<001>$ Tilt Grain Boundary in Silicon Using Keating Potential and Tight-Binding Model | 245 |
| M. Cheikh, A. Hairie, F. Hairie, G. Nouet and E. Paumier | |
| The Temperature Dependence of Point Defect Cluster Formation and Binding Energies in Noble Metals Twist Grain Boundaries | 249 |
| J.-. Cayphas and M. Hou | |
| Free Energy of the $\Sigma = 11 (332)$ Tilt Grain Boundary in Silicon | 253 |
| S. Mourelatos, N. Ralantoson, P. Delavignette, A. Hairie, F. Hairie, M. Hou, E. Paumier, J. Thibault and A.P. Sutton | |
| A Software Package for Grain Boundary Characterization by TEM | 257 |
| G.M. Provataris, E.K. Polychroniadis, E.G. Doni, P. Komninou, T. Kehagias, T. Karakostas and P. Delavignette | |
| Analysis of High Multiplicity CSL's by Means of the Approximate CSL | 261 |
| E.G. Doni | |
| The Constrained Coincident Site Lattice Model: Status, Implications and Prospects | 265 |
| A.H. King | |
| Remarks on Coincidence Orientations of Tetragonal and Orthorhombic Lattices | 269 |
| H. Grimmer | |
| Graphical Representation on a Macintosh Computer of the Bicrystallography of General Interfaces | 273 |
| F. Guillet and S. Hagège | |
| Relationship between Grain Boundary Misorientation Spectrum and Orientation Distribution Function in F.C.C. Polycrystals | 277 |
| A.P. Zhilyaev, A.I. Pshenichnyuk, V.Y. Gertsman and R. Valiev | |
| Tilted Epitaxial Films | 281 |
| P.J. Dugdale, R.C. Pond and R. Beanland | |
| Relationship between Grain Boundary Energies and Crystal Orientations of Boundary Planes in Aluminum | 285 |
| A. Otsuki, H. Yato and I. Kinjyo | |
| Reaction Products at the Interface between Si_3N_4 and Ni-Cr Alloys | 289 |
| A.A. Kodentsov, J.H. Gülpén, R.C.J. Schiepers, J.K. Kivilahti and F.J.J. van Loo | |
| Toughening of Brittle Materials by Grain Boundary Design and Control | 295 |
| T. Watanabe | |
| Grain Boundaries: Phase Transitions and Critical Phenomena | 305 |
| E. Rabkin, L.S. Shvindlerman, B.B. Straumal and W. Gust | |
| Diffusion Induced Grain Boundary Migration and Recrystallization in the $\text{Ni}_3\text{Al}(\text{Cu})$ System | 317 |
| C.Y. Ma, W. Gust, R.A. Fournelle and B. Predel | |
| High-Temperature Diffusion-Induced Grain Boundary Migration in an Fe-5 AT.% Al Bicrystal during Zinc Diffusion | 321 |
| E. Rabkin, B.B. Straumal, V.G. Sursaeva, L.S. Shvindlerman, R.A. Fournelle and W. Gust | |
| Besides Ductility - Grain Boundary Mobility in $\text{Ni}_3\text{Al}+\text{B}$ | 325 |
| G. Gottstein | |
| Temperature Dependence and Anisotropy of Grain Boundary Self-Siffusion in Oriented Silver Bicrystals | 329 |
| J. Sommer, C. Herzig, W. Gust and T. Muschik | |

| | |
|---|-----|
| Velocities of Glissile D.S.C. Dislocations in A $\Sigma = 9$ (-1 2-2)Grain Boundary in Silicon | 333 |
| M. Iwami, A. Jacques, H.A. Benhorma, A. George and X. Bailliu | |
| Phonons and Local Elastic Properties of Grain Boundaries | 337 |
| G.J. Wang, V. Vitek, I. Alber, J.L. Bassani and G. Tichy | |
| Triple Junctions in Crystalline Solids | 343 |
| M.A. Fortes | |
| Cavity Nucleation and Growth in Ferritic and Austenitic Steel Bicrystals | 347 |
| R. Lombard and H. Vehoff | |
| Stress-Voiding and Electromigration Failures in Narrow Metal Interconnects | 351 |
| C.S. Nichols and D.A. Smith | |
| TEM Investigations of Grain Boundary Fracture and its Interaction with Grain Boundary Structure | 355 |
| A.H. King and H. Zhang | |
| Grain Boundary Corrosion of Al_2O_3 and $\text{Y}_3\text{Al}_5\text{O}_{12}$ Ceramics by Molten Sodium | 359 |
| H. Haneda, H. Toshima, Y. Miyazawa, T. Mitsuhashi, E. Yoshida and S. Kano | |
| Corrosion Behaviour of Symmetrical Tilt Boundaries in Cu and α Cu-Al Alloy | 363 |
| T. Mimaki, M. Yamashita, S. Hashimoto and S. Miura | |
| Amide-Electrolyte Molten Mixtures: Microheterogeneous Systems | 367 |
| G. Berchiesi, F. Farhat and G. Vitali | |
| Modeling of Solid/Solid Eutectic Interactions; Application to the Zircaloy/Inconel and Zircaloy/Stainless Steel Systems | 371 |
| E.A. García, A. Denis and R. Piotrkowski | |
| Phase Transformations in Long-Term Aged Ni-Cr-Fe Alloys | 375 |
| A. Marucco and E. Signorelli | |
| Influence of Experimental Procedure and Alloy's Nature on the Oxygen Diffusion into a Nickel Base Alloy (Astroloy) | 379 |
| C. Mons, G. Moulin, L. Priester, G. Rautureau, E. Beauprez, J. Gosset and P. Trocellier | |
| A Theory for Diffusion Induced Grain Boundary Migration Based on Vacancy Diffusion | 383 |
| R.A. Fournelle | |
| Driving Force for Pure Step Movement at Grain Boundaries due to Vacancy Supersaturation and Anisotropy | 387 |
| A. Katsman, L. Levin and S.F. Dirlfeld | |
| Grain Boundary Zinc Penetration in Fe-Si Alloys: Premelting Phase Transition on the Grain Boundaries | 391 |
| B.B. Straumal, E. Rabkin, L.S. Shvindlerman and W. Gust | |
| Auto and Hetero-Diffusion along Grain and Interphase Boundaries in α-Zr and Zr-2.5wt%NB | 395 |
| F. Dymont, M.J. Iribarren, K. Vieregge and C. Herzig | |
| Microstructural Investigation of Grain Boundary Diffusion and Recrystallization in W-Cu Composites | 399 |
| J.S. Lee, T.H. Kim and K.H. Lee | |
| Oxygen Grain Boundary Diffusion in Alumina, Impurity Effects | 403 |
| D. Prot, M. Miloche and C.J.A. Monty | |
| The Influence of Interfacial Structure on the Diffusion of Ag along Ag-Cu Interphase Boundaries | 407 |
| T. Muschik, J. Sommer, C. Herzig and W. Gust | |
| Oxygen Self-Diffusion in Y_2O_3 Doped α Alumina | 411 |
| M. Le Gall, B. Lesage, N. Brun, A.M. Huntz, M. Miloche and C.J.A. Monty | |
| Grain Boundaries in Deposited Aluminum Thin Films | 415 |
| L.K. Fionova, O.V. Kononenko and V.N. Matveev | |
| Effect of Solute Atoms on Rate of Boundary Migration for Body-Centered Cubic Alloys | 419 |
| S. Nakashima, K. Takashima, J. Harase, K. Takimoto and T. Kamijo | |
| The Effect of Nuclei Texture on the Geometry of Grains and Dis-Orientation of Grain Boundaries in Recrystallized Polycrystals | 423 |
| K.J. Kurzydlowski | |
| Microstructural Aspects of Grain Growth Induced by the Dopants in UO_2 Sintered Pellets | 427 |
| D. Diaconu, D. Ohai and V. Balan | |

| | |
|---|-----|
| Nucleation and Grain Growth in Silicon Films Deposited by Thermal Decomposition of Disilane | 431 |
| A.T. Voutsas and M.K. Hatalis | |
| Distribution of Misorientation and Grain Boundary Statistics in Materials Prone to Annealing Twinning | 435 |
| V.Y. Gertsman | |
| Phase Changes at Surfaces of Multilayer Systems on Silicon | 439 |
| S.P. Kostenko and G.D. Tishchenko | |
| Precipitate-Free Zones at the Grain Boundary of a Bicrystal of the Nickel-Base Superalloy Nimonic PE16 | 443 |
| H. Rösner, K. Neuking, M. Kolbe and E. Nembach | |
| Reorientation Processes and Phase Transitions Occuring at Electrified Interfaces | 447 |
| P. Nikitas and A. Papa-Louisi | |
| Phase Transitions and Interfacial Rearrangements at the Surface Film of Adsorbed Hexadecyl-Tributylphosphonium Bromide Studied in a Capacitance-Potential-Time 3-Dimensional Space | 451 |
| A. Anastopoulos and N. Papadopoulos | |
| Intergranular Polymeric Boundaries in Cork Aggregate Materials | 455 |
| B.S. Almeida, A.C. Fernandes, M.E. Rosa and J.C. Bordado | |
| Pressure Effect on Grain Boundary Energy and Kinetics | 459 |
| W. Łojkowski, J. Swiderski, D.A. Molodov, E. Rabkin, L.S. Shvindlerman, Y. Minamino and J. Kwiecinski | |
| Characterization of the Interface Ta/GaAs in Schottky Barrier Structures Prepared by Low Energy RF Sputtering with X-Ray Photoemission, TEM and Optical Transmittance Measurements | 463 |
| P. Gladkov, K. Varblanska, T. Marinova, V. Krastev and J. Stoemenos | |
| In Situ High-Resolution Transmission Electron Microscopy of the Amorphous to Crystalline Phase Transformation in Pd₈₀Si₂₀ Alloy | 467 |
| J.M. Howe | |
| Application of Numerical Methods to the Analysis of Growth Processes in Diffusion Layers | 471 |
| S. Gut | |
| Grain Boundary Relaxations in Aluminium Studied in Low Frequency Mechanical Spectroscopy | 475 |
| A. Rivière and J. Woigard | |
| High Temperature Behaviour of Yttria-Stabilized Tetragonal Zirconia and Silicon Nitride Polycrystals Studied by Mechanical Spectroscopy | 479 |
| A. Lakki and R. Schaller | |
| Observation of Slip Lines in a Molybdenum Bicrystal after Plastic Deformation at Room Temperature | 483 |
| Y. Hiraoka and E. Sukedai | |
| HREM Study of Precipitates Shear in a Ni-Co Based Superalloy | 487 |
| L. Guetaz and J. Pénisson | |
| Influence of the Dissociation into Shockley Partials on the Dislocation Transmission across [011] Tilt Grain Boundaries in Elemental Semiconductors | 491 |
| H.M. Michaud, X. Baillin, A. Jacques, H.A. Benhorma and A. George | |
| The Effects of Stoichiometry on the Mechanical Behavior of Grain Boundaries in NiAl and FeAl | 495 |
| I. Baker, P. Nagpal and F. Liu | |
| Structure and Intergranular Corrosion Behaviour of Stainless Steel Enriched in Mo by Electron Beam Processing | 499 |
| C. Vignaud, M. Keddam, F. Pillier, S. Tosto and F. Nenci | |
| Correlation between the Electrochemical Behavior and the Surface Energy of Single Nickel Crystals | 503 |
| F. Berthier, R. Dessieux, B. Le Gorrec and L. Priester | |
| Phase Transformation in Molybdenum Surface Implanted Stainless Steel: Microstructural Corrosion Characteristics | 507 |
| L. Beaunier, M. Keddam, F. Pillier and P. Beaunier | |
| Dynamical Characteristics of an Iron Electrode in Sulphuric Acid Solutions due to the Variation of the Chlorides Concentration in the Solid/Liquid Interphase | 511 |
| D. Sazou, M. Pagitsas and C. Georgolios | |

| | |
|---|-----|
| The Corrosion/Passivation of Iron in Sulphuric Acid Solutions: Dynamical Response of the Quasiperiodically Forced Franck-Fitzhugh Model | 515 |
| M. Pagitsas, A. Karantonis and D. Sazou | |
| High Temperature Oxidation of Silicon Nitride Intergranular Phases | 519 |
| M. O'Reilly, R.J. Fordham, J.F. Norton, J. Corish and E. Bullock | |
| Dynamic Embrittlement due to Surface Segregation | 523 |
| D. Bika and C.J. McMahon | |
| Cracking of Misfit Dislocations in Thin Epitaxial Films | 527 |
| A. Milchev | |
| Twinning and Detwinning in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Single Crystals | 531 |
| D. Favrot-Colson, M. Déchamps and A. Revcolevschi | |
| Local Elastic Hypersound Characterization of Single Domain Areas of Single Crystalline HTSC by Mandelstamm-Brillouin Spectroscopy | 535 |
| V.V. Aleksandrov, T.S. Velichkina and I.A. Yakovlev | |
| Cavity Growth in Superplastic Materials: The Significance of Fine Grain and Nanocrystalline Structures | 539 |
| Y. Ma and T.G. Langdon | |
| Dynamic Observations of Grain Boundaries and Dislocations in Ice | 543 |
| I. Baker, F. Liu and M. Dudley | |
| Comments on Transformational Superplasticity: An Example from a Non-Metal, Ammonium Nitrate | 547 |
| A. Meike and A.C. McLaren | |
| Interfaces and the Growth of Thin Oxide Films | 555 |
| C.B. Carter | |
| Planar Defects in $\text{GaSb}/(001)$ GaAs Heterostructure | 559 |
| A. Rocher and E.H. Atmani | |
| A Study of α / β Boundaries in a Zr-2.5wt%Nb Alloy | 563 |
| W.Z. Zhang and G.R. Purdy | |
| Interphases between Si-Based Ceramics and Metals | 567 |
| K. Suganuma, P. Moretto and S.D. Peteves | |
| Precipitation of Carbides in a Zr-2.5% Nb Alloy | 571 |
| R. Piotrkowski and G. Vigna | |
| Determination of the Chemical Valence of Atoms at a Heterophase Interface by X-Ray Diffraction Measurements of Crystal Truncation Rod Intensity at an Atomic Absorption Edge | 575 |
| E.D. Specht and F.J. Walker | |
| Structural and Electrical Properties of the Ga 0.68 in 0.32 P / GaAs Heterojunction Grown by Mombe | 579 |
| N. Frangis, A. Ginoudi and E.C. Paloura | |
| Grain Boundary Segregation in Transition Metal-Metalloid Systems | 583 |
| B.S. Bokstein, E.E. Glickman, G. Nikolsky and A.N. Smirnov | |
| Thermal Conductivity of Thin Films and Polycrystals | 587 |
| J.C. Lambropoulos | |
| Copper Precipitation at the Silicon/Silicon Dioxide Interface: Microstructure and Electrical Properties | 591 |
| A. Correia, D. Balltaud and J.L. Maurice | |
| Near Surface Interface Studies Using Glancing Angle X-Ray Techniques: Application to Corrosion of Alloys and Ion Beam Mixing of Multilayers | 595 |
| P.N. Gibson, T.A. Crabb, E. McAlpine and R. Falcone | |
| Analysis of $\text{SiC}-\text{SiO}_2$ Interfaces by TEM | 599 |
| F. Gourbilleau and G. Nouet | |
| Growth of Diamond Film on SiC and Cubic BN | 603 |
| J. Echigoya, T. Miyashita and K. Hisamune | |
| Factors Affecting Interface and Surface Quality of Thin Epitaxial TlBiSe_2 Films | 607 |
| C.L. Mitsas and E.K. Polychroniadis | |
| Thin Film Structures for Magneto-Optical Information Recording | 611 |
| A. Titov and L.K. Fionova | |

| | |
|--|-----|
| Growth and Investigation of Ni/Ti Multilayers | 615 |
| H. Grimmer, P. Böni, O. Elsenhans, H.P. Friedli, I.S. Anderson, K. Leifer and P.A. Buffat | |
| Linear Optical Properties of the Strained Si₃/Ge₄ and Si₆/Ge₈ Superlattices | 619 |
| H.M. Polatoglou, C. Tserbak, B. Vlachoudis and G. Theodorou | |
| Equilibrium Properties of the Cu-Au Alloy System at T=0 K | 623 |
| H.M. Polatoglou, K. Magoutis and G.L. Bleris | |
| Structure of a Ni-Au Multilayer: A HREM Study | 627 |
| J. Thibault, P. Bayle, A. Marty, J.P. Eymery and B. Gilles | |
| TEM Study of Inversion Antiphase Domain Boundaries on GaAs/Si Interphase Grown by MBE | 631 |
| J. Stoemenos, P. Komninou, T. Karakostas, A. Georgakilas and A. Christou | |
| Compositional Gradients at the Phase-Boundary between the γ'-Precipitates and the γ' - Matrix in the γ' - Hardened Nickel-Base Superalloy Nimonic 105 | 635 |
| E. Nembach and K. Trinckauf | |
| Atomic Scale Studies of the Chemistry of the Cu/MgO {111} Heterophase Interface | 639 |
| H. Jang, D.N. Seidman and K.L. Merkle | |
| Ostwald Ripening of Silver in Lead-Borosilicate Glass | 643 |
| K. Yata and T. Tamaguchi | |
| The Sodium-Aluminium Interface | 647 |
| A. Horsewell, E. Johnson and K.K. Bourdelle | |
| HREM Study of Copper Precipitation in a Σ=25 Silicon Tilt Grain Boundary | 651 |
| M. Elkajbaji and J. Thibault | |
| Study of High Resolution Electron Microscopy (HREM) of the Crystallization of a Cordierite Obtained by an Atomization Process | 655 |
| L. El Chahal, J.L. Hutchison, J. Werckmann, G. Ehret and E. Bres | |
| Precipitation of Copper Silicide at Grain Boundary in Silicon | 659 |
| R. Abdelaoui, G. Nouet and G. Allais | |
| Anti-Corrosion Treatment of a Carbon Steel Using Sodium Silicate to Deposit a Silica Film. Analysis of Films by Photo-Electron Spectroscopy (ESCA) | 663 |
| B. Le Dinh Bao and I. Ignatiadis | |
| TEM Investigation of Transition Phases Precipitation in ZA Alloys after Isothermal Aging at 250°C and Subsequent Creep at High Temperature | 667 |
| J. Lecomte-Beckers, L. Terziev and J. Wegria | |
| High Temperature Damping in Metal Matrix Composites | 671 |
| A. Rivière, L. Fadel and J. Woigard | |
| HRTEM Study of a Faceted ZrB-ZrB₂ Interface | 675 |
| Y. Champion, S.H. Cho and S. Hagège | |
| Wettability and Interfacial Chemistry of High Temperature Brazing Alloys on Alumina | 679 |
| C. Wan, P. Kritsalis and N. Eustathopoulos | |
| Wettability and Reactivity in the Aluminium/Carbon System | 683 |
| S. Kalogeropoulou, K. Landry and N. Eustathopoulos | |
| Adsorption of Li on WS₂(0001) at Low Temperature | 687 |
| M. Kamaratos, C.A. Papageorgopoulos, A. Schellenberger, E. Holub-Krappe, C. Pettenkofer and W. Jaegermann | |
| Work of Adhesion in Zirconia-Liquid Metal Systems | 691 |
| D. Sotiropoulou and P. Nikolopoulos | |
| A Method for Estimation of Interfacial Energies in Ceramic-Liquid Metal and Alloy Systems | 695 |
| S. Agathopoulos, A. Tsoga and P. Nikolopoulos | |
| Metal-Ceramic Interfaces in Internally Reduced Mixed Oxides | 699 |
| A. Peyrot, M. Backhaus-Ricoult and S. Hagège | |
| HRTEM Analysis of a Cu-AlN Interface | 703 |
| J. Du, A. Traverse and S. Hagège | |
| Interphase Structure in Refractory Ohmic Contacts Obtained by Electroless Deposition onto III-V Semiconductors | 707 |
| G. Stremsoerfer, Y. Wang-Li and J.R. Martin | |
| Reliability of Ni/Al₂O₃ Junctions Made by Solid State Bonding | 711 |
| P. Lourdin and D. Juvé | |

| | |
|---|-----|
| Thermodynamics of Metal-Oxide Interfacial Bond: The Role of Oxygen Activity | 715 |
| D. Chatain, V. Ghetta, F. Chabert and J. Fouletier | |
| Metal Precipitation and the Electronic Properties of Twinned Boundaries in Silicon | 721 |
| A. Broniatowski | |
| Structure and Electrical Behaviour of Grain Boundaries Allowing Large Critical Currents in Ceramic Superconductors | |
| J.Y. Laval, M. Drouet, W. Swiatnicki, C. Cabanel, C. Delamarre, I. Monot and G. Desgardin | 733 |
| Electrically Active ZnO Boundaries | |
| K. Baek, A. Broniatowski and H.L. Tuller | 737 |
| Interfacial Energy State of Grain Boundaries in Some Electronic Ceramics | |
| M. Tanaka, H. Haneda, S. Hishita, A. Watanabe, C. Akita, N. Ohashi and S.I. Tanaka | 741 |
| Studies of Microstructure/Critical Current Density Relationships for Grain Boundaries in YBa₂Cu₃O_{7-δ} Bicrystals | |
| S.E. Babcock, X. Cai, Y.F. Gao, D.L. Kaiser, D.C. Larbalestier, K.L. Merkle, D.H. Shin, H. Zhang and N. Zhang | 745 |
| Grain Boundary Effects on the Free Carrier Adsorption of TlBiSe₂ Thin Films | |
| C.L. Mitsas and D.I. Siapkas | 749 |
| Potential-Current Oscillations of Titanium Alloy Exposed to 1N NaBr Solution under Applied Potential Conditions | |
| Y. Shterenberg, H. Straze and D. Itzhak | 753 |
| Electronic Phenomena at the Interphase of an Organic Insulator-Insulating Oil Combination, during High Voltage Pulse Applications | |
| A.X. Moronis, P.D. Bourkas, C.T. Dervos and C.A. Kagarakis | 757 |
| Partial Discharges at a Solid Polymeric Insulator-Insulating Oil Interface, during the Application of High DC Voltages | |
| A.X. Moronis, P.G. Halaris, P.D. Bourkas, C.T. Dervos and C.A. Kagarakis | 761 |
| A Microscopic Model for Phase Transformations of Small Systems at Electrified Interfaces | |
| P. Nikitas | 765 |
| Study of the Influence of Additives on the Grain Boundary Electrical Behaviour of Ferrites of the Co_xFe_{3-x}O₄ System | |
| A.J.M. Ferreira, C.S. Furtado and J.M. Perdigão | 769 |
| Grain Boundaries and Interfaces in Electroceramics for Solid Oxide Fuel Cells | |
| C. Clausen, A. Horsewell, J.B. Bilde-Sørensen and M. Mogensen | 773 |
| Local Electrical Activity of Al Doped Tilt-Boundaries Silicon Bicrystals by STEBIC | |
| T. Benabbas, J.Y. Laval and M. Leliboux | 777 |
| Microstructure of Electrically Active Twin Boundaries in Silicon | |
| J.L. Maurice and J.Y. Laval | 781 |
| Electrical Properties of High Temperature Superconductors | |
| A.L. Rodrigues | 785 |
| Non Linear Conductivity Phenomena on Stationary Metal Contacts | |
| C.G. Karagiannopoulos, P.D. Bourkas, C.T. Dervos and C.A. Kagarakis | 789 |
| Reactions during Heat Treatment at Interface between Y₂O₃-Stabilized ZrO₂ and (La,Sr)MnO₃ | |
| C. Clausen, A. Horsewell, J.B. Bilde-Sørensen and C. Bagger | 793 |
| Grain Boundary Characteristics in Polysilicon | |
| L.K. Fionova, L.E. Polyak, R.K. Islamgaliev, R. Valiev, V. Gueorguiev, R. Paneva and L. Popova | 797 |
| Thermodynamic Properties of Nanocrystalline Metals | |
| H.J. Fecht | 803 |
| Information on Grain Boundary Structure in Nanocrystalline Pd and Cr from Diffraction Studies | |
| J.A. Eastman, M.R. Fitzsimmons, A.C. Lawson, R.A. Robinson, L.J. Thompson and J. Satti | 813 |
| Mechanical Properties of Nanostructured Materials and Relation to Microstructure | |
| H. Hahn | 823 |
| Stability of Nanocrystalline Materials | |
| R. Birringer | 824 |
| Modeling of Interfaces of Nanostructured Materials | |
| T. Tsakalakos, G.C. Joo and S.P. Chen | 825 |

| | |
|--|-----|
| Modeling of Si₃N₄ Thin Layers Deposition out of Gaseous Phase | |
| S.P. Kostenko, Y.A. Potchkin and G.D. Tishchenko | 829 |
| Transformation Interfaces and Precipitation in Alloy Steels | |
| F.A. Khalid and D.V. Edmonds | 833 |
| IIB92: Concluding Remarks | |
| J. Thibault | 837 |