

Table of Contents

Preface

Mechanical Properties of Metastable Alloys with Novel Atomic Configurations Obtained by Use of Stabilization of Supercooled Liquid

A. Inoue, M.J. Lloret, H. Kimura and A. Takeuchi 3

Mechanical Property - Microstructure Relations in Iron-Carbon Alloys from 1.0 to 5.2% Carbon

O.D. Sherby, M. Carsí, W.J. Kim, D.R. Lesueur, O. Ruano, C.K. Syn, E.M. Taleff and J. Wadsworth 11

Microstructure and Mechanical Property of Ultra-Fine (Ferrite + Cementite) Duplex Structure in High Carbon Steel

T. Maki and T. Furuhara 19

Hybrid Modelling Methodology Applied to Microstructural Evolution during Hot Deformation of Aluminium Alloys

C.M. Sellars, M.F. Abbot, Q. Zhu and D.A. Linkens 27

Advances in the Kinetic Theory of Carbide Precipitation

H.K.D.H. Bhadeshia 35

Control of Microstructure in TRIP Steels by Niobium

W. Bleck, A. Frehn, E. Kechagias, J. Ohlert and K. Hulka 43

New Challenges in the Thermomechanical Processing of HSLA Steels

A.J. DeArdo 49

The Critical Strain for Dynamic Recrystallization in Rolling Mills

J.J. Jonas and E.I. Poliak 57

Strength and Fracture of Aluminium Alloys

T. Kobayashi 67

Properties and Microstructures of a High-Performance Thermoelectric Intermetallic Compound — β -Zn₄Sb₃

L.T. Zhang, M. Tsutsui, K. Ito, H. Inui and M. Yamaguchi 75

Recrystallization Texture of (123)[-6-3 4] Copper Single Crystal Cold Rolled up to 99.5%

D.N. Lee and H.J. Shin 83

Recent Developments in the Design and Processing of Gamma-Based Titanium Aluminide Alloys

F. Appel 91

Texture, Microstructure and Forming of Aluminium Alloy Sheets

F. Barlat, J. Grácio, J.W. Yoon and E.F. Rauch 99

Alloy Development and Associated Dimensional Changes of Aluminium Alloys during Liquid Phase Sintering

J.M. Martín and F. Castro 107

New Material Systems and Manufacturing Techniques for High Strength Sintered Precision Parts

H. Danninger 115

Functionally Graded Materials Produced with High Power Lasers

J.T.M. de Hosson and V. Ocelik 123

Solid State Joining as a Method for Producing Large Scale Billets from Microcrystalline Materials

O.A. Kaibyshev 131

Multifunctional Coating Design for High-Temperature Materials

W.Y. Lee, H.L. Li and Y.-. Su 137

Some Recent Work on Alloy and Process Development of Ti and TiAl-Based Alloys

X.H. Wu, D. Hu, J. Mei and M.H. Loretto 145

New Development in Magnesium Technology for Light Weight Structures in Transportation Industries

J. Göken, J. Bohlen, N. Hort, D. Letzig and K.U. Kainer 153

High Nitrogen Steel and Interstitial Alloying

J. Foct, C. Domain and C.S. Becquart 161

Composites on the Way to Structural Automotive Applications	171
H.E. Friedrich, J. Kopp and J. Stieg	
Third-Generation Gene-Activating Biomaterials	179
L.L. Hench, A.R. Boccaccini, R.M. Day and S.M. Gabe	
Thermomechanical Control in Aluminium Sheet Production	185
J. Hirsch	
Life Cycle Assessment of Coating Treatments for Automotive Magnesium Parts	195
E. Angelini, B. De Benedetti, S. Grassini and M. Marino	
The Developing Prospect of Air-Cooled Bainitic Steels	201
H.S. Fang, Q. Li, B.Z. Bai, Z.G. Yang, D.Y. Liu and F.B. Yang	
Pt and Hf Additions to NiAl Bond Coats and their Effect on the Lifetime of Thermal Barrier Coatings	209
J.A. Nesbitt, B. Gleeson, D.J. Sordelet and C.A. Barrett	
Limit of Dislocation Density and Ultra-Grain-Refining on Severe Deformation in Iron	215
S. Takaki	
Mechanical Properties of IF Steel Produced by Thin Slab Casting and Direct Hot Rolling Process	223
H. Takechi, S. Hashimoto and M. Imagumbai	
Friction Stir Welding - Recent Developments	229
W.M. Thomas	
Recent Developments of SPD Processing for Fabrication of Bulk Nanostructured Materials	237
R. Valiev	
Phase Formation Sequence Map for Al-Ni-Gd Glass-Forming System Devitrified at 250°C	245
M.C. Gao and G.J. Shiflet	
Ti-Ni-Based Shape Memory Alloys as Smart Materials	251
K. Otsuka, Y. Xu and X.B. Ren	
Creep Data Prediction for Aluminium Airframe Alloys	261
B. Wilshire and H. Burt	
Forging Studies with Severe Plastic Deformation Processed Aluminum Alloy 6061	267
R. Srinivasan and P.K. Chaudhury	
An EBSD Study of Sub-Grain Structure Development in Hot Deformed Al-1%Mn Crystals	273
J. Glez and J.H. Driver	
The Characterization of the Plastic Potential of Aluminum Alloys Using Internal Variables of Strain Rate Sensitivity, Mean Slip Distance and Mean Slip Velocity	279
S. Saimoto	
Effects of Strain Rate on Deformation Behavior of A6061-T6 Aluminum Alloy	285
T. Masuda, T. Kobayashi, L. Wang and H. Toda	
The Interaction between Precipitation and Recrystallization during Annealing of Cold Rolled AA6111	291
J. Go, W.J. Poole, M. Militzer and M.A. Wells	
Removal of Porosity in Cast Aluminium Alloys by Equal Channel Angular Extrusion	297
P.W.J. McKenzie, R. Lapovok, P. Wells and K. Raviprasad	
Development of Properties during Secondary Ageing of Aluminium Alloys	303
R.N. Lumley, I.J. Polmear and A.J. Morton	
The Strengthening and Microstructure of Precipitation Hardened Al-Li-Cu Alloys	309
J.M. Fragomeni and R. Wheeler	
Ultrasonic Welding of Aluminum-Magnesium Alloy	315
M. Hiraishi and T. Watanabe	
Temperature Effect on Microstructure Development in 7475 Aluminum Alloy during ECAP	321
A. Goloborodko, O. Situdikov, T. Sakai, H. Miura and R. Kaibyshev	
Improved Material Properties for Cast Aluminium Alloys: From the Processes to Life Prediction Modelling	327
I. Guillot, D. Massinon, B. Barlas and D. Ovono-Ovono	
Phase Separation Structure Near the Surface in Al-Ag Binary Alloys	333
H. Okuda, T. Yoshihara and S. Ochiai	
The Effect of Alloying Elements on the Microstructure and Mechanical Properties of Al-12Si Cast Alloys	339
Y.H. Cho, Y. Im, S. Kwon and H.C. Lee	

Environmental Embrittlement of Al-Zn-Mg-Cu Alloys with Cr or Zr	345
S. Satoh and M. Kanno	
Computer-Aided Optimization of Aluminum Alloys for Airframe Applications	351
C. Sigli, R. Dif, B. Commet and T. Warner	
Precipitation Sequence of Al-Mg-Si Alloys	357
S. Ikeno and K. Matsuda	
Microstructure and Plastic Anisotropy in Rolled Al-Mg Alloys	363
E.S. Eardley, A. Soulet, S.A. Court, J.F. Humphreys and P.S. Bate	
Anomalous Tensile Stability for an Aluminum Alloy at High Temperatures and High Strain Rates Interpreted from a Dislocation Dynamic View Point	369
K. Okazaki and T. Hasegawa	
Effect of Addition of Cu on Structures of Metastable Phases in Al-Mg-Si Alloys	375
K. Matsuda, T. Kawabata, Y. Uetani and S. Ikeno	
Grain Refinement in As-Cast 7475 Al Alloy under Hot Multiaxial Deformation	381
O. Sittikov, A. Goloborodko, T. Sakai, H. Miura and R. Kaibyshev	
The Obtention of Homogeneous Microstructures in Al-Sn-Based Tribological Alloys	387
R. Schouwenaars, V.H. Jacobo, S.M. Cerrud and A. Ortiz	
Damage Behaviours of Various Coarse Al-Fe-Si Particles in Model Wrought Alloys	393
H. Toda and T. Kobayashi	
Lattice Rotations at Large Second-Phase Particles in Polycrystalline Aluminium	399
A.P. Clarke, J.F. Humphreys and P.S. Bate	
Quantitative Analysis of Structure-Strength Relation of Commercial Purity Aluminium Deformed by Accumulative Roll Bonding and Annealed at Low Temperature	405
R. Ueji, X. Huang, N. Hansen, N. Tsuji and Y. Minamino	
Development of High Damping Aluminum Alloys and Composites Using Rapidly Solidified Powder Metallurgy Process	411
P.Y. Li, H.J. Yu, S.L. Dai, D.B. Liu, S.C. Chai and Y.R. Li	
Processing and Characterization of Porous Aluminum	417
C.E. Wen, M. Mabuchi, Y. Yamada, K. Shimojima, Y. Chino, H. Hosokawa and T. Asahina	
Precipitation Hardenable Al-Mg-Cu Alloys: Mechanical Properties and Hardening Mechanisms	423
B. Verlinden and A.M. Zahra	
Microstructures and Workability of Spray-Formed and Cast AZ91 Mg Alloys	429
C.Y. Chen and C.Y.A. Tsao	
Quenching and Cold-Work Residual Stresses in Aluminum Hand forgings: Contour Method Measurement and FEM Prediction	435
M.B. Prime, M.A. Newborn and J.A. Balog	
Compressive Behavior and Energy Absorption of Constructed Cellular Aluminum	441
Y. Yamada, C.E. Wen, Y. Chino, K. Shimojima, H. Hosokawa, M. Mabuchi and T. Asahina	
Effect of the Homogenisation Conditions on the Extrudability and High Temperature Fracture Resistance of AA6063 Aluminium Alloy	447
D. Lassance, J. Dille, J.L. Delplancke, T. Pardoën, L. Ryelandt and F. Delannay	
Work Hardening in Metals: Microscopic and Macroscopic Behavior through a Wide Range of Strain	453
N.Q. Chinh, Z. Horita and T.G. Langdon	
Light Alloys Innovation in Australia	459
A.J. Morton	
Study of the Crack Sensitivity of 6xxx and 7xxx Aluminum Alloys	465
H. Nagaum and T. Umeda	
The Effect of Si Additions on the Nucleation of Ω in Al-Cu-Mg Alloys	471
B.M. Gable, G.J. Shiflet and E.A.J. Starke	
Semisolid Strip Casting Using a Vertical Type Twin Roll Caster	477
R. Nakamura, K. Takahashi and H. Watari	
In-Situ, Laser-Ultrasonic Monitoring of the Recrystallization of Aluminum Alloys	483
S.E. Kruger, A. Moreau, M. Militzer and T. Biggs	
Development of New Aluminium Alloys for Semisolid Processing	489
R. Romera, J. Goñi, J. Coletto, P. Eguizabal, R. Estevan, X. Sainz, I. Hurtado, Z. Azpilgain, I. Lete, A. Armendariz, A. Akizu and L. Wielanek	

Thermal Behaviour of Hot Extruded Aluminium with Copper Phosphorus Additions L.E.G. Cambronero, J.M. Ruiz-Roman and J.M. Ruiz Prieto	495
The Pinning of Grain Boundaries during the Recrystallization of an Al-0.3Mn-0.15Si Alloy Y. Huang and J.F. Humphreys	501
Semi-Solid Extrusion of Al-10%Mg Alloy with a Non-Dendritic Structure Y. Uetani, H. Sueda, H. Takagi, K. Matsuda and S. Ikeno	507
Hot Working Microstructure Map for Magnesium AZ31 M.R. Barnett	515
Investigation of Corrosion Behaviour of Magnesium Alloy AM60B-F under Pseudo-Physiological Conditions J. Lévesque, D. Dubé, M. Fiset and D. Mantovani	521
Grain Refinement of Magnesium Alloy AZ91D Cast in Permanent Mold Using Mechanical Vibrations A. Maltais, M. Fiset and D. Dubé	527
Challenges in Lost Foam Casting of AZ91 Alloy L. Bichler, C. Ravindran and A. Machin	533
The Influence of Procedure Parameters on the Characters of Semi-Solid AZ91 Magnesium Alloy S.S. Xie, X. Zeng, Y.X. Jiang, G.X. Chen and J. Shen	539
Development of Plasticity Processing of Magnesium Alloys S.H. Zhang, Q.L. Jin, Z.T. Wang, D.-. Li and W.L. Zhou	545
Optimisation of Mechanical Properties of an AZ 91 Alloy by Microstructure Control J.J. Blandin	551
Deformation Behavior and Forging of Magnesium Wrought Alloy K. Hatsukano and K. Matsuzaki	557
Microstructure and Mechanical Properties of Hot-Extruded AZ31 Powders K. Matsuzaki, K. Hatsukano, K. Hanada, T. Shimizu and T. Sano	563
Current Status and Manufacturing Technologies of Magnesium Alloy Parts in Japanese Home Electronics Y. Nishikawa and A. Takara	569
Mechanical Alloying of Powder Mixture of Magnesium Alloy Chips and Aluminum A. Ohguchi, H. Oginuma, E. Yuasa, R. Tsuzuki and K. Kondoh	575
Microstructure of Anodic Films Grown on Magnesium-Lithium-Yttrium Ultra Light Alloy S. Ono, Y. Suzuki, H. Asoh, N. Hanzawa and M. Hyakutake	581
Simulation of Mg Sheet Press Cell Materials K. Shimojima, M. Mabuchi, Y. Chino, H. Hosokawa, Y. Yamada and C.E. Wen	587
Creep Behavior and Deformation Substructure of Mg-Y Alloys Containing Dilute Content of Zinc M. Suzuki, T. Kimura, J. Koike and K. Maruyama	593
Atomic Size Effects on Al, Ca and Sc in Mg Solid Solutions from First-Principles Calculations T. Uesugi, M. Kohyama and K. Higashi	599
The Effect of Temperature and Flow Stress for Climb-Controlled Dislocation Creep in Magnesium Alloy H. Somekawa, H. Watanabe, T. Mukai and K. Higashi	605
Initial Grain Size Effect of Dynamic Recrystallization of Magnesium Alloy AZ31 X.Y. Yang, H. Miura and T. Sakai	611
Mechanical Properties of Magnesium Alloy Sheets Produced by Semi-Solid Roll Strip Casting H. Watari, R. Nakamura, K. Davey, H. Ona, S. Izawa, H. Hamano, T. Iwashita and M. Nakayama	617
Expendable Pattern Casting of AZ91D Magnesium Alloy G.S. Cho, K.W. Lee, S.K. Kim, H.H. Jo, S.C. Lim and W.Y. Kim	623
Hydrostatic Extrusion of Magnesium: Process Mechanics and Performance W.H. Sillekens, J.A.F.M. Schade van Westrum, A.J. den Bakker and P. Vet	629
Microstructural Evolution during Hot Rolling of an AZ31 Mg Alloy J.A. del Valle, M.T. Pérez-Prado and O. Ruano	637
Titanium Airframe Applications: Brief History, Present Applications and Future Trends R. Boyer	643

Effect of Cu-Ni Plasma Coating on Fretting Fatigue Characteristics of Ti-6Al-4V under Flat-on-Flat Contact	
M. Niinomi, A.L. Hutson, E.B. Shell, D. Eylon and T. Nicholas	649
Dynamic Recovery and Recrystallization in Beta-Titanium Alloys	
T. Furuhara, Y. Toji, H. Abe and T. Maki	655
Control of Mechanical Properties of Ti-Fe-O-N Based Titanium Alloys by Thermomechanical Processing	
H. Fujii	661
Effect of Microstructures on Mechanical Properties of Heat Resistant Titanium Alloys at Elevated Temperatures	
A. Suzuki, T. Noda and M. Okabe	667
Ultra-Fine Grain Refinement, Superplasticity and its Application of Titanium Alloys Obtained through Protium Treatment	
H. Yoshimura and J. Nakahigashi	673
Multi Functional Titanium Alloy "GUM METAL"	
T. Saito, T. Furuta, J.H. Hwang, S. Kuramoto, K. Nishino, N. Suzuki, R. Chen, A. Yamada, K. Ito, Y. Seno, T. Nonaka, H. Ikehata, N. Nagasako, C. Iwamoto, Y. Ikuhara and T. Sakuma	681
High Temperature Deformation Behavior of Ti-6Al-4V Alloy with Widmanst��ten Microstructure	
J.H. Kim, S.L. Semiatin and C.S. Lee	689
Research on Microstructure and Mechanical Properties of Laser Direct Deposited Ti-6Al-4V Alloy	
S.Y. Gao, Y.Z. Zhang, L.K. Shi and D.W. Wang	695
Effect of Cold Rolling on the Annealing Texture of a Near-α Titanium	
G.A. Castello-Branco, C.M.B. Bacaltchuk and H. Garmestani	701
Study on Microstructure and Mechanical Properties of an Orthorhombic Ti-Al-Nb-Ta Alloy	
S.Q. Li, Y. Mao, J.W. Zhang and Y.J. Cheng	707
A New Alpha-Beta Alloy, Ti-4.5Al-4Cr-0.5Fe-0.2C, Solution Hardened by Ultra High Content of Carbon	
H. Oyama, S. Kojima, K. Ono and Y. Ito	713
Deformation Behavior and Microstructure Evolutions in Ti-6Al-4V Extrusion	
N.K. Park, J.T. Yeom, Y.S. Na, J.S. Lee, I.O. Shim and S.S. Hong	719
Creep Behaviour at 760°C of Two Nickel-Based Single Crystal Superalloys	
F. Diolgent and P. Caron	725
Microstructural Influences on Notch Fatigue Crack Initiation and Propagation in a Range of Nickel Base Superalloys	
P.A.S. Reed	731
Change in Shape of Creep Curves of γ Single Phase Ni-20mass%Cr Single Crystals with Decreasing Stress	
T. Matsuo, Y. Nakamoto and Y. Terada	737
Modeling and Investigation of Dynamic Recrystallisation in Nickel-Based Superalloys	
C. Sommitsch, M. Walter, F. Wedl and S. Kleber	743
Microstructural Changes in a Ni-Based Super-Alloy Induced by Thermal Treatment	
R. Artiaga, A. Varela, J.L. Mier, A. Garc��a, R. Losada and S. Naya	749
Small-Angle Neutron Scattering: A Tool for Microstructural Investigation of High-Temperature Materials	
P. Strunz, D. Mukherji, R. Gilles, J. R��sler and A. Wiedenmann	755
The Effect of Cold Rolling on the Grain Boundary Character and Creep Rupture Properties of INCONEL Alloy 718	
C.J. Boehlert, S. Civelekoglu, N. Eisinger, G. Smith and J. Crum	761
γ' Precipitation Kinetics in P/M IN100	
A.M. Wusatowska-Sarnek, M.J. Blackburn and M. Aindow	767
An Investigation on Electromagnetic Shaping and Solidification Behavior of Superalloys under Vacuum Environment	
H.Z. Fu, J. Shen, S.M. Li, J.S. Li and L. Liu	773
Mirco-Mechanisms Involved in Rafts of Crept MC2 Nickel-Based Single Crystal Superalloy	
M. Benyoucef, M. Legros, A. Coujou, P. Caron, H.A. Calder��n and N. Cl��ment	779

Creep of [011]-Oriented Ni-20mass%Cr Single Crystals	785
Y. Terada, T. Yasui and T. Matsuo	
Microstructural Evolutions of Superalloy 718 during Dynamic and Metadynamic Recrystallizations	791
J.P. Thomas, F. Montheillet and C. Dumont	
Characterisation and Modelling of Crystal Rotations during Multiaxial Creep in Single Crystal Superalloys	797
M.G. Ardakani, H. Basoalto, B.A. Shollock and M. McLean	
Low-Stress Creep of Ni-20mass%Cr Single Crystals with [001] Orientation	803
T. Tokumoto, Y. Terada and T. Matsuo	
Microstructure Analysis and Modeling of Ingot to Billet Conversion in Alloy 718	809
R. Thompson, G.M. Janowski, W. Carden, J. Papo and H. Ning	
Morphology of γ' Precipitates in Experimental W- and Re- Containing Ni-Base Superalloys	815
D. Mukherji, S. Piegert and J. Rösler	
Misfit Investigations of Nickel-Base Superalloys	821
R. Gilles, D. Mukherji, D. Del Genovese, P. Strunz, B. Barbier, W.A. Kockelmann, J. Rösler and H. Fuess	
High Strength Galvanized Wire for Bridge Cables	829
T. Tarui, S. Konno and T. Takahashi	
Microstructural Elements and Fracture of Hardened High-Carbon Steels	835
G. Krauss, D.K. Matlock and A. Reguly	
High Strain Rate - High Strain Response of an Ultrahigh Carbon Steel Containing 1.3% C and 3% Si	841
D.R. Lesueur, C.K. Syn, O.D. Sherby and D.W. Kum	
Fracture Behavior of an Ultrahigh Carbon Steel Containing 1.3%C as Influenced by Microstructure and Testing Conditions	847
A. Fernández-Vicente, M. Carsí, F. Peñalba, J.A. Jiménez and O. Ruano	
Stress-Strain Rate Relations in Ultrahigh Carbon Steels Deformed in the Ferrite Range of Temperature	853
C.K. Syn, D.R. Lesueur, O.D. Sherby and E.M. Taleff	
Mechanical Properties of Cementite and Fabrication of Artificial Pearlite	859
M. Umemoto, Y. Todaka and K. Tsuchiya	
Hot Deformation of Hypereutectoid Steels	865
H.J. McQueen, C.A.C. Imbert and O.D. Sherby	
Mechanical Properties of In-Situ Laminated Composites Based on Ultrahigh Carbon Steels	871
S. Cheng and O.D. Sherby	
Superplastic Densification of Ultrahigh Carbon Steel Powder Compacts	877
R.D. Caligiuri and L.E. Eiselstein	
Innovative Ultrahigh Carbon Steel Laminates with Outstanding Mechanical Properties	883
M. Pozuelo, F. Carreño and O. Ruano	
Suppression of Secondary Ferrite Formation by Boron Addition in High Carbon Steel Wires	889
M. Nagao, H. Yaguchi and N. Ibaraki	
Particulate Composites of White Cast Iron	895
L.E. Eiselstein and R.D. Caligiuri	
Transformation Behavior of Carbon-Unsaturated and Super-Cooled Austenite in a High Carbon Alloy Steel	901
Z.B. Zhao, C. Liu, Y. Liu and D.O. Northwood	
Research Structure Forming and Formation of Physical-Mechanical Properties at Thermoplastic Processing of Spheroidal Graphite Cast Iron	907
S.P. Efimenko, A. Traino and V.S. Yusupov	
A Novel Processing of Austempered Ductile Cast Iron (ADI)	913
S.K. Putatunda and J.H. Yang	
Superplastic Ultra-High Carbon Steels Processed by Spray Forming	919
J.G. Zhang, B. Yan, H. Zhang, C.D. Zhou, Y.J. Lin, H.S. Shi, J.S. Yao and D.S. Sun	
Influence of Heat Treatment on Fatigue Behavior of a Cu-Ni Alloyed Austempered Ductile Iron	925
S. Yazdani and A. Firouzi	

Characterizing Alloy Additions to High Nitrogen Steels J. Rawers, J. Tylczak, D. Blankenship and S. Bullard	931
Nitrogen-Alloyed Austenitic Stainless Steels for Wire and Cable Applications V. Colombie, X. Montserrat, G. Brown and A. Hendry	937
Nitrogen and Carbon in Austenitic and Martensitic Steels: Atomic Interactions and Structural Stability V.G. Gavriljuk, J. Rawers, B.D. Shanina and H. Berns	943
Effects of Nitrogen on the Deformation Behavior of Duplex Stainless Steel H.J. Lee and Y.W. Chang	951
Thermodynamics of Nitrogen Absorption into Solid Solution in Fe-Cr-Mn Ternary Alloys T. Tsuchiyama and S. Takaki	957
The Dependence of Activity Coefficient on Intensive Thermodynamic Parameters in a Liquid Fe-N-V Alloy A. Hutny and J. Siwka	963
Thermomechanical Treatment of Nitrogen-Containing Corrosion Resistant Steels: Various Structure Classes V. Prokoshkina, L.M. Kaputkina and Y.I. Lojnikov	969
The Effect of Grain Size on the Mechanical and Cavitation Resistance of a High Nitrogen and Low Nickel Austenitic Stainless Steel A. di Schino, I. Salvatori and J.M. Kenny	975
Cycle Precipitation of Fe_{16}N_2 in Nitrided Iron Alloys M. Sakamoto	981
Thermomechanical Strengthening of Nitrogen-Bearing Austenitic Stainless Steels G.E. Kodjasiropov, L.P. Karjalainen and V.V. Gloukhov	987
Microstructural Evolution of Sulfide in Fe-Cr-S Alloys H. Mitsui, K. Oikawa, I. Ohnuma and K. Ishida	993
A Finite Element-Based Integrated Process Model for the Prediction of Thermo-Mechanical and Metallurgical Behavior of Stainless Steel in Cold Strip Rolling C.G. Sun, Y. Lee, Y.D. Lee and S.M. Hwang	999
Evolution of Grain Boundaries and Subboundaries in Stainless Steel during Dynamic Recrystallization A. Belyakov, K. Tsuzaki, H. Miura and T. Sakai	1005
Modelling Primary Recrystallization and Grain Growth in the AISI 316 Stainless Steel A. di Schino, J.M. Kenny and G.C. Abbruzzese	1011
Influence of Wire Electrical Discharge Machining on the Fatigue Properties of High Strength Stainless Steel L. Velterop	1017
Creep Properties and Microstructures on Thermo-Mechanical and Magnetic Treated 9Cr Ferritic Steels S. Muneki, H. Okubo, H. Okada and F. Abe	1023
Effect of Impurity Sulfur on the Stability of Cr Oxides Formed on both Austenitic and Ferritic Steels in a High-Temperature Steam-Atmosphere M. Nakai, Y. Murata, M. Morinaga, R. Hashizume and Y. Sawaragi	1029
Two Specimen Complex Thermal-Mechanical Fatigue Tests on the Austenitic Stainless Steel AISI 316 L K. Rau, T. Beck and D. Löhe	1035
Effect of Sulfur and Phosphorus on Ductility of As Cast Iron-Nickel-Chromium Alloys, Direct Observations on In-Situ Fractured Surface by AES and TEM R. Le Gall, G. Dazelle, O. Danylova and S. Witzke	1041
Modelling the Nitriding Kinetics of Iron-Chromium Alloys R.E. Schacherl, P.C.J. Graat and E.J. Mittemeijer	1047
Tribological Behaviour of a Liquid Nitrided Precipitation-Hardened (PH) Stainless Steel G. Pantazopoulos, T. Papazoglou, S. Antoniou and J. Sideris	1053
Computer Models of Phase Separation Dynamics in Fe-Cr-Mo Ternary Alloys Y. Iwamoto, K. Goto, T. Kuwajima, E. Fukuhara, Y. Suwa and Y. Saito	1059
Formation of Ultra-Fine Grained SUS316L Steels by Ball-Milling and their Mechanical Properties after Neutron Irradiation Y.J. Zheng, T. Yamasaki, M. Terasawa, T. Mitamura and T. Fukami	1065

Prediction of the Flow Stress Curves in Austenitic Stainless Steels	1071
S.I. Kim, Y.D. Lee and Y.C. Yoo	
Nitride Layer Formation on Chromium-Nickel Steel	1077
J. Baranowska	
Claude Rossard, a French Pioneer in the Field of Thermomechanical Processing	1083
F. Montheillet	
Application of the Quenching and Partitioning (Q&P) Process to a Medium-Carbon, High-Si Microalloyed Bar Steel	
D.K. Matlock, V.E. Bräutigam and J.G. Speer	1089
Austenitic Grain Refinement in As Cast HSLA Steels by Dynamic Recrystallization	1095
N. Fujita, T. Narushima, Y. Iguchi and C. Ouchi	
Dilatometric Measurements on the Transformation Behaviour of Nb-Added CSiMn TRIP Steels	
F. Leysen, J. Penning and Y. Houbaert	1101
Improvement of Creep Rupture Properties of Heat Resisting Steels by the Self-Healing of Creep Cavities	
N. Shinya, J. Kyono and K. Laha	1107
Swirling Flow Effect in Immersion Nozzle on Heat and Mass Transport Phenomena in Continuous Casting Mold	
S. Yokoya, S. Takagi, Y. Tsukaguchi and M. Iguchi	1113
Structure and Phase Transformation under Quenching and Tempering during Heat and Thermomechanical Treatment of Steels	
L.M. Kaputkina and D.E. Kaputkin	1119
Influence of Thermomechanical Processing on Microstructural Evolution in Si-Mn and Al-Mn TRIP Steels	
P.A. Manohar, K. Kunishige and T. Chandra	1127
Effects of Alloy System on Spontaneous Reverse Transformation Behavior in Steel	
T. Yokota, K. Sato and M. Niikura	1133
Static Recrystallisation-Precipitation Interaction in Microalloyed Steels	
S.F. Medina and A. Quispe	1139
Advances on the Characterization of High-Silicon Steel for Electrical Applications Produced by Thermomechanical and Dipping-Annealing Treatment	
Y. Houbaert, R. Colás, J. Barros, D. Ruch, R.E. Vandenberghe, M. De Wulf and T. Ros-Yáñez	1145
Study of Grain Boundary Ferrite Nucleation in V Microalloyed Steels by EBSD	
D. Hernández, M. Díaz-Fuentes, B. López and J.M. Rodríguez-Íbabe	1151
New Process for High-Toughness Linepipe Material of Thin Slab and Direct Rolling	
M. Imagumbai and H. Takechi	1157
Recrystallisation Nucleation during Annealing of Ti-Sulc Steel	
W.M. van Haaften, Y. Bi, Y. van Leeuwen, J. Colijn and A.A. Howe	1163
Ferritic-Pearlitic Steel with Deformation Induced Spheroidized Cementite	
L. Storojeva, R. Kaspar and D. Ponge	1169
Effects of Carbon Content on Wear Property in Pearlitic Steels	
M. Ueda, K. Uchino and T. Senuma	1175
Regression and Solute Drag Models for the Activation Energy of Static Recrystallisation in Hot-Worked Steels	
L.P. Karjalainen, M.C. Somani and D.A. Porter	1181
CATRAN - A Multi-Task Physical Model and Computer Program for the Prediction of the Microstructure of Steels According to an Arbitrary Cooling Schedule	
A. Samoilov, Y. Titovets, N.Y. Zolotorevsky and G. Hribernig	1189
Hot Deformation of Austenite at Rates Encountered in the Finishing Stages of Hot Strip Rolling	
J.A. de Almeida and R. Barbosa	1195
New Developments for Microalloyed Heat Treating Steels	
W. Bleck, G. Pariser, S. Trute and C. Klinkenberg	1201
Effect of Grain Refinement and its Application to Commercial Steels	
K. Seto and K. Sakata	1207
Effects of the Addition of High Nitrogen Contents on the Microstructure of 25%Cr- 5%Ni Ferritic-Austenitic Duplex Stainless Steel (DIN Wr. Nr. 1.4460)	
I.F. Machado and A.F. Padilha	1213

The Influence of Al on the Mechanical Properties of Hot Rolled Steel Plates	1219
B. Mintz	
Heat Treatments to Improve Weldability of New Multiphase High Strength Steels	1225
L. Cretteur and A.I. Koruk	
Microstructural Changes of Cementite and Ferrite in Heavily Drawn Pearlitic Wires	1231
Y. Daitoh, N.Y. Sano, T. Hamada, H. Hidaka and S. Takaki	
Strain-Induced Precipitation of Nb(CN) in Low Carbon Steels: Modelling and Experimental Validation	1237
E.J. Palmiere and B. Dutta	
How to Produce Super-Tough Structural Steels	1243
J.I. Leinonen	
Thermomechanically Processed TS-BH Hot-Rolled Sheet Steel and its Strengthening Mechanism	1249
K. Kunishige	
Investigating Precipitation in Microalloyed Austenite during Thermomechanical Processing	1255
R.M. Poths, W.M. Rainforth and E.J. Palmiere	
Theoretical Study on Sympathetic Nucleation VS Ledgewise Growth of Bainitic Ferrite in Steel	1261
Z.G. Yang, J.B. Yang, H.S. Fang and B.Z. Bai	
Study of the Role Played by Nitrogen on the Deep-Drawing Properties of Aluminium Killed Steel Sheets Obtained after a Continuous Annealing	1267
V. Massardier-Jourdan, V. Guétaz, J. Merlin and M.A.G. Soler	
Simulation of the Hot Rolling of Trip-Assisted Multiphase Steels	1273
S. Godet, P.J. Jacques, P. Harlet and F. Delannay	
Grain Size Effect on Behaviour and Microstructure of a Warm Deformed Ti-IF Steel	1279
A. Oudin, M.R. Barnett and P. Hodgson	
Application of Focused Optic Irradiation for Surface Treatment of Commercial Steels	1285
D.E. Kaputkin	
TWICE + HOWAQ Continuous Annealing Line: A New Facility for High Strength Steels Production in Arcelor Group	1289
L. Laquerbe, V. Lhoist, J. Neutjens, F. Ronin and P. Harlet	
A Study on Ultrafine Ferrite Formation during Post Deformation Cooling	1295
A. Shokouhi, H. Beladi and P. Hodgson	
Sigma-Phase Formation upon Solidification Rate in Heat-Resistant Steels	1301
J.L. Garin and R.L. Mannheim	
Strain Induced Precipitation in a Multi-Microalloyed Steel Containing Nb and Ti during RPC Processing	1307
S.Q. Yuan, S.W. Yang, C.J. Shang and X.L. He	
A Model for Niobium Carbonitride Precipitation in Ferrite	1313
P. Maugis, M. Gouné, P. Barges, D. Dougnac, D. Ravaine, M. Lamberigts, T. Siwecki and Y. Bi	
Sigma Phase Precipitation in a Superferritic Stainless Steel	1319
F.C. Pimenta Jr, A.F. Padilha and R.L. Plaut	
Interest of the ThermoElectric Power Measurement for the Study of Strain Ageing in Bake Hardening Steels	1325
N. Lavaire, M.A.G. Soler and J. Merlin	
Effect of Low Carbon Contents on the Activation Energy for Plastic Deformation upon Steels	1331
C.A. Hernández and J.E. Mancilla	
Design of Novel High-Strength Bainitic Steels	1337
F.G. Caballero and H.K.D.H. Bhadeshia	
Aqueous Abrasive Wear of 8620 Borided Steel	1343
M. Vite, J.N. Carrillo, J. Aguilar, I. Hilerio and M.A. Barrón	
Deep-Drawable Steel Strip Produced by Ferritic Rolling	1349
A. Elsner and R. Kaspar	
Micromechanical Damage Simulations of TRIP Steels	1355
S. Papaefthymiou, W. Bleck, U. Prahl, C. Acht, J. Sietsma and S. van der Zwaag	
Microstructural Characterization of Multiphase Steels	1361
S. Zaafferer	

Optimisation of Hot Workability and Control of Microstructure in AISI Type 304L Stainless Steel Using a 'Refined' Dynamic Materials Model Processing Window	1367
P. Rodriguez, S.L. Mannan and S. Venugopal	
A New Method to Determine the Strain and Strain Rate Hardening Characteristics from the Hot Torsion Test	1373
S. Khoddam and P. Hodgson	
Effect of Solidification Structure and Thermomechanical Processing on Microstructure and Texture of Ferritic Stainless Steels	1379
I. Salvatori	
Changes in Structure and Properties of Ferrous Substrates due to Silicon Surface Alloying by Laser	1385
C. Cordier-Robert, A. Iost and J. Foct	
High-Temperature Annealing for Maximization of Dissolved Boron in Creep-Resistant Martensitic 9Cr Steel	1393
F. Abe, T. Horiuchi and K. Sawada	
Flow Stress and Microstructure Modelling of Ferrite-Pearlite Steels during Cold Rolling	1399
O. Bouaziz and C. Le Corre	
Modelling Upper and Lower Bainite Transformation in Steels	1405
M. Azuma, N. Fujita, M. Takahashi and T. Iung	
Suppression of Surface Hot Shortness Caused by Copper in Recycled Steel	1413
K. Shibata	
The Structure Variation of Deformed Austenite during the Relaxation and the Refinement of Bainite in a Nb-B Steel	1419
X.M. Wang, C.J. Shang, X.L. He and A. Wang	
Hydrogen Embrittlement and Electrochemical Corrosion Behaviors of Cu-IF and Microalloyed HSLA Steels	1425
T. Misawa and S. Komazaki	
Critical Assessment of the Bainite Transformation of Finely Grained and Deformed Austenite	1433
S. Godet, P. Harlet, F. Delannay and P.J. Jacques	
Influence of Relaxation Process on the Microstructure and Properties of Low Carbon Bainitic Steel	1439
C.J. Shang, S.W. Yang, X.M. Wang, H.B. Wu and X.L. He	
Cold Plasma Discharge Processes: An Alternative Technology for Steel Annealing	1445
J. Stockemer and P. Vanden Brande	
Development of an Ultra-Low Carbon High Strength Welding Wire	1451
Z.L. Tian, C.Y. Ma, C.H. He and Y. Peng	
Effect of Welding Thermal Cycle on the Microstructure and Mechanical Properties of Ultra-Fine Grained Carbon Steel	1457
Y. Peng, Z.L. Tian, C.H. He, X.M. Zhang and H.J. Xiao	
High Grade Steel Development	1463
I. de S. Bott	
Development of High Strength Low Alloy TRIP-Aided Steels with Ultra Fine Grain	1469
K.I. Sugimoto, A. Hayakawa, S. Hashimoto and S. Ikeda	
A Novel 1500MPa Economic High Strength Steel	1475
J.L. Gu, D.Y. Wei, K.D. Chang, D.Y. Liu, H.S. Fang, B.Z. Bai, Z.G. Yang and W.Z. Zhang	
Effect of NbC Distribution on Mechanical Properties in IF High Strength Steel with Fine Grain Structure	1481
Y. Ono, T. Fujita, Y. Nagataki, T. Urabe and Y. Hosoya	
Development of a Fire Resistant High Strength Low Alloy Steel for Construction	1487
H. Ding, L. Li, Y.Z. Xiao, X. Liu, G.D. Wang, S.E. Hu and W.H. Sun	
Effects of Ausforming on Strength and Toughness in Low Alloy Bainitic/Martensitic Steels	1493
T. Sadasue, S. Suzuki, M. Suwa, S. Mitao and K. Takahashi	
Influence of Liquid Core Reduction in the Microstructure of Steel Thin Slabs	1499
R.G. Santos, S.R. Andrade and J.L. Peralta	
Martensitic and Reverse Transformation in Fe-Ni Bicrystals	1505
M. Ueda, H.Y. Yasuda and Y. Umakoshi	

Effect of Ti Addition on Mixed Microstructure of Allotriomorphic and Bainitic Ferrite in Wrought C-Mn Steels	1511
Y.W. Cho, J. Byun and J.H. Shim	
A Quantitative Study of Interphase Precipitation in a Commercial Microalloyed Steel	1517
S.S. Campos, E.V. Morales and H.J. Kestenbach	
High Strength Stainless Steels Manufactured by Temperature Controlled Rolling	1523
R. Kawalla, K.-. Erkel and G. Goldhahn	
Microstructural Changes during Stress Relaxation of a Deformed Nb-V Microalloyed Austenite	1529
A.I. Fernández-Calvo, L. Mujika, J.M. Rodriguez-Ibabe and B. López	
Evolution of Austenite Microstructure and Precipitation State during Hot Rolling of a Nb-Microalloyed Steel	1535
M. Gómez, S.F. Medina and A. Quispe	
Mechanical Behaviour and Corrosion Resistance of Stainless Steel Cold Rolled Reinforcing Bars	1541
H. Castro, C. Rodríguez and F.J. Belzunce	
Behavioural Study of a Manganese Steel Subjected to Abrasion Wear and the Influence of Thermal Treatment	1547
A. Varela, A. García, J.L. Mier, R. Artiaga, F. Barbadillo and L. García	
Correlation between Apparent Activation Energy for Hot Working and Temperature of No Recrystallization in Microalloyed Steels	1553
N. Radović	
Experimental and Finite Element Modeling for Prediction of Optimum Phase Combinations in Dual Phase Steels	1559
F.M. Al-Abbasi and J.A. Nemes	
A Physics-Based Transformation Model for Low-Carbon Steels: From First Principles to On-Line Application	1565
Y. van Leeuwen, A.W. Luinenburg, M. Onink, J. Sietsma and S. van der Zwaag	
Heterogeneous Deformation Behavior of Pearlite Steels Studied by Neutron Diffraction	1571
Y. Tomota, A. Kanie and T. Suzuki	
Criteria for Weldability Assessment of Austenitic Stainless Steels	1577
S.L. Mannan and V. Shankar	
Effect of Prior Austenite Microstructure on Austenite/Ferrite Transformation of Fine Grained High Strength Low Alloy Steel	1583
Y.H. Bae, S.H. Hong, J.S. Lee, J.K. Choi and W.Y. Choo	
Effect of the Reduction Assigning in Two-Time Cold Rolling IF Steel Sheet for Drawability	1589
Z.Y. Liu, X. Liu and G.D. Wang	
The Morphology, Crystallography, and Formation Mechanism of Grain Boundary Proeutectoid Cementite in High Carbon Steels	1599
G. Spanos, C.Y. Hung and M.V. Kral	
Effect of Microalloying on Hot-Deformation Resistance during Rolling	1605
F. Siciliano and M. Imagumbai	
Proposition of Two Parameters for a Good Characterisation of the Austenitising Condition of Microalloyed Steels	1611
C. Capdevila, F.G. Caballero and C. García de Andrés	
Synthesis and Characterization of Ni-Al Intermetallics Compounds with Grain Refinement Emphasis	1619
J.C. Saraiva and D.B. Santos	
The Investigation of Superplasticity in NiAl Intermetallic Compounds	1625
J.T. Guo, X.H. Du, Y.H. Qi and G.S. Li	
Effect of Ag Alloying on Microstructure, Mechanical and Electrical Properties of NiAl Intermetallic Compound	1631
J.T. Guo, J. Zhou, G.S. Li and Y.H. Qi	
Superplasticity in Large-Grained Intermetallics	1637
D.L. Lin and J. Hu	
Interfacial Reactions between Gamma TiAl and CaO Stabilized ZrO₂ Shell Mould during Casting	1643
Q. Jia, Y.Y. Cui and R. Yang	

The Role of Interfaces in Plastic Deformation of Intermetallic Alloys	1649
V. Paidar	
The Influence of Microstructure and Residual Stress on Pre-Yield Cracking in TiAl-Based Alloys	
N. Mota Solis, D. Hu, M.H. Loretto, W. Voice, M. Preuss, P.J. Withers and X.H. Wu	1655
Behaviour of Ordinary Dislocations in Crept TiAl Alloys at High Temperatures	
J. Malaplate and A. Couret	1661
Recrystallization Texture and Microstructure of an ODS Fe40Al Alloy	
E. Suzon, F. Wagner and T. Grosdidier	1667
High-Temperature Deformation Behaviour of Gas Atomized TiAl Alloy Powder Compacts	
J.P. Fauvarque, M. Thomas and F. Popoff	1673
Lamellar Transformations in Ti-Al Based Alloys	
S. Zghal, M. Thomas, S. Naka, S. Naka and A. Couret	1679
Hot Working of Gamma TiAl Alloys for Turbine Applications	
M. Oehring, U. Lorenz, J.H.D. Paul and F. Appel	1685
Processing of Carbon Containing Gamma Titanium Aluminide Alloys	
J.H.D. Paul, U. Fröbel, M. Oehring and F. Appel	1691
Site Preference Occupation of Co and Mn in Fe₃Al-Based Alloys	
D. Fuks, S. Dorfman, V. Liubich and L. Kutsenko	1697
Control of Lamellar Arrangement in TiAl Intermetallic Compound by Mechanical and Thermal Processes	
H. Fukutomi, K.S. Park, T. Iseki and T. Takahashi	1703
Slip Systems, Dislocation Structure and Plastic Deformation Behavior of Ni₃Ti Single Crystals with D0₂₄ Structure	
K. Hagihara, T. Nakano and Y. Umakoshi	1709
Property Enhancement of Orthorhombic Ti₂AlNb-Based Intermetallic Alloys	
M. Hagiwara, S. Emura and A. Araoka	1715
Semi-Quantitative HRTEM for Partially Ordered Materials: Application to Al-Rich TiAl Alloys	
S. Hata, T. Nakano, K. Higuchi, Y. Nagasawa, N. Kuwano, M. Itakura, Y. Tomokiyo and Y. Umakoshi	1721
Mechanical Properties of Cold-Rolled Ni₃Al Thin Foils	
T. Hirano, M. Demura, K. Kishida, S. Kobayashi and Y. Suga	1727
Directional Solidification of TiAl Alloys for Aligning Lamellar Microstructures and Mechanical Properties of Directionally-Solidified Ingots	
H. Inui, D.R. Johnson and M. Yamaguchi	1733
Formation of FeAl In Situ ODS Alloy by Mechanochemical Reaction Using Mill Scale Powder and its Properties	
K. Isonishi, K. Ameyama and Y. Hayashi	1739
Oxidation Behavior of Mo-Based Alloys Coated with Silicide Using the Halide-Activated Pack Cementation Method	
K. Ito, T. Hayashi, T. Murakami and M. Yamaguchi	1745
Effects of α_2 Spacing on Creep Deformation Behavior of Hard Oriented PST Crystals of a Lamellar TiAl Alloy	
K. Maruyama, T. Nonaka, J. Matsuda and H.Y. Kim	1751
Effects of Processing Condition on Properties of Ti-Aluminides Reinforced Ti Matrix Composites Synthesized by Pulsed Current Hot Pressing (PCHP)	
K. Mizuuchi, M. Sugioka, M. Itami, M. Kawahara, J.H. Lee and K. Inoue	1757
Selectivity of Anti-Phase Boundary Introduced in Al₅Ti₃ Superstructure	
T. Nakano, Y. Nagasawa, Y. Umakoshi, S. Hata, N. Kuwano, M. Itakura and Y. Tomokiyo	1763
Influence of the Addition of Cr and Al Elements to the Mo₃Si Intermetallic Alloy on the Phase Construction and the Oxidation Behavior	
S. Ochiai	1771
Crystal Structure and Thermoelectric Properties of ReSi_{1.75} Based Silicides	
Y. Sakamaki, K. Kuwabara, G. Jiajun, H. Inui, M. Yamaguchi, A. Yamamoto and H. Obara	1777
Identification of Chirality of Enantiomeric TaSi₂ Crystallites by Convergent-Beam Electron Diffraction	
H. Sakamoto, A. Fujii, H. Inui, K. Tanaka, M. Yamaguchi and K. Ishizuka	1783

Enhanced Densification of Combustion Synthesized Ni-Al or Ti-Al Intermetallic Compounds by Third Element Addition	1789
K. Uenishi, T. Kimata, Y. Miyazaki and K.F. Kobayashi	
Creep Properties of Ir-Based Alloy with FCC + L1₂ Two-Phase Structure	1795
Y. Yamabe-Mitarai and H. Harada	
Orientation Dependence of Pseudoelasticity in Fe₃Al Single Crystals	1801
H.Y. Yasuda, K. Nakano, M. Ueda and Y. Umakoshi	
Improvement of the Oxidation Resistance of EPM Gamma-TiAl Alloy by Y-Addition	1807
Y. Wu, S.K. Hwang, S.W. Nam and N.J. Kim	
Microstructure Control of DS NiAl/Ni₃Al Alloy by Fabrication of Columnar-Grained NiAl Martensite	1813
S.H. Kim, M.H. Oh and D.M. Wee	
High Temperature Oxidation of Ti-(43~52%)Al-2%W-(0~0.5%)Si Intermetallics	1819
D.B. Lee, W.S. Shim and D.Y. Seo	
Syntheses of Metastable Trialuminides by Mechanical Allooying	1825
K.I. Moon and K.S. Lee	
Effects of Si and B Additions on the Thermal Stability of Lamellar Microstructure of TiAl Alloys	1831
S.W. Kim, H.N. Lee, M.H. Oh, M. Yamaguchi and D.M. Wee	
The Effect of Li, Ce and Ni Additions on the Microstructure and the Mechanical Properties in the AlFe Intermetallic System	1837
M. Salazar, R. Pérez and G. Rosas	
Properties of γ-TiAl-M (M = Ag, Cr) Sputtered Films	1843
A.S. Ramos and M.T. Vieira	
Strangeness of Deformation Behavior of Intermetallics	1849
B.A. Greenberg and M. Ivanov	
Reaction Sintering of an Aluminium-Based Ternary Intermetallic and its Properties	1855
Y.S. Liu, T. Sritharan and P. Hing	
On the Strength of Ni₃Al Based Compounds	1861
T. Kruml and J. Martin	
Crystallization Behavior and the Thermal Properties of Zr₆₃Al_{7.5}Cu_{17.5}Ni₁₀B₂ Bulk Amorphous Alloy	1867
J.S.C. Jang, L.J. Chang, Y.T. Jiang and P.W. Wong	
Processing Intermetallic Sheet Materials from Elemental Foils Using Cold Roll Bonding and Reaction Annealing	1873
V.L. Acoff and G. Chaudhari	
Effect of Silicon on the Thermal Properties of the Zirconium-Based Bulk Amorphous Alloys	1879
J.S.C. Jang, M.T. Chen, Y.W. Chen, M.C. Yea, S.T. Chung and W.T. Wu	
Microscale Characterization of Deformation Defects in Bulk Intermetallics Alloys Using Electron Channeling Contrast Imaging	1885
M.A. Crimp, B.A. Simkin, B.-. Ng, D.E. Mason and T.R. Bieler	
Transient Liquid Phase Bonding of Intermetallic Compounds	1891
W.F. Gale	
Sintering Behavior of Iron Aluminide Powders	1897
S. Gedevanishvili and S.C. Deevi	
Discovery of Critical Oxygen Content for Glass Formation in Zr₈₀Pt₂₀ Melt Spun Ribbons	1903
D.J. Sordelet, E.A. Rozhkova, X. Yang and M.J. Kramer	
Effect of Chromium Addition on the Properties of a Fine-Grained PM Ni₃Al Alloy	1909
P. Pérez, J. Ruiz-Chica, G. Garcés and P. Adeva	
Superplastic Behavior of Hot Extruded Gamma TiAl (Mo, Si) Alloys	1915
J.A. Jiménez, M. Carsí, O. Ruano, G. Frommeyer, S. Knippscher and J. Wittig	
Nanocrystalline Microstructures Produced by Twinning during Superplastic Deformation of a γ-TiAl Intermetallic	1921
M.A. Muñoz-Morris and D.G. Morris	
Mechanosynthesis of an Fe-Ni Melt-Spun Amorphous Alloy under Different Milling Conditions	1927
J.J. Suñol, A. González, P. Bruna, T. Pradell, N. Clavaguera and M.T. Mora	

Processing of γTiAl, by Ceramic Crucible Induction Melting, and Pouring in Ceramic Shells	1933
J. Barbosa, C.A. Silva Ribeiro and C. Monteiro	
Reaction Rate and Mechanism in the Formation of Rare Earth - Transition Metal Compounds	1939
T. Tanabe and S. Yamamoto	
Glass Formation in Eutectic Alloys	1945
D. Ma, Y. Zhang, H. Tan and Y.Y. Li	
Liquid Phase Sintering of WC-FeAl and WC-Ni₃Al Composites with and without Boron	1951
M. Ahmadian, D. Wexler, A. Calka and T. Chandra	
Fabrication of Nickel-Aluminides Fiber / Nickel Composite by Reaction at Narrow Holes	1957
Y. Watanabe and T. Goto	
Synthesis of Magnesium-Particulate Composites by Thermomechanical Processing	1965
J. Kaneko, A. Yamazaki, M. Sugamata and L. Błaż	
Processing and Properties of Metal Matrix Composites Synthesized by SHS	1971
S.P. Hannula, P. Lintula, P. Lintunen and T. Lindroos	
Investigations of New Oxide Dispersion Hardened Platinum Materials in Laboratory Tests and Industrial Applications	1979
J. Merker, B. Fischer, R. Völkl and D.F. Lupton	
Time-Temperature Dependences of Fracture Toughnesses of Epoxy Resin and Silica Particulate-Filled Epoxy Composite	1985
W. Araki, T. Adachi and A. Yamaji	
In Situ Multilithic Metal Matrix Composites Produced by Codeformation Processing	1991
J.S. Marte, T.F. Zahrah and S.L. Kampe	
Microstructures for High Precision Cemented Carbide Micro-Die Machined by FIB	1997
H. Hosokawa, K. Shimojima, M. Mabuchi, M. Kawakami, S. Sano and O. Terada	
Casting of Composite Material Strip Using a Downward Melt Drag Twin Roll Caster	2003
R. Nakamura and K. Takahashi	
Process Improvement for Investment Casting of SiCp/AZ91D Magnesium Composite	2009
S.K. Kim, H.H. Jo, S.C. Lim, H.C. Kwon, B. Han and Y.J. Kim	
Material Mechanical Properties and Microstructure of Magnesium Alloy Matrix Composites Fabricated by Casting Process	2015
G. Sasaki	
Electromagnetic Wave Absorption Properties of Amorphous Alloy-Epoxy Composites	2021
K.M. Lim, M.C. Kim and C.G. Park	
Effect of Thermal Treatment on Thermal Expansion Behaviour of Magnesium Alloy Based Hybrid Composites	2027
S.K. Thakur, B.K. Dhindaw, N. Hort and K.U. Kainer	
Synthesis of TiC/Ni Cermets via Mechanically Activated Self-Propagating High-Temperature Synthesis	2033
S. Dubois, E. Heian, N. Karnatak, M.F. Beaufort and D. Vrel	
Deformation Behaviour of 7075Al/SiCp Composite during Multi-Pass Deformation at High Temperatures	2039
T. Chandra, J.M. Cabrera and J.M. Prado	
Steel Reinforced Thermoplastics	2045
W. Dekeyser and I. Lefever	
Determination of the Interfacial Bond Strength for Composite Materials	2053
D.Y. Li	
Computer-Assisted Design of Nb-Based In-Situ Composites and Superalloys	2059
K.S. Chan	
Sliding Wear Behavior of TiB₂ Nanoparticle Reinforced Copper Matrix In-Situ Composites under Electric Current	2065
W. Rong, J.P. Tu and S.Y. Guo	
Development of a New Composite Product from Blast Furnace Slag	2071
A.A. Francis and M.A. Shoeib	
Wear and Mechanical Properties of Reaction Synthesized Ti-6Al-4V/TiC Composite	2077
H.S. Chung, Y.H. Kim, D. Yang, J.H. Ahn and Y.J. Kim	

Study of the Coefficients of Thermal Expansion of Phases Embedded in Multiphase Materials	2083
S. Fréour, D. Gloaguen, M. François and R. Guillén	
Internal Stress Reduction in Filament Wound Composite Pipes by Humid Conditioning: Numerical Simulation	2089
F. Jacquemin, A. Vautrin and R. Guillén	
A Novel High Profit Recycling Technology for SiC Particle Reinforced Magnesium Composites	2095
W. Ha, S.K. Kim, H.H. Jo, M.G. Kim and Y.J. Kim	
Preparation and Characterization of Hydroxyapatite Powder/Poly(Acrylamide/Itaconic Acid) Composite Hydrogel	2101
K.S. Chen, M.R. Yang, Y. Ku, T. Chen and F.H. Lin	
Creep Model for Multidirectional Short-Fiber Reinforced Metal Matrix Composite	2107
A. Wanner and G. Garcés	
A Study on the Improvement of the Toughness in Al-Cu-Fe Quasi-Crystals	2113
J.M. Koo, S.K. Hur, K.S. Shin and J.S. Bae	
Thermal Cycling of Mg-MMCs	2119
S. Kumar, S. Ingole, H. Dieringa and K.U. Kainer	
Combustion Synthesis of Copper Matrix (Ti,W)C Reinforced Composites	2125
A. Saidi and N. Zarrinfar	
A Multi-Scale Continuum for Damaged Fibre Composites	2133
P. Trovalusci	
Development of Aluminium Composites through P/M Route: Case of Nitrides	2139
V. Amigó, D. Busquets, L. Gómez and J.L. Ortiz	
Characterisation of Orthorhombic (Ti₂₅Al₂₅Nb)/SiC Intermetallic Composites for Advanced Space Applications	2145
J. Coletto, J. Goñi, P. Egizabal, M. García de Cortázar, G. Lilly, X. Sainz and L. Pambaguian	
Novel Electronic Packages Made of Highly Loaded SiC Particle Aluminium Based Composites for Space Applications	2151
J. Coletto, J. Maudes, J. Goñi, J. Marcos, J. Calvín and F. Costas	
Ventilated Brake Discs Manufactured in Aluminium Matrix Composites and Hypereutectic Aluminium Alloys	2157
J. Goñi, J. Coletto, P. Eguizabal, A. Rubio, A. García and J. Sanchez	
Study of a Curing Reaction of an Epoxy Resin	2163
F. Barbadillo, R. Losada, M. Suárez, J.L. Mier, L. García and S. Naya	
Thermal Conductivity Estimation in Continuous Fiber Metal Matrix Composites with Random Distributions	2169
D. Alcaraz, J.A. Moreno and F. Alhama	
New Aluminium Matrix Composites Manufactured by an In-Situ Process	2175
Y. Lepeititcorps, N. Zanardo, L. Albingsre, K. Imielinska, J. Coletto, J. Goñi and P. Egizabal	
Pressure Infiltration of Silver Into Compacts of Oxidised SiC	2181
J.M. Molina, C. García Cordovilla, E. Louis and J. Narciso	
Thermal Expansion Coefficient and Thermal Hysteresis of Al/SiC Composites with Bimodal Particle Distributions	2187
R. Arpón, J.M. Molina, R.A. Saravanan, C. García Cordovilla, E. Louis and J. Narciso	
Effect of Plastic Deformation on the Microscopic Residual Stresses in 6061Al-15vol%SiC_w Composites	2193
R. Fernández, G. Bruno, R.L. Peng and G. González-Doncel	
Processing and Properties of Cu Matrix Composites for Microelectronic Application	2199
Y.J. Kim, J.H. Ahn and H.S. Chung	
Compression and Compression-Compression Cyclic Deformation Properties of Ferromagnetic Ni₂MnGa-Based Shape Memory Alloy	2207
T. Kira, K. Murata, T. Shimada, S.J. Jeong, S. Inoue, K. Koterazawa and K. Inoue	
Deposition of Fe-Pd Ferromagnetic Shape Memory Alloy Thin Films by Sputtering and Their Shape Memory Behavior	2213
S. Inoue, T. Namazu, S. Fujita, K. Koterazawa and K. Inoue	
Martensitic Transformation of Partially Irradiated Ni-Ti Films, Resulting in a New Technique For Designing Micro-Actuators	2219
T. LaGrange and R. Gotthardt	

Effect of Geometric Factor on Characteristics in Multilayer Ceramic Actuators	2225
J.S. Song and S.J. Jeong	
Theoretical Interpretation of Adhesion Phenomena and its Application to Micro-Manipulation	2231
K. Takahashi and T. Onzawa	
Characteristics of Electronic Structures and Chemical Bonding in Hydrogen-Storage Compounds	2237
M. Morinaga and H. Yukawa	
Molecular Dynamic Simulation of AFM-Based Nano Lithography Process for Fabrication of MEMS Components	2243
Y.S. Kim, S.H. Yang, C.I. Kim and S.S. Lee	
Fabrication and Development of Electroactive Ionic Polymer-Metal Composites and Their Applications as Smart Materials	2249
K.J. Kim	
Constitutive Response of Polycrystalline Shape Memory Alloys	2255
A. Saxena, R. Ahluwalia, T. Lookman and R.C. Albers	
Neutron Diffraction Study of Shape Memory Effect of Ni₂MnGa-Type Alloys	2261
K. Inoue, Y. Yamaguchi, Y. Noda, K. Ohoyama, H. Kimura and K. Enami	
Phase Transformation of B2-PtTi with Ir	2267
Y. Yamabe-Mitarai, T. Hara and H. Hosoda	
Training of Magnetic Shape Memory Alloys	2273
M.A. Gharghouri, A. Elsawy and C.V. Hyatt	
Fabrication and Thermal Expansion of Al-ZrW₂O₈ Composites by Pulse Current Sintering Process	2279
A. Matsumoto, K. Kobayashi, T. Nishio and K. Ozaki	
Recent Progress of Magnetically Controlled Shape Memory Materials	2285
B. Jiang, W. Zhou, Y. Liu and X. Qi	
Twinning and Detwinning of <011> Type II Twins in NiTi Shape Memory Alloy	2291
Z.L. Xie and Y. Liu	
Screen Printing of Carbon Nanotubes for Display Applications	2297
D. Lee, M. Yi, H. Jung, W.S. Seo, J.W. Park, H. Chun and N. Koh	
Effect of Pre-Strain on Shape Memory Strain and Recovery Stress of Ni-50.4Ti Shape Memory Alloy	2303
W. Jin and M.Z. Cao	
Conversion of Variants by Magnetic Field in Iron-Based Ferromagnetic Shape Memory Alloys	2309
T. Kakeshita and T. Fukuda	
Martensitic Transformations in NiTi Polycrystals Investigated by In-Situ Neutron Diffraction	2315
P. Šittner, P. Lukáš, D. Neov and D. Lugovyy	
Near Net Shape, Low Cost Ceramic Valves for Advanced Engine Applications	2321
M. Pidria, E. Merlone, F. Parussa, J. Handelsman and A. Gorodnev	
Shape Recovery of Ni-Ti Alloy Fiber-Reinforced Denture Base Resin by Smart Repair Process	2327
K. Hamada, F. Kawano and K. Asaoka	
Phase Stability and Mechanical Properties of Ti-Ni Shape Memory Alloys Containing Platinum Group Metals	2333
H. Hosoda, M. Tsuji, Y. Takahashi, T. Inamura, K. Wakashima, Y. Yamabe-Mitarai, S. Miyazaki and K. Inoue	
Protein Motors: Their Mechanical Properties and Application to Nanometer-Scale Devices	2339
K. Oiwa	
Voltage Criterion for Electrostatic Detachment of a Microparticle from a Micromanipulated Probe	2345
S. Saito, H. Himeno, K. Takahashi and T. Onzawa	
Processing and Properties of Mechanical Alloyed Al₉₃Fe₃Cr₂Ti₂ Alloys	2351
L. Shaw, H. Luo, J. Villegas and D.B. Miracle	
Dynamic Shock Compaction of Nanocrystalline Bulk Magnetic and Thermoelectric Materials	2357
N.N. Thadhani	

Non-Equilibrium Properties of Nano Structured Materials	2363
Y. Yamazaki, H. Gleiter, C.X. Wu and O.Y. Zhong-can	
A Study of Nanoindentation of Nanostructured Materials	2369
K. Short, R. Wuhrer, G. Collins and W.Y. Yeung	
Preparation and Mechanical Properties of Nanocrystalline Bulk Materials by Spark Plasma Sintering Process	2375
K. Ichikawa, T. Murakami, Y. Nakayama, S. Miyamoto and M. Tokita	
Study on the Magnetic Properties and Microstructure of Nd-Fe-B Nanocomposite Permanent Magnets	2381
X.Y. Chen, Z.L. Jiang, L. Zhang, Y.Z. Chen, F.M. Bai, H.M. Chen and J. Zhu	
Bulk Nanocrystalline Ni₃Al Material Prepared by Self-Propagating High Temperature Synthesis Casting at Low External Temperature	2387
P. La, Q.J. Xue and W.M. Liu	
Calculation of the Free Energy Barrier in the Freezing of Nanoclusters by Atomistic Simulations	2393
H.S. Nam, N.M. Hwang, B.D. Yu, D.Y. Kim and J.K. Yoon	
First-Principle Study on the Reactions and Dynamical Electronic Characteristics of Electromigration on Aluminum Nanowires	2399
Y. Kawakami, T. Kikura, K. Doi, K. Nakamura and A. Tachibana	
Effect of Mo-Doping on the Sol-Gel Prepared Catalysts for Synthesizing Multi-Wall Carbon Nanotube Bundles	2405
X. Yang, X.B. Zhang, Y. Ning, F. Kong, L. Shen, Y. Li and Y.W. Wang	
Synthesis and Processing of Metallic Nano-Powders for the Study of their Mechanical and Magnetic Properties	2411
Y. Champion, J. Bonnentien, C. Langlois, C. Duhamel, J. Moulin, F. Mazaleyrat, P. Bayle-Guillemaud and M.J. Hýtch	
Bulk Nanostructured Aluminium Alloy Al₉₃Fe₃Cr₂Ti₂: Processing and Characterisation	2417
Z. Chlup, I. Todd, A. Garcia Escorial, M. Lieblich, A. Chlupová and J.G. O'Dwyer	
Quantum Sized Chromophores in Vanadium Ceramic Pigments	2423
G. Monrós, A. García, S. Sorlí, P. Benet and M.A. Tena	
Influence of the Strain Rate on the Mechanical Behaviour of a Nanocrystalline Mg-23.5Ni Alloy	2429
P. Pérez, F. Sommer and P. Adeva	
The Isothermal Oxidation Response of a Gamma-Titanium Aluminide Alloy	2437
J. Craft, J.M. Hampkian and W.S. Johnson	
Laser - Induced Surface Modification in A319Al Alloy	2443
S. Nayak and N.B. Dahotre	
Surface Modification of Dilute Mo-Ti Alloys by Gas Carburization	2449
N. Nomura, M. Nagae, Y. Hiraoka, J. Takada and T. Yoshio	
Effects of Bond Coat Processing on the Durability of Thermal Barrier Coatings	2453
N.M. Yanar, F.S. Pettit and G.H. Meier	
Understanding the Formation of D.C. Plasma Sprayed Coatings	2459
P. Fauchais and M. Vardelle	
High Properties Metallic Alloys Obtained through the Thermal Spray Route	2467
C. Coddet, C. Verdy, L. Dembinski, T. Grosdidier, D. Cornu and J.C. García	
On Production of Nanocrystalline Ternary Nitride Coatings via Magnetron Sputtering	2473
R. Wuhrer, G. McCredie and W.Y. Yeung	
Mechanism, Modeling and Application of Laser Large Area Surface Modification	2479
X.C. Yang, Y.S. Wang and J.J. Wang	
Copper Deposition and Subsequent Grain Structure Evolution in Narrow Lines	2485
S.H. Brongersma, J. D'Haen, K. Vanstreels, W. DeCeuninck, I. Vervoort and K. Maex	
Application of Electroless Coating for Processing and Joining of Advanced Materials	2491
M. Brochu, C.A. León and R.A.L. Drew	
Modification of Fatigue and Creep Properties of Ferritic Stainless Alloys Using Plasma Immersion Ion Implantation	2497
S.C. Tjong	
Improvement of High Temperature Corrosion Resistance of Tool Steels by Nanostructured PVD Coatings	2503
P. Steyer, C. Mendibide, J.-. Millet and H. Mazille	

Electrolytic Al₂O₃/ZrO₂ Coating on Co-Cr-Mo Implant Alloys	2509
S.K. Yen, S.J. Wu and C.H. Wu	
Possibility of Repairing Damaged Die Casting Die Surfaces Using CO₂ Laser Surfacing	2515
J. Grum and J.M. Slabe	
Microstructure and Residual Stress Analysis after Laser Cladding of Low-Carbon Steel with Powdery SiC, Stellite 6, and Stellundum 481	2521
J. Grum and M. Žnidaršič	
How Creep Properties Influence the Stress State of Thermal Barrier Coatings	2527
M. Bäker and J. Rösler	
Deposition/Detachment of Particles on Plasma Treated Polymer Surfaces	
M. Lehocký, L. Lapčík, Jr., M.C. Neves, T. Trindade, L. Szyk-Warszynska, P. Warszynski and D. Hui	2533
Development of Solid Oxide Fuel Cells (SOFC) for Stationary and Mobile Applications by Applying Plasma Deposition Processes	
G. Schiller, R. Henne, M. Lang and M. Müller	2539
M₃B₂ Boride Cermet Coating by Sintered Powder	2545
K. Hamashima	
Research Progress on Laser Cladding for High-Temperature Wear and Corrosion Resistant Transition Metal Silicides Composite Coatings	
H.M. Wang, X.D. Lu, Y.F. Liu, G. Duan, L.X. Cai and C.M. Wang	2551
Oxidation Behavior of Cr-Doped Nb(Si,Al)₂ and Coating Nb Substrates with Cr-Doped Nb(Si,Al)₂	
T. Murakami, S. Sasaki, K. Ito, H. Inui and M. Yamaguchi	2557
Surface Engineering of Titanium Alloys: New Prospective Applications	
T. Wierzchoń	2563
The Characteristics of TiCrN Film Prepared by the Dynamic Ion Beam Mixing Method	
H. Nagasaka, T. Yamakawa, T. Kataoka, M. Kakutani, T. Takeuchi, K. Murakami and K. Fujita	2569
Laser Surface Treatment of Sintered M42 High-Speed Steel Diluted with Iron	
M. Otasevic, R. Colaço, E.M. Ruiz-Navas, E. Gordo Odériz and R. Vilar	2575
Oxidation Resistance Coating for Niobium Base Structural Composites	
T. Tabaru, K. Shobu, J.H. Kim, H. Hirai and S. Hanada	2581
The Influence of Surface Preparation on the Properties of Tungsten Carbide Coatings Produced by Gas-Detonation Method	
J.R. Sobiecki, J. Ewertowski, T. Babul and T. Wierzchoń	2587
Hot Corrosion Behavior of Yttria and Ceria Stabilized ZrO₂ Thermal Barrier Coatings	
S.Y. Park, J.H. Kim, C.G. Park, M.C. Kim and H.S. Song	2593
How to Select Induction Surface Hardening and Finished Grinding Conditions in Order to Ensure High Compressive Residual Stresses on Machine Parts Surface	
J. Grum	2599
Formation of Super-Hard Modified Surface by Reactive Electrical Discharge Machining	
Y. Tsunekawa, N. Elumba and M. Okumiya	2605
Surface Modification by Duplex Process Consisted of Radical Nitriding and PVD	
M. Yakushiji, M. Ikenaga and Y. Ishii	2611
Duplex Treatment for Improvement of the Die Performance	
G.W. Kim, S.Y. Lee, S.Y. Lee and J.H. Hahn	2617
Wear Behaviour of HVOF Thermal Sprayed WC-Co and CrC-NiCr Coatings	
A. Forn, J.A. Picas and G. Matthäus	2623
Developing Ultrafine-Grained Microstructures through the Use of Severe Plastic Deformation	
M. Furukawa, Z. Horita, A.P. Zhilyaev and T.G. Langdon	2631
Microstructural Control of a Precipitate-Hardenable Al-Ag Alloy Using Severe Plastic Deformation	
K. Ohashi, T. Fujita, K. Ohishi, K. Kaneko, Z. Horita and T.G. Langdon	2637
Microstructure Evolution and Mechanical Properties in Al-Mg Alloys during Severe Deformation by ECAP and during Subsequent Annealing	
M.A. Muñoz-Morris, C. García Oca, G. González-Doncel and D.G. Morris	2643
Ultra Grain Refinement of Aluminium 1100 by ARB with Cross Rolling	
S. Kaneko, K. Fukuda, H. Utsunomiya, T. Sakai, Y. Saito and N. Furushiro	2649

Influence from Extrusion Parameters on High Strain Rate and Low Temperature Superplasticity of AZ Series Mg-Based Alloys	2655
Y.N. Wang, C.J. Lee, C.C. Huang, H.K. Lin and J.C. Huang	
Investigation of Texture in ECAP Materials Using Neutron Diffraction	2661
S.C. Vogel, D.J. Alexander, I.J. Beyerlein, M.A.M. Bourke, D.W. Brown, B. Clausen, C. Tomé, R.B. Von Dreele, T.G. Langdon and C. Xu	
Mechanical Properties as a Function of Grain Size in Ultrafine Grained Aluminum and Iron Fabricated by ARB and Annealing Process	2667
N. Tsuji, S. Okuno, T. Matsuura, Y. Koizumi and Y. Minamino	
Development of Nano-Structured 1200 and 3103 Aluminum Alloys by Equal Channel Angular Pressing	2673
M. Cabibbo, E. Evangelista, V. Latini, E. Nes and S. Tangen	
Ultra Grain Refinement of 1100 Aluminium Strip by Tandem Rolling	2681
H. Utsunomiya, R. Souba, T. Sakai and Y. Saito	
Comparison between Methods to Characterize the Superplastic Materials	2687
L. Carrino, G. Giuliano and G. Napolitano	
Microstructure and Mechanical Properties of Interstitial Free Steel Subjected to Equal Channel Angular Extrusion	2693
A. Gazder, I.B. Timokhina and E.V. Pereloma	
On the Increase of Thermal Stability of Ultrafine Grained Materials Obtained by Severe Plastic Deformation	2699
S.V. Dobatkin	
Properties of Annealed High Strength Steels Deformed by Repetitive Side Extrusion Process	2705
K. Aoki, Y. Kimura, Y. Asada and A. Azushima	
An Investigation of Deformation in Aluminum Single Crystals Using Equal-Channel Angular Pressing	2711
M. Furukawa, Y. Fukuda, K. Ohishi, Z. Horita and T.G. Langdon	
Microstructural Change during Mechanical Milling Treatment in Fe-C Alloy Powders with Different Initial Microstructure	2717
H. Hidaka, T. Tsuchiyama and S. Takaki	
Microstructural Changes in Copper Processed by Equal Channel Angular Extrusion and Static Annealing	2723
Z. Guo, D. Solas, A.L. Etter, T. Baudin and R. Penelle	
Enhanced Superplasticity in Zirconia-Alumina-Spinel Composite Ceramic	2729
B.N. Kim and K. Hiraga	
Superplasticity of Fine-Grained AZ 91 Alloy Processed by Rotary-Die Equal-Channel Angular Pressing	2735
A. Ma, S.W. Lim, Y. Nishida, M. Nagase, N. Saito, I. Shigematsu and A. Watazu	
High Strength and Good Plasticity of L1₀ Ordered Alloys Provided by Preliminary Strong Cold Deformation	2741
B.A. Greenberg, N.A. Kruglikov and A.Y. Volkov	
Microstructure and Thermal Stability of Tungsten Based Materials Processed by Means of Severe Plastic Deformation	2747
A. Vorhauer and R. Pippal	
Fabrication of Surface Nanocrystalline Aluminum Alloys	2753
M. Sato, N. Tsuji, Y. Minamino and Y. Koizumi	
Crystal Plasticity Model of Microstructure Formation at Severe Strain	2759
T. Fürst, J. Kratochvíl and R. Sedláček	
Thermomechanical Treatment of Ti-Ni-Based Shape Memory Alloys Using Severe Plastic Deformation	2765
I. Khmelevskaya, I.B. Trubitsyna, S. Prokoshkin, S.V. Dobatkin, E.V. Tatyanin, V.V. Stolyarov and E.A. Prokofjev	
Development of Submicrocrystalline Fe - O Steels under Mechanical Milling Followed by Consolidation	2771
K. Tsuzaki	
Multi Equal Channel Angular Pressing with Rotational Dies	2777
Y.H. Kim, X. Ma, P. Hodgson and M.R. Barnett	

High Strain Rate Superplasticity of Ultrafine Grained 5083 Al - 0.2 wt.% Sc Fabricated by ECAP	2783
K.T. Park, Y.J. Oh and D.H. Shin	
Formation of Sub-Micron Structure for a Ti Alloy	2789
B. Bingzhe, S. Xinjun, R.Y. Lutfullin, R.V. Safiullin, V.V. Astanin and Y. Luyi	
Deformation Structure and Crystal Orientation of Copper Single Crystals Deformed by Equal Channel Angular Pressing	2795
H. Miyamoto, U. Erb, T. Koyama, T. Mimaki, A. Vinogradov and S. Hashimoto	
Bulk Nanostructured Steels (BCC), Al Alloys (FCC) and Pure Ti (HCP) Processed by Equal Channel Angular Pressing	2801
D.H. Shin, J.R. Kim, Y.J. Oh and K.T. Park	
Influence of ECAP Modes on Texture and Microstructure Evolution of Aluminium and Copper	2807
J. Kuśnierz	
Ion Irradiation Effect on Superplastic 3Y-TZP Ceramics	2813
T. Shibata, M. Ishihara, Y. Motohashi, S. Baba, T. Sakuma and T. Hoshiya	
Microstructures of Nickel Deformed by High Pressure Torsion to High Strains	2819
X. Huang, G. Winther, N. Hansen, T. Hebesberger, A. Vorhauer, R. Pippal and M.J. ZEHETBAUER	
Effect of Backpressure on the Structure and Properties of Al-Based Alloys Processed by ECAP	2825
V.V. Stolyarov and R. Lapovok	
The Effects of Sandglass Extrusion on Material Microstructures and Properties	2831
W. Lu, Y. Wang and J.T. Hai	
Proposals of Novel Surface Modification Technology Using Friction Stir Welding Phenomenon	2837
T. Shinoda and M. Kawai	
Microstructural Modification and Resultant Properties of Friction Stir Processed Cast NiAl Bronze	2843
M.W. Mahoney, W.H. Bingel, S.R. Sharma and R.S. Mishra	
Improvements to the FSW Process Using the Self-Reacting Technology	2849
M. Skinner and R.L. Edwards	
Laser Treatment Method for Improvement of the Corrosion Resistance of Friction Stir Welds	2855
S.W. Williams, R. Ambat, D. Price, M. Jariyaboon, A.J. Davenport and A. Wescott	
SEM-EBSD Characterisation of the Deformation Microstructure in Friction Stir Welded 2024 T351 Aluminium Alloy	2861
M. Karlsen, Ø. Frigaard, J. Hjelen, Ø. Grong and H. Norum	
The Effect of Thermal Treatments on the Corrosion Behavior of Friction Stir Welded 7050 and 7075 Aluminum Alloys	2867
J. Lumsden, G. Pollock and M.W. Mahoney	
Friction Stir Welding of Al_2O_3 Particulate 6061 Al Alloy Composite	2873
K. Nakata, S. Inoki, Y. Nagano and M. Ushio	
Thin Section Airframe Alloy Welding within WAFS	2879
D. Lohwasser	
The Influence of Friction Stir Processing on Microstructure and Properties of a Cast Nickel Aluminum Bronze Material	2885
K. Oh-ishi, A.M. Cuevas, D.L. Swisher and T.R. McNelley	
Microstructural Modification of Cast Aluminum Alloys via Friction Stir Processing	2891
Z.Y. Ma, S.R. Sharma, R.S. Mishra and M.W. Mahoney	
High Speed Friction Stir Welding of Aluminium Panels for Transport Applications	2897
O.T. Midling	
Friction-Stir Processing of a High-Damping Mn-Cu Alloy used for Marine Propellers	2903
S.P. Lynch, D.P. Edwards, A. Majumdar, S. Moutsos and M.W. Mahoney	
Investigation of the Use of Friction Stir Processing to Repair and Locally Enhance the Properties of Large Ni Al Bronze Propellers	2909
W.A. Palko, R.S. Fielder and P.F. Young	

Residual Stresses, Defects and Fatigue Cycling in Friction Stir Butt Welds in 5383-H321 and 5083-H321 Aluminium Alloys	
M.N. James, G.R. Bradley, D.G. Hattingh, D.J. Hughes and P.J. Webster	2915
Microstructural and Mechanical Evolutions within Friction Stir Welds of Precipitation Hardened Aluminium Alloys	
A. Denquin, D. Allehaux, M.H. Campagnac and G. Lapasset	2921
Thermomechanical Conditions and Resultant Microstructures in Friction Stir Welded 2024 Aluminum	
P. Heurtier, M.J. Jones, C. Desrayaud, J.H. Driver and F. Montheillet	2927
Improved Fatigue Performance of Friction Stir Welds with Low Plasticity Burnishing: Residual Stress Design and Fatigue Performance Assessment	
P. Prevéy and M.W. Mahoney	2933
Microstructure and Properties of Aluminum Alloys Friction Stir Welds for Aircraft Application	
J. Ehrström, A. Bigot, L. Cervi and H. Gérard	2941
Effect of Friction Stirring on Microstructure in Equal Channel Angular Pressed Aluminum Alloys	
Y.S. Sato, M. Urata, H. Kokawa and K. Ikeda	2947
Joint Properties and Thermal Behaviors of Friction Stir Welded Age Hardenable 6061Al Alloy	
W.S. Chang, H.S. Bang, S.B. Jung, Y.M. Yeon, H.J. Kim and W.B. Lee	2953
Utility of Relatively Simple Models for Understanding Process Parameter Effects on FSW	
A.P. Reynolds, Z. Khandkar, T. Long, W.X. Tang and J. Khan	2959
Friction Stir Welding of T-Joints	
K. Erbslöh, C. Dalle Donne and D. Lohwasser	2965
Development of Friction Stir Forming	
T. Nishihara	2971
Friction Stir Processing of Aluminum Alloy 5083 Plate for Cold Bending	
S.P. Vaze, J. Xu, R.J. Ritter, K.J. Colligan, J.J. Fisher Jr. and J.R. Pickens	2979
Investigation of the Microstructure and Properties of a Friction Stir Welded Al-Mg-Sc Alloy	
G. Lapasset, Y. Girard, M.H. Campagnac and D. Boivin	2987
Numerical Simulation of Friction Stir Welding	
D. Lawrjaniec, A. Abisror, C. Decker, M. Koçak and J. Dos Santos	2993
Microstructural Evolution in Ti-6Al-4V Friction Stir Welds	
A.J. Ramirez and M.C. Juhas	2999
Friction Welding of AZ31 Magnesium Alloy	
R. Tsujino, G. Kawai, H. Ochi, H. Yamaguchi, K. Ogawa and Y. Suga	3005
Grade Development of Polycrystalline Cubic Boron Nitride for Friction Stir Processing of Ferrous Alloys	
M. Collier, R. Steel, T.W. Nelson, C. Sorensen and S. Packer	3011
Effect of Time, Temperature, and Solution Composition on the Passivation of 316L Stainless Steel for Biomedical Applications	
K. Rohly, N. Istephanous, A. Belu, D. Untereker, M. Coscio, J.R. Heffelfinger, R. Thomas, J. Allen, R. Francis, A. Robinson, N. Perron, B. Sahli and B. Kobielush	3017
Effects of Titanium Surface Topography on the Cell-Extracellular Matrix Interaction in Osteoblasts	
B. Nebe, F. Lüthen, A. Baumann, U. Beck, A. Diener, H.G. Neumann and J. Rychly	3023
Relationships between the Surface Morphology and a Physical Response in the Biomaterial Field	
A. Iost, D. Najjar, K. Anselme and M. Bigerelle	3031
Relationships between Processing and In-Vitro Dissolution of Calcium-Based Bioceramics	
T. Jones and M. Long	3037
Porous Alginate/HAp Sponges for Bone Tissue Engineering	
H.R. Lin, Y.J. Yeh, C. Kuo and C.Y. Yang	3043
Biomaterial/Polymer Composite for Heart Valve Engineering: Biocompatibility Testing	
C. Stamm, T. Freier, C. Backhaus-Pohl, N. Trenkmann, A. Drechsel, K. Schmitz, G. Steinhoff and A. Haubold	3049

The Improvement of Biocompatibility of an Equiatomic TiNi Shape Memory Alloy by DC Plasma-Polymerized Hexamethyldisilazane Coatings	3055
M.R. Yang, K.S. Chen, S.K. Wu and J.C. Lee	
Evaluation of Ligand Binding to Type 1 Collagen through Computational and Analytical Methods	3061
J. Vaidyanathan, T.K. Vaidyanathan, S. Ravichandran and B.M. Klein	
Pulsatile Flow Testing of a Biomaterial/Polymer Composite Heart Valve Obtained Through Tissue Engineering	3067
A. Khosravi, C. Stamm, M. Philipp, T. Freier, K. Schmitz, G. Steinhoff and A. Haubold	
Fatigue Characteristics of Dental Cast Titanium Alloy, Ti-6Al-7Nb, Conducted with Thermochemical Heat Processing	3073
T. Akahori, M. Niinomi and A. Suzuki	
Sintered Porous Titanium and Titanium Alloys as Advanced Biomaterials	3079
K. Asaoka and M. Kon	
Biological Behaviour of Injectable Calcium Phosphate (CaP) Cement	3085
J.A. Jansen, J.G.C. Wolke and E.M. Ooms	
Preparation of Thermosensitive Hybrid Hydrogels for Biomaterials in Drug Release	3091
W.F. Lee and W.J. Huang	
Surface Properties of Ca-Ion-Implanted Ti-Ni Shape-Memory Alloy	3097
T. Asaoka and S. Nakazawa	
Composition Dependence of Young's Modulus in Beta Titanium Binary Alloys	3103
S. Hanada, T. Ozaki, E. Takahashi, S. Watanabe, K. Yoshimi and T. Abumiya	
Interaction of Type IV Collagen Aggregates with Cells	3109
T. Hayashi, Y. Imamura, M. Hirose, T. Kihara, H. Yamano, E. Adachi and K. Mizuno	
Polymers with Nanostructured Surface Features for Soft Tissue Replacement Applications	3115
K.M. Haberstroh, A. Thapa, D.C. Miller and T.J. Webster	
Mechanical Properties of Ti-Base Shape Memory Alloys	3121
H. Hosoda, Y. Fukui, T. Inamura, K. Wakashima, S. Miyazaki and K. Inoue	
Increased Osteoblast Function on Nanostructured Materials Due to Novel Surface Roughness Properties	3127
T.J. Webster, K. Ellison, R.L. Price and K.M. Haberstroh	
Improving the Fatigue Properties of Poly (Methyl Methacrylate) Orthopaedic Cement Containing Radiopacifier Nanoparticles	3133
A. Bellare, A.H. Gomoll, W. Fitz, R.D. Scott and T.S. Thornhill	
Ionizing Irradiation for Sterilization and Modification of Orthopaedic Biomaterials	3139
M.S. Jahan, D.E. Thomas and M.D. Ridley	
Multifunctional Protein-Based Matrix for Drug Delivery and Wound Management	3145
W.J. Kao, J. Burmania, J. Li, N. Einerson, R. Witte, K. Stevens, D. Nelson and G. Martinez-Diaz	
Controlled Release from Poly(Lactic-Co-Glycolic Acid) Microspheres Embedded in an Injectable, Biodegradable Scaffold for Bone Tissue Engineering	3151
D.H.R. Kempen, C.W. Kim, L. Lu, W.J.A. Dhert, B.L. Currier and M.J. Yaszemski	
Oxide Films on Metallic Biomaterials: Myths, Facts and Opportunities	3157
N. Istephanous, Z. Bai, J.L. Gilbert, K. Rohly, A. Belu, I. Trausch and D. Untereker	
The Influences of Ta and Sn on Phase Constitution and Aging Behavior of Ti-Ta-Sn System Alloys Quenched from a Temperature within Beta Single Phase Region	3165
M. Ikeda, S. Komatsu and Y. Nakamura	
Bioinspired Polymer Surfaces for Prevention of Bioresponse	3171
K. Ishihara, J. Watanabe and Y. Iwasaki	
Effects of Heat Treatment of Spherical Shape Tetracalcium Phosphate on the Reactivity and Injectability of Apatite Cement	3177
I. Kunio	
Novel Machinable Calcium Phosphate Glass-Ceramics for Biomedical Use	3183
T. Kasuga, M. Nogami and M. Niinomi	
Hydroxyapatite Coating on Titanium by Thermal Substrate Method in an Aqueous Solution and its Behavior in SBF	3189
K. Kuroda, Y. Miyashita, R. Ichino and M. Okido	
Longterm Viscoelastic Behavior of Dental Composites	3195
T.K. Vaidyanathan, J. Vaidyanathan and D.J. Ivan	

Organic Modification of Porous α-Tricalcium Phosphate to Improve Chemical Durability	3201
T. Miyazaki, C. Ohtsuki, H. Iwasaki, S. Ogata and M. Tanihara	
Effects of Casting Defects and Microstructure on Fatigue Properties of Cast Ag-Pd-Cu-Au-Zn Alloy for Dental Applications	3207
T. Mizumoto, M. Niinomi, T. Akahori and H. Fukui	
Engineering Biomaterials for Control of Immune Cell Functions	3213
D.J. Irvine, A. Stachowiak and S. Jain	
Bioactive PMMA Bone Cement Prepared by Chemical Modification	3219
C. Ohtsuki, T. Miyazaki, A. Sugino, M. Tanihara, A. Mori and K. Kuramoto	
An Integrated Method for Evaluating the Mechanical Integrity of Biomaterials In-Situ	3225
G.G. Zhang	
New Class of Lactic Acid Copolymers with Reactive and Hydrophilic Segments for Degradable Biomedical Materials	3231
Y. Ohya	
Enhanced Bioactivity of Electrically Poled Hydroxyapatite Ceramics and Coatings	3237
K. Yamashita	
Polyrotaxanes: Challenge to Multivalent Binding with Biological Receptors on Cell Surfaces	3243
N. Yui and T. Ooya	
Thermal Ablation Effects of Duplex Stainless Steel Thermo-Implants	3249
Y.K. Kim, S.Y. Kim and J.H. Lee	
Evaluation of Tissue Adhesion Preventive Surface Modified Natural and Synthetic Polymeric Materials	3255
H. Suh, S.N. Park and J.H. Kim	
Development of Novel 'Pseudo'Polypeptidic Biodegradable Polymers Based on Natural Amino Acid L-Tyrosine for Biomaterial Application	3261
A. Sen Gupta and S.T. Lopina	
Surface Grafting Polymerization and Crosslinking of Thermosensitive NIPAAm Hydrogels onto Plasma Pretreated Substrates and Drug Delivery Properties	3267
K.S. Chen, C.W. Chou, S. Hsu and H.R. Lin	
Preparation and Characterization of Chitosan/Alginate Sponge Immobilized onto Polyurethane-g-Acrylic Acid Modified Film Surface as a Wound Dressing	3273
C.W. Chou and S. Hsu	
The Effect of Maleic Anhydride/Glycerol and Plasma Treatment on Biodegradable LDPE/Tapioca Starch Blends	3279
C.Y. Huang and W. Lu	
A New Internal Element in Dental Implants	3285
A. Gaggl, H. Rainer, W.D. Müller and F.M. Chiari	
Heat Treatment Influence over the Austenitic Stainless Steel Properties used as Biomaterials	3295
I. Butnariu, I. Orbescu, C. Păun, D. Durleci, C. Rizea and I. Butnariu	
High Performance Mg Alloy by Grain Refinement	3299
M. Mabuchi, Y. Chino, K. Shimojima, H. Hosokawa, Y. Yamada and C.E. Wen	
Aluminum Alloyed Cast Iron as an Ecomaterial	3305
S. Takamori, Y. Osawa, H. Kakisawa, K. Minagawa and K. Halada	
Sustainable Products/Services Indicators 2002 within Matsushita Electric Group	3311
T. Aoe	
Recycling of Iron and Steel by Solid State Processes	3317
Y. Chino, M. Mabuchi, K. Shimojima, H. Hosokawa, Y. Yamada, C.E. Wen and H. Iwasaki	
Resources Circulation-Oriented Ecomaterials Design of Continuous Fiber Reinforced Concrete (FRPRC)	3323
T. Fukushima	
Estimation of Energy Requirements and Atmospheric Emission in Continuous Casting Process for Copper Wire	3329
H. Cho, H.H. Jo, S.K. Kim, K.W. Lee and Y.J. Kim	
Physico-Chemical Approach for the Ecomaterialization of Steelmaking Slags	3335
T. Miki, T. Nagasaka and M. Hino	
Production of Fine Uniform Lead-Free Solder Powders by Hybrid Atomization	3341
K. Minagawa, Y.Z. Liu, H. Kakisawa, S. Takamori, Y. Osawa and K. Halada	

Ecomaterial Processing for Recycling of Iron Scrap Containing Impurities Y. Osawa, S. Takamori, K. Minagawa, H. Kakisawa and K. Halada	3347
Material Life Cycle Assessment for Diecasting Process S.K. Kim, H. Cho, H.H. Jo, M.K. Han, S.T. Lim and T. Hur	3353
Mechanical Properties and Microstructure of New Ni Free White Cu Alloy Y. Yoshimura, K. Kita and A. Inoue	3359
New-Sandwiched Hydrogen Separation Membranes with Low Environmental Impact Y. Zhang, T. Ozaki, M. Komaki and C. Nishimura	3365
Mechanical Properties of Al/Al₃Sc Metallic Multilayers - Deformation Mechanisms at the Nanoscale M.A. Phillips, B.M. Clemens and W.D. Nix	3373
MgB₂ Thin Film Growth and Characterisation K.A. Yates, G. Burnell, N.A. Stelmashenko, J.L. MacManus-Driscoll and M.G. Blamire	3379
Structure and Magnetic Properties of Sputtered Fe_{100-x}Pt_x Alloy Thin Films J.P. Chu, T. Mahalingam, Y.Y. Hsieh, S.F. Wang and K. Inoue	3385
Isotopic Exchange between Gaseous Hydrogen and Scandium Dideuteride Thin Films M.A. Mangan, J.F. Browning and J. Majoweski	3391
Characterization of Polymer Films by Flow Microcalorimetry P.J. Reucroft, D. Rivin and N.S. Schneider	3397
Processing Effects on Structure-Property Relationships in Sputter Deposited Thin Gold Films N.R. Moody, D.P. Adams, D.L. Medlin, T. Headley and N. Yang	3403
Elastic Properties of Supported Polycrystalline Thin Films and Multilayers: an X-Ray Diffraction Study P. Goudeau, P. Villain, N. Tamura, P.O. Renault, K.F. Badawi and H.A. Padmore	3409
A Problem of Anisotropic/Isotropic Bimaterial with a Singularity or under a Remote Stress H. Shin, S.T. Choi and Y.Y. Earmme	3415
Glide and Climb of Dislocations in Ultra-Thin Metal Films J. de la Figuera, A.K. Schmid, K. Pohl, N.C. Bartelt, C.B. Carter and R.Q. Hwang	3421
Characterization of Anodic Films Formed on Mg-Al Alloys in Alkaline Bath S.J. Kim, R. Ichino and M. Okido	3427
Tailoring of the Elastic Properties by Texture Control in Ferroelectric Thin Films for MEMS J. Ricote, M. Algueró and D. Chateigner	3433
Chemical Vapor Deposition of Cr-Based Thin Films as Diffusion Barriers in Copper Metallization F. Maury, C. Gasquères, F.-. Duminica and F. Ossola	3439
Thermoelectric Properties of CoSi Thin films K. Adachi, K. Ito, L.T. Zhang and M. Yamaguchi	3445
Structural and Mechanical Properties of Stainless Steel Thin Films Elaborated by Thermal Evaporation and Ion Beam Sputtering P. Goudeau, N. Merakeb, J.P. Eymery, D. Faurie, B. Boubeker and B. Bouzabata	3451
Formation of Calcium Phosphate Film on Ti Substrate in Aqueous Solutions in the Control of Temperature and Ion Activity M. Okido, K. Kuroda and R. Ichino	3457
The Effect of Lattice Strain on the Step Edge Diffusion and Morphological Development during Epitaxial Growth K. Hong, P.R. Cha and J.K. Yoon	3463
Evaluation of Interface Strength between Thin Films Fabricated on a Silicon Substrate for an Advanced LSI on the Basis of Fracture Mechanics Concept T. Shibutani, T. Tsuruga, Q. Yu and M. Shiratori	3469
TiNi Thin Films for Microactuators and Microdevices: Sputter Deposition and Processing Techniques V. Martynov	3475
The Effect of Grain Boundary Characteristics on Microstructure and Stress Void Evolution in Electroplated and Sputtered Cu Films Y.C. Joo, S.J. Hwang and H. Park	3481

Near-Zero-Thickness Self-Assembled Molecular Layers for Future Device Structures: Interfacial Adhesion and Diffusion Barrier Properties	
P.G. Ganesan, G. Cui, A.V. Ellis, R.S. Kane and G. Ramanath	3487
Thermally Activated Flux Creep in High T_c Superconductors	
C.S. Pande, R.A. Masumura and C.R. Feng	3493
Improved-Trapped Magnetic Fields in Top Seeded Melt Grown YBCO Superconductor Doped with Depleted and Enriched Uranium Oxide	
D.A. Cardwell, N. Hari Babu, M. Kambara, Y.H. Shi, C.D. Tarrant and K.R. Schneider	3499
Metallic Buffer Layers for Y-123 Coated Conductor	
M. Ionescu, M. Lakemby, D. Shi and S.X. Dou	3505
Copper and CuNi Alloys Substrates for HTS Coated Conductor Applications Protected from Oxidation	
M. Segarra, L. Miralles, J. Díaz, H. Xuriguera, J.M. Chimenos-Ribera, F. Espiell and S. Piñol	3511
Chemical Approach to the Deposition of Textured CeO₂ Buffer Layers Based on Sol Gel Dip Coating	
I. Van Driessche, G. Penneman, J.S. Abell, E. Bruneel and S. Hoste	3517
Synthesis and Processing of High Temperature Hg-Based Superconductors, from Bulk to Thin Films	
D.M. Bastidas and S. Piñol	3523
Study of the Surface Oxidation Epitaxy of Pure Ni	
Z. Lockman, X. Qi, A. Berenov, W. Goldacker, R. Nast, B. deBoer, B. Holzapfel and J.L. MacManus-Driscoll	3531
High T_c Superconductors - From Material to Applications	
P. Tixador	3537
Epitaxial Growth and High-Frequency Properties of YBa₂Cu₃O₇ Electrodes on LiNbO₃	
F. Sánchez, C. Ferrater, M.V. García-Cuenca, M. Varela, C. Collado, J. Mateu, O. Menendez, J.M. O'Callaghan, L. Fàbrega, R. Rubí and J. Fontcuberta	3543
Texture, Microstructure and Stress Investigations in 0.18 μm Damascene Cu Interconnect Lines	
K.K. Mirpuri, J.Y. Cho and J.A. Szpunar	3551
The Effect of Grain Growth Suppression on the Interface Population in Nimonic PE16	
V. Randle	3557
Fractal Properties of Dynamic Recrystallized Grain Boundaries	
M. Takahashi and H. Nagahama	3563
Shear Texture Control in Low Carbon Steel Sheet by Differential Speed Rolling	
T. Sakai, T. Yoneme, K. Yoneda and Y. Saito	3569
Effect of c/a-Ratio on Crystallographic Texture and Mechanical Anisotropy of Hexagonal Close Packed Metals	
K. Linga Murty	3575
Orientation Related Microstructure Evolution during Continuous Annealing of a Cold-Rolled Low Carbon Steel	
J.L. Bocos, E. Novillo, M. Petite, A. Iza-Mendia and I. Gutiérrez	3581
Grain Size Evolution in Dynamic Recrystallization	
I. Shimizu	3587
Effects of Thermomechanical Processing on Texture Formation in Iron Aluminides	
W. Skrotzki, R. Tamm and C.G. Oertel	3593
The 3-Dimensional X-Ray Diffraction Microscope and its Applications to Recrystallization Studies	
E.M. Lauridsen	3599
Anisotropy of Tensile Properties of Extruded Magnesium Alloy AZ31	
F. Xiong and C.H.J. Davies	3605
Study of Scale Growth on Steel Substrates Using Electron Back Scatter Diffraction	
S. Birosca and R.L. Higginson	3611
Oxidation, Crystallization and Diffusion Processes in Basalt	
D.J.M. Burkhard	3617
Microstructural Evolution in a Model Fe-30wt%Ni Alloy during Hot Plane-Strain Compression	
F. Bai, P. Cizek, E.J. Palmiere, W.M. Rainforth and J.H. Beynon	3623

Microtexture Induced by the Bainitic Transformation in Steels during Welding. Effect on the Resistance to Cleavage Cracking	3629
A. Gourgues	
Relationship between Crystallographic Fabric (Texture) and Elastic Properties of Rocks: Implications from Experiments and Calculations	3635
H.M. Kern	
Thermo-Mechanical Processes in Sapphire Crystals with Different Orientations	3643
P.H. Otsuka, V.N. Gurarie and I.V. Andrienko	
Recrystallization Study of a Low Carbon Steel after Tensile Strain	3649
A. Samet-Meziou, A.L. Etter, T. Baudin and R. Penelle	
Modeling of Texture and Texture-Related Properties during the Thermo-Mechanical Processing of Aluminum Sheets	3655
O. Engler	
Textures Development in Cold-Worked Ferrite-Pearlite Steels by Drawing to Moderate Reductions	3661
I. Mejía, J.A. Benito, A. Roca and J. Jorba	
Microstructure and Properties of Hot Extruded Brass CuZn40Pb2	3667
K. Holler, B. Reetz, K.B. Müller, A. Pyzalla and W. Reimers	
Application of the Texture Component Crystal Plasticity FEM to Forming Simulation	3673
F. Roters	
Interactive Texture- and Finite-Element Simulation for Modelling of Complex Deformation Processes for HCP-Metals	3679
T. Walde and H. Riedel	
The Applicability of Conventional Fiber Texture Analysis Techniques in Electron Backscatter Diffraction	3685
S.I. Wright, D.P. Field and M.M. Nowell	
Effect of Rolling Temperature on the Recrystallization Texture of Warm Rolled Steels	3691
M.R. Toroghinejad, A.O. Humphreys, F. Ashrafizadeh, A. Najafizadeh and J.J. Jonas	
Influence of Repeating of Partial Annealing and Light Rolling Process on Cube Texture in High Purity Aluminum	3697
T. Murakami	
Analysis of Texture Evolution in Cold Rolled and Annealed 3%Si-Fe (100)[011] Single Crystal	3703
T. Toge, M. Muraki and M. Komatsubara	
The Texture Development in the Nb-Microalloyed Steels as an Effect of Intercritical Rolling	3709
J. Majta, A. Bator, A. Bunsch and A.K. Zurek	
Influence of Additives upon Nucleation and Growth of Copper on Titanium Substrates during Electrodeposition	3715
K. Seol, B.H. Choe, Y.K. Lee and J.K. Lee	
Simulation of Grain Growth Selection during Recrystallization of Highly Cold Rolled Aluminum	3721
K. Sztwiertnia	
Effect of Excess Vacancies on Hydrogen Absorption-Desorption Characteristics in Rapidly Solidified B2 TiCo	3727
M. Sung, T. Haraguchi, K. Yoshimi and S. Hanada	
Effect of High Magnetic Field during Primary Annealing on Texture of Silicon Steel	3733
C.M.B. Bacaltchuk, G.A. Castello-Branco, B. Gault and H. Garmestani	
Microtextural Analysis of Grain Fragmentation in Aluminum	3739
D.P. Field, S.I. Wright and P. Trivedi	
Increasing Desirable Recrystallization Texture in IF Steel by Controlled Rolling	3745
B.J. Duggan, K.T. Lam and M.Z. Quadir	
Revealing a Parent Phase Structure after Transformation Based on Crystallographic Relations	3751
R. Decocker, L.A.I. Kestens, R.H. Petrov and Y. Houbaert	
Selective Growth in a Scratched Fe-2.8%Si Single Crystal	3757
K. Verbeken, M.D. Nave, L.A.I. Kestens and M.R. Barnett	
Reducing Cube Volume in Recrystallized Texture by Controlling the Finishing Temperature and Rolling Strain in Al-5%Mg Alloy	3763
C.S.T. Chang, H. Inagaki and B.J. Duggan	

Shear Band Formation in Warm Rolled IF Steel M.Z. Quadir and B.J. Duggan	3769
Coupled FEM and Microstructure Modeling Applied to Rolling and Extrusion of Aluminium Alloys K. Marthinsen, B. Holmedal, S. Abtahi, R. Valle, S. Chen and E. Nes	3777
Microstructure Engineering for Continuous Annealing of Steels and Aluminum Alloys M. Militzer, W.J. Poole and M.A. Wells	3783
Simulation of Microstructural Evolution in Rod Rolling of a Medium C-Mn Steel P.A. Manohar, K. Lim, A.D. Rollett and Y.S. Lee	3789
Analysis of the Influence of the Initial Billet Geometry and Die Design on the Product Geometry during Bi-Material Tube Extrusion P. Kazanowski, W.Z. Misiolek and V.K. Sikka	3795
A Physical Model for Prediction of Microstructure Evolution during Thermo Mechanical Processing X.T. Wang, T. Siwecki and G. Engberg	3801
Prediction of Material Flow Pattern in the Hot Extrusion of Aluminium Alloys by the Finite Element Method X. Vely, X. Duan and T. Sheppard	3807
FEM Analysis of Hot Forging Process for an Automotive Lower-Arm Connector J.J. Park, H.S. Hwang, S.J. Lee, S.C. Hong, S.H. Lim, H.S. Hong, K.J. Lee and K.S. Lee	3813
A New Approach to Interface Engineering by Using an External Magnetic Field S. Tsurekawa and T. Watanabe	3819
Process Limits and Material Behaviour in Incremental Sheet Forming with CNC-Tools G. Hirt, S. Junk, M. Bambach and I. Chouvalova	3825
Process Control Model for Blast Furnaces L.F.A.d. Castro and R.P. Tavares	3831
Mathematical Modeling of the Mean Flow Stress during the Hot Strip Rolling of Ti-Nb IF Steels F. Siciliano and R. Barbosa	3837
Modelling Hot Deformation of Al-Zn-Mg Alloy J. Shen, Y.Q. Song, S.S. Xie and G. Gottstein	3843
A Model for the Prediction of Microstructure and Mechanical Properties in Cold Rolled and Annealed TRIP Steels T. Iung, M. Azuma, O. Bouaziz, M. Gouné, A. Perlade and D. Quidort	3849
Research on the Coupling between Electromagnetic Pressure and Temperature Field in Dual-Frequency Electromagnetic Shaping Process J. Shen, X. Pei, B.P. Lu, S.M. Li, L. Liu and H.Z. Fu	3855
An Investigation on Machinability and Application of Board Materials (BM) in Low Volume Production of Sheet Metals R. Narimani, H. Khoshkish and M.R. Hossein Nejad	3861
Modelling of Phase Separation Dynamics in Iron-Based Ternary Alloys E. Fukuhara, M. Onuma, Y. Suwa and Y. Saito	3867
Modelling of Recrystallization and Grain Boundary Migration by Cellular Automata J. Kroc and V. Paidar	3873
A Phase Field Model for the Step Dynamics Including Elastic Interactions between Steps D.H. Yeon, P.R. Cha and J.K. Yoon	3879
Simultaneous Estimation of Heat Transfer Boundary Conditions during One-Sided Spray Cooling B. Hernández-Morales, J.S. Téllez-Martínez, E.B. Montufar-Jiménez, A. Ingalls-Cruz and J.A. Barrera-Godínez	3885
Recrystallization, Relation between Modelling and Experiment J. Tarasiuk, K. Wierzbanowski, P. Gerber and B. Bacroid	3891
Data Based Modelling for Prediction and Control of Internal Cleanliness in Steel Strips F. Ortega-Fernández	3897
Constitutive Modeling of High Temperature Mechanical Behavior of a Medium C - Mn Steel K. Lim, P.A. Manohar, D.L. Lee, Y.C. Yoo, C.M. Cady, G.T. Gray III and A.D. Rollett	3903
Incorporating Strain Gradients in Micromechanical Modeling of Polycrystalline Aluminum M. Nygård	3909

Austenite Evolution Modeling in Nb Microalloyed Steels during Thin Slab Direct Rolling P. Uranga, A.I. Fernández-Calvo, B. López and J.M. Rodriguez-Ibabe	3915
Modeling the Hot Flow Stress of Commercial Purity Coppers with Different Oxygen Levels V.G. García, J.M. Cabrera and J.M. Prado	3921
A Network Model to Simulate Transient Non-Lineal Thermal Processes in Metals and Alloys with Allotropic Transformations D. Alcaraz, F. Alhama and C.F. González-Fernández	3927
Mathematical Model for the Residual Stresses Induced during the Heat Treatment of Grinding Balls C. Camurri, A. García, D. Rodríguez and P. Cañete	3933
Non Linear Behavior Micromechanical Multi-Scale Modelling of Discontinuous Reinforced Composites D. Baptiste	3939
X-Ray Microbeam Strain Measurements in Polycrystalline Films G.S. Cargill III, L. Moyer, W. Yang, B.C. Larson and G.E. Ice	3945
Evaluation of the Influence of Shot Peening Parameters on Residual Stress Profiles Using Finite Element Simulation J. Schwarzer, V. Schulze and O. Vöhringer	3951
Contribution of X-Ray Diffraction to Analyse and Improve the Mechanical Behaviour of Materials J.M. Sprauel	3957
Experimental Analysis and Numerical Simulation at Metal-Ceramic Interface A. Carradò, J.M. Sprauel, L. Barrallier and A. Lodini	3963
Residual Stress Measurements of Structural Components by Neutron Diffraction and Proposal Measurement Standard M. Hayashi, S. Okido, Y. Morii, N. Minakawa and J.H. Root	3969
Stress Determination with High Lateral Resolution Using Neutron Diffraction T. Pirlng	3975
Relaxation of Residual Stresses during Fatigue Cycles in Steels J.R. Teodósio, M.C. Fonseca and P.D. Pedrosa	3981
Evaluation of Side Notch Charpy Test on Laser Welded Joint Y. Hagiwara, S. Tsukamoto, T. Otani, G. Arakane and K. Matsuda	3989
Finite Element Analysis in Pulsed GTA Weldments D.R.G. Achar, B. Guha and A.A. Reddy	3995
Microstructures at Aluminum - Copper Magnetic Pulse Weld Interfaces M. Marya, D. Priem and S. Marya	4001
Microstructure and Mechanical Property of Laser Welds of Single Crystal Nickel Base Superalloy CMSX-4 A. Hirose, D. Nakamura, H. Yanagawa and K.F. Kobayashi	4007
Tensile Properties and Microstructure of Weld Metal of X80 Steel H. Motohashi, N. Hagiwara and T. Masuda	4013
The Nature of Acicular Ferrite in Ferrous Weld Metals and the Challenges for Microstructure Modelling G. Thewlis	4019
Computer Aided Design of Pulsed Arc Welding Ensuring Defectless Joint of Metals O.I. Shpiguanova and Y.N. Saraev	4027
Productivity Gains by Flux Bounded TIG Welding of Aluminum S. Sire and S. Marya	4033
Possibility of Industrial Application by the Use of Underwater Shock Wave for Explosive Welding of Various Plates K. Hokamoto, Y. Ujimoto and M. Fujita	4039
3D-Numerical Model Predicting Penetration Shape in GTA Welding Y. Hirata, Y. Asai, K. Takenaka, S. Ohgaki, F. Miyasaka and T. Ohji	4045
New Developments in High-Performance Arc Welding Processes K. Himmelbauer	4051
Simulation Model for MAG Arc Welding as an Engineering Tool T. Yamamoto, T. Ohji, F. Miyasaka and Y. Tsuji	4057

Some Aspects of Weldability and Jointability of Duplex Stainless Steels	4063
S.D. Brandi	
Microstructural Aspect of Cold Crack Susceptibility in High Strength Weld Metal	4069
H.J. Kim	
Joining of Silicon Nitride by Interposing Metal Foils: Effects of Temperature and Bonding Pressure	4075
M.I. Osendi and P. Miranzo	
Thermodynamic Issues of Lead-Free Soldering in Electronic Packaging	4081
S.W. Jeong, J.H. Kim and H.M. Lee	
Effect of Activating Fluxes on the Penetration Capability of the TIG Welding Arc: Study of Fluid-Flow Phenomena in Weld Pools and the Energy Concentration in the Anode Spot of a TIG Arc Plasma	4087
P. Paillard and J. Saindrenan	
Current Problems in Hot Cracking Research Described on the Example of PVR Test	4093
H. Herold, A. Pchennikov and M. Streitenberger	
Estimation of Temperature Distribution and Cooling Rate in Arc Welding Using Three-Dimensional Finite Element Analysis	4099
G.L. Datta and A.K. Pathak	
Arc Behavior under Extreme Condition	4105
Y. Ogawa, T. Morita, J. Matsuda and Z.M. Yang	
Processing of Advanced Materials with a High Frequency, Millimeter-Wave Beam Source and other Microwave Systems	4111
M.A. Imam, D. Lewis III, R.W. Bruce, A.W. Fliflet and L.K. Kurihara	
Jointing Structures of Some Kinds of Lead-Free Solder on EN/IG Finished Boards	4117
T. Sugizaki, H. Nakao and T. Watanabe	
Microstructure Development in Single Crystal Welds	4123
J.M. Vitek, S. Beretta, S.A. David and J.W. Park	
Joining of Steel to Aluminum Alloy by Interface-Activated Adhesion Welding	4129
T. Watanabe, H. Takayama, K. Kimapong and N. Hotta	
Development of an Arc Sensor with Mechanized Rotation of Electrode	4135
C.H. Kim, W.S. Yoo and S.-. Na	
Electrode Storage Condition Effects on Diffusible Hydrogen in SMAW Deposits	4141
A.K. Duncan and B.M. Patchett	
Thermal Analysis and Microhardness Mapping in Hybrid Laser Welds in a Structural Steel	4147
E.A. Metzbower, P.E. Denney, D.W. Moon, C.R. Feng and S.G. Lambrakos	
Weld Metal Test Performance Requirements: A Critical Appraisal of Future Needs	4153
R.M. Denys, P. de Baets and W. De Waele	
The Influence of the Processing Temperature on the Microstructure of γ-TiAl Joints Brazed with a Ti-15Cu-15Ni Alloy	4159
A. Guedes, A.M.P. Pinto, M.F. Vieira and F. Viana	
Advances in Processing Technology for Powder-Metallurgical Tool Steels and High Speed Steels Giving Excellent Cleanliness and Homogeneity	4167
A. Fölzer and C. Tornberg	
Physical Simulation and Analysis of the Hot Workability of a New Powder Metallurgical "Micro-Clean" HS-Steel Grade	4173
S. Kleber and M. Walter	
Characterization by TEM of a Supersaturated P/M Al-Mg-Zr Alloy after Thermal Treatments	4179
S.J. Buso, A. Almeida Filho and W.A. Monteiro	
Powder Injection Molding of Cemented Carbides	4185
X.H. Qu, B.J. Zhu, C. Lei and B. Ye	
Powder Metallurgy in Tooling - Theoretical Background, Material Production and Processing	4191
P. Jurčí	
Densification of W-Cu Powder with Submicron Size Microstructure	4197
C.H. Allibert, S. Lay and F. Dore	
Characterisation from μm to nm Scale for Interface Analysis	4203
S. Lay	

Modelling of Hot Isostatic Pressing of Metal Powders	4209
E. Ouedraogo and L. Sanchez	
Importance of Ball-Milling for the Sintering of Yttria Dispersed W Alloys	4215
R. Taillard, M.-. Avettand-Fènoël, J. Dhers and J. Focat	
Numerical Simulation of the Fatigue Lifetime of a Powder Metallurgical Gear Based on the Green Density Distribution	4221
T. Kraft and H. Riedel	
Advanced Materials for Micro Powder Injection Molding	4227
L. Merz, S. Rath, V. Piotter, R. Ruprecht and J. Haußelt	
Current Status of Micro Powder Injection Molding	4233
V. Piotter, L. Merz, R. Ruprecht and J. Haußelt	
Behavior of Reduction and Sintering in Cementite Powder	4239
M. Egashira, T. Tsuchiyama and S. Takai	
Properties of AlN Powders Synthesized by Rapid Nitridation of Al Powder in Floating System	4245
N. Hotta, M. Kanatani, R. Yonezawa, K. Yanagita, T. Tobitsuka and T. Watanabe	
Development of Ultrafine Grained Austenitic Stainless Steels by High Strain Powder Metallurgy Process	4251
R. Ishibashi, H. Doi and Y. Aono	
A New Powder Metallurgical Process for Upgrading Recycling of Fe-Cu Alloy	4259
H. Kakisawa, K. Minagawa, S. Takamori, Y. Osawa and K. Halada	
Integrated P/M Processing for System Design of Nanocrystalline Ceramics	4265
H. Kimura	
Use of SHS Reaction between Powder and Droplets for Coating, Welding and Freeform Fabrication of Intermetallics	4271
K. Matsuura, M. Kudoh, S. Kirihara and Y. Miyamoto	
Roles of Potassium Bubbles in High Temperature Creep Resistance of Doped Tungsten Fine Wires	4277
K. Tanoue	
The Application of Hot Forming to Influence the Properties of P/M Aluminium Basis Materials	4283
S. Szczepanik	
Micro Powder Injection Molding of Metal Microstructures	4289
N.H. Loh, S.B. Tor, B.Y. Tay, Y. Murakoshi and R. Maeda	
Extrusion and Thermo-Chemical Processing of Layered Linear Cellular Alloys	4295
J.K. Cochran, K. Hurysz, K.J. Lee and T.H.J. Sanders	
Processing and Properties of Multiphase Mo-Si-B Alloys	4301
V. Supatarawanich, D.R. Johnson, M.A. Dayananda and C.T. Liu	
Structure and Properties of Consolidated Attrition-Milled Al-5%Ti PM Specimens	4307
F.G. Cuevas, J. Cintas Físico, J. Alcino Rodríguez and J.M. Gallardo	
Advances in MA Aluminium Powders Consolidation by Mechanical Cold Pressing and Vacuum Sintering	4313
J.M. Gallardo, J.M.M. Martos and F.G. Cuevas	
Processing of Advanced Shape Memory Materials by Powder Metallurgy	4319
J. San Juan, P.P. Rodríguez, M.L. Nó and O. Ruano	
Preparation and Characterization of Three Fe-M (M = Ni, Zr, Nb) Based Alloys Produced by Mechanical Alloying	4325
J.J. Suñol and A. González	
Effect of Mg as Sintering Additive on the Consolidation of Mechanically Alloyed Al Powder	4331
J.J. Fuentes, J. Alcino Rodríguez and E.J. Herrera	
Influence of Carbon Activity and Oxygen Potential of Sintering Atmospheres on the Microstructural Characteristics of Low Alloy P/M Steels	4337
P. Ortiz and F. Castro	
Ni Diffusion Process between Austenite and Ferrite in a Sintered Duplex Stainless Steel Obtained by Powder Mixing	4343
M. Campos, J.J. Muñoz, A. Bautista, F. Velasco and J.M. Torralba	
Optimization of the Synthesis of Soft Magnetic Materials by Mechanochemical Process at Room Temperature	4349
M.E. Rabanal, A. Várez, B. Levenfeld and J.M. Torralba	

Oxidation Behaviour at High Temperature of Ferritic Stainless Steels Manufactured by Powder Metallurgy	4355
A. González-Centeno, F. Velasco, A. Bautista and J.M. Torralba	
Metal Injection Moulding (MIM) of M2 High Speed Steel Using a Polyethylene Based Binder	4361
G. Herranz, B. Levenfeld, A. Várez and J.M. Torralba	
Low-Temperature and High-Temperature Corrosion Behaviour of Powder Metallurgical Duplex Stainless Steels	4367
A. Bautista, F. Velasco, M. Campos and J.M. Torralba	
SHS Production, Processing and Evaluation of Advanced Materials for Wear-Resistant Cutting Tools	4373
M. Pidria, E. Merlone, M. Rostagno, L. Tabone, F. Bechis, D. Vallauri, F.A. Deorsola, I. Amato and M.A. Rodríguez	
Orientations and Tendencies in Manufacturing Industry of the Permanent Ceramic Magnets Using PM Technologies	4379
M. Mangra	
Strain-Rate Dependence of Dynamic Twin Nucleation at Triple Junction in Copper	4387
H. Miura, S. Andiarwanto and T. Sakai	
The Influence of Grain Size on Deformation of Copper	4393
A.H. Chokshi	
Structure and Mechanical Properties of Materials in the Temperature Ranges of Cold, Warm and Hot Deformation	4399
Y.V. Milman	
The Crystallization, Structure and Work Hardening of Casting Fe-N-V Alloys	4405
J. Siwka, L.M. Kaputkina, E.S. Shaidurova and A. Hutny	
Mechanical Properties of Grain Boundaries and Triple Junctions in Metals	4411
V.G. Sursaeva	
Hot Working of an as-Cast Mg-2%Al Alloy	4417
R.S. Kottada and A.H. Chokshi	
Plastic Deformation and Stress-Induced Phase Transformation in Polycrystalline Diamond: Common Phenomena?	4423
R. Schouwenaars	
Elastic Stability and the Limits of Strength	4429
J.W. Morris, D.M. Clatterbuck, D.C. Chrzan, C.R. Krenn, W. Luo and M.L. Cohen	
Change of Elastic Constants of Pure Iron Deformed by Cold Rolling	4435
J.A. Benito, J. Jorba and A. Roca	
A New Theoretical Determination of Yield Stress Based on Efficient Area of Stress and Universal Fractal Power Law	4441
A. Benmohammed and M. Ouali	
Formability Criteria for Cold Heading Applications	4447
C. El-Lahham, J.A. Nemes, N. Nickoletopoulos and M. Hone	
Microstructure Evolution of Hot Rolled W Sheets after Different Heat Treatments	4455
J. Dhers	
Influence of Multi-Step Nitriding Condition upon Mechanical Properties of Dilute Mo-Ti Alloys	4461
T. Hidaka, M. Nagae, T. Yoshio, J. Takada and Y. Hiraoka	
Materials Selection for Solid Oxide Fuel Cells	4465
F. Tietz	
Fatigue Behavior of Glass Ceramics in Water Environment	4471
A. Hiratsuka, A. Yoshikawa, K. Ogawa and K. Adachi	
Influence of Neutron Irradiation on Hardening and Embrittlement Phenomena in Reactor Pressure Vessel Cladding Material	4477
J.S. Lee, I.S. Kim, R. Kasada and A. Kimura	
Correction of CTOD Toughness for Constraint Loss in Structural Components	4483
F. Minami	
Improvement in Mechanical Properties of Hydroxyapatite Objects with Controlled Porosity Made by Modified Gelcasting Process	4489
E.M. Rivera-Muñoz, R. Velázquez-Castillo and R. Rodríguez	

Sol-Gel-Derived Nano-Porous Glasses with High Proton Conductivity	4495
M. Nogami, Y. Daiko and T. Kasuga	
Study on Segregation-Dezincification Relationship in Bi-Se-Bearing Brasses	4501
R.L. Mannheim, O.L. Bustos and J.L. Garin	
Calorimetric and X-Ray Measurements in Ultrafine-Grained Nickel	4507
A.P. Zhilyaev, J. Gubicza, S. Suriñach, M.D. Baró and T.G. Langdon	
Peculiarities of the Mechanical Behavior of Metallic Glasses Investigated by Indentation Techniques	
A.N. Slipenyuk, Y.V. Milman, S.N. Dub and H.A. Makarenko	4513
Numerical Cutting Sensitivity Study of Tool-Chip Contact	4519
P.J. Arrazola, F. Meslin and S. Marya	
Unified Formulation to Predict the Tensile Curves of Steels with Different Microstructures	
R. Rodriguez and I. Gutiérrez	4525
Portable X-Ray Apparatus for Stress Measurements	
V.I. Monin, J.T. Assis, F.R. Pereira, T. Gurova and J.R. Teodósio	4531
Computer Simulation of Change in the Chemical Composition of Coke Ash in the Blast-Furnace	
A. Konstanciak, J. Jowsa and W. Derda	4535
Effect of Boron on Lamellar Grain Refinement and Lath Formation in Wrought Processed Gamma TiAl Alloys	
Y.W. Kim	4541
Modelling of Homogenisation of AA3103	
T. Pettersen, S. Benum, A. Johansen and A. Håkonsen	4549
Measurement of γ/γ' Lattice Mismatch in Creep Deformed Single Crystal Superalloy SC16 Using Synchrotron X-Radiation	
W. Chen, N. Darowski, I. Zizak, G. Schumacher, H. Klingelhöffer, N. Wanderka and W. Neumann	4555
Double Bladed Effect of Re on High-Temperature Oxidation and Hot-Corrosion of Nickel-Based Superalloys	
Y. Murata, M. Moniruzzaman, M. Morinaga, R. Hashizume and A. Yoshinari	4561
Microstructural Evolution during the Hot Deformation of Magnesium Alloy AZ31	
A. Grosvenor and C.H.J. Davies	4567
Thickness of Pancake Austenite Controlling the Size of Ferrite Transformed from Variously Deformed Austenite	
S. Torizuka and K. Nagai	4573
Microstructure and Thermal Stability of Lamellar Cr-Silicides	
E.P. George, H. Bei, K. Serin and G.M. Pharr	4579
Microstructure of M-W (M = Fe, Ni) Alloys Produced by Electrodeposition and Mechanical Alloying	
T. Nasu, M. Sakurai, T. Kamiyama, T. Usuki, K. Tokumitsu and T. Yamasaki	4585
Structure and Mechanical Properties of In-Situ Discontinuously Reinforced Composites of Ti-TiB-System	
D.B. Miracle, S.A. Firstov, L. Kulak, M. Kuzmenko and O. Vasylyev	4591
Microstructure and Properties of Aluminum Friction Stir Welds	
J.C. Lippold and P.J. Ditzel	4597
Grain Refinement under Multiple Warm Compression in an Al-Mg-Sc Alloy	
R. Kaibyshev, S. Olenyov and F. Musin	4603
Thermo-Mechanical Processing Improvements: Benefits and Costs	
J. Williams and S. Ghosh	4609
Ecomaterials; Concept, Practice and Future	
Y. Zhu and K. Halada	4617
Eco-Benign Mesoporous Materials for Organic Reactions	
T. Raja, J. Horníková, N.E. Jacob, R.K. Jha, Y. Kubota and Y. Sugi	4623
Cost Reduction in Titanium Production and Processing	
A.B. Godfrey and C.M. Ward-Close	4629
Precipitation Strengthening of Fully Lamellar Gamma-TiAl Alloyed with Carbon and Silicon	
P.I. Gouma, M. Karadge and Y.W. Kim	4635