

## Table of Contents

### Preface

<b>Progressive Steps in the Platform Science and Technology for Advanced Magnesium Alloys</b> Y. Kojima, T. Aizawa, S. Kamado and K. Higashi	3
<b>Magnesium Research Trend in Japan</b> S. Kamado, T.B. Abbott, J. Koike, K. Kondoh and Y. Kawamura	21
<b>Magnesium Die Casting Alloys for Use in Applications Exposed to Elevated Temperatures: Can They Compete with Aluminium?</b> H. Westengen and P. Bakke	35
<b>Issues that Influence Magnesium's Use in the Automotive Industry</b> G.S. Cole	43
<b>Current and Future Use of Magnesium in the Automobile Industry</b> S. Schumann and H.E. Friedrich	51
<b>Recent Magnesium Alloy Development for Automotive Powertrain Applications</b> A.A. Luo	57
<b>Automotive Applications of Magnesium Alloys</b> T. Kaneko and M. Suzuki	67
<b>Fatigue Crack Propagation Behavior of AZ91D Magnesium Alloy</b> H.C. Jung, D.Y. Chang, W.W. Park, C.S. Lee and K.S. Shin	75
<b>Effect of Stress Ratio on Fatigue Crack Growth Behavior of Magnesium Alloys</b> Z. Sajuri, Y. Miyashita and Y. Mutoh	81
<b>Pyramidal Slip in Magnesium Alloy Single Crystals</b> S. Ando, M. Tanaka and H. Tonda	87
<b>On Methods for Improving the Fatigue Performance of the Wrought Magnesium Alloys AZ31 and AZ80</b> L. Wagner, M. Hilpert, J. Wendt and B. Küster	93
<b>Cyclic Deformation Behavior of Magnesium Alloys AZ31 and AZ91 in the Temperature Range 20-300°C</b> U. Noster and B. Scholtes	103
<b>Fatigue Fracture Mechanisms for Caliber Rolled AZ91D Magnesium Alloys</b> T. Fujii, N. Fuyama and C. Masuda	109
<b>Corrosion Fatigue of Magnesium Alloys</b> E.M. Gutman, A. Eliezer, Y. Unigovski and E. Abramov	115
<b>Hall-Petch Parameters for Tension and Compression in Cast Mg</b> P. Andersson, C.H. Cáceres and J. Koike	123
<b>Temperature Dependence on Impact Failure Behaviour in Extruded Pure Magnesium and Mg-Al-Zn System Alloys</b> N. Aoyagi, S. Kamado and Y. Kojima	129
<b>The Effect of Heat Treatment and Orientation on the Mechanical Behavior of Extruded Mg-Al-Zn Alloy</b> K.Y. Sohn, M.C. Kang and K.H. Kim	135
<b>Mechanical Behaviour of Cast Magnesium Alloys</b> T.B. Abbott, M. Easton and W. Song	141
<b>The Effect of Microstructural Features and Defects on the Ductility of High Pressure Die Cast AS21, AM60 and AZ91</b> M. Easton, T.B. Abbott and C.H. Cáceres	147
<b>Effects of Solid Solution Treatments on Microstructure and Mechanical Properties of AM60B Magnesium Alloys with RE Addition</b> L.M. Peng, X.Q. Zeng, G.Y. Yuan and W.J. Ding	153
<b>Microstructure and Mechanical Properties of Mg-Zn-Ag Alloys</b> S.C. Park, J.D. Lim, D. Eliezer and K.S. Shin	159
<b>Microstructures and Mechanical Behavior of Processed Mg-Li-Zn Alloy</b> J.Y. Wang, W. Hong, P. Hsu, C. Hsu and S. Lee	165
<b>Guide for Enhancement of Room Temperature Ductility in Mg Alloys at High Strain Rates</b> T. Mukai, H. Watanabe, K. Ishikawa and K. Higashi	171

<b>A Mechanistic Understanding of the Formability of Magnesium: Examining the Role of Temperature on the Deformation Mechanisms</b> S.R. Agnew and O. Duygulu	177
<b>New Deformation Mechanisms in Fine-Grain Mg Alloys</b> J. Koike	189
<b>Influence of Grain Boundaries on Plastic Deformation in Pure Mg and AZ31 Mg Alloy Polycrystals</b> N. Ono, K. Nakamura and S. Miura	195
<b>Mechanical Properties and Texture Evolution in ECAP Processed AZ61 Mg Alloys</b> W.J. Kim and H.G. Jeong	201
<b>Optimum Design of Plate Wing with Magnesium Alloys on Supersonic Flutter Characteristics and Structural Mass</b> H. Furuya, I. Fukuchi, N. Kogiso and S. Matunaga	207
<b>Reliability and Optimum Design of Structures with Magnesium Alloys</b> N. Kogiso, S. Matunaga and H. Furuya	213
<b>Lessons Learned from Small Space Systems Development Using Magnesium Alloys</b> S. Matunaga, H. Sawada, H. Furuya and N. Kogiso	219
<b>Generalized Stacking Fault Energy and Dislocation Properties for Various Slip Systems in Magnesium: a First-Principles Study</b> T. Uesugi, M. Kohyama, M. Kohzu and K. Higashi	225
<b>Anomalous Activity of Nonbasal Dislocations in AZ31 Mg Alloys at Room Temperature</b> T. Kobayashi, J. Koike, T. Mukai, M. Suzuki, H. Watanabe, K. Maruyama and K. Higashi	231
<b>Enhanced Grain-Boundary Sliding at Room Temperature in AZ31 Magnesium Alloy</b> R. Ohyama, J. Koike, T. Kobayashi, M. Suzuki and K. Maruyama	237
<b>Microstructures and Tensile Properties of Wrought Magnesium Alloys Processed by ECAE</b> Z.W. Huang, Y. Yoshida, L. Cisar, S. Kamado and Y. Kojima	243
<b>Development of High Strength and Ductile Magnesium Alloys for Automobile Applications</b> L. Cisar, Y. Yoshida, S. Kamado, Y. Kojima and F. Watanabe	249
<b>Microstructures and Tensile Properties of Mg-Zn-Y Alloys Containing Quasicrystals</b> H. Taniuchi, H. Watanabe, H. Okumura, S. Kamado, Y. Kojima and Y. Kawamura	255
<b>Requirements and Feasibility of Magnesium Alloys for Aerospace Applications</b> H. Furuya, S. Matunaga and N. Kogiso	261
<b>Precipitation Hardening in Mg-3 wt%Nd(-Zn) Casting Alloys</b> R. Wilson, C.J. Bettles, B.C. Muddle and J.F. Nie	267
<b>Microstructure and Mechanical Properties of MEZ Casting Alloy</b> C.J. Bettles, K. Venkatesan and J.F. Nie	273
<b>Improving the Performance of Mg-Rare Earth Alloys by the Use of Gd or Dy Additions</b> G.W. Lorimer, P.J. Apps, H. Karimzadeh and J.F. King	279
<b>Effect of Applied Stress on Precipitation Behavior in AZ91D Magnesium Alloy</b> Y.G. Na, D.Y. Chang, S.C. Park and K.S. Shin	285
<b>Constitution and Properties of the Ternary Magnesium Alloys Containing Two Rare-Earth Metals of Different Subgroups</b> L.L. Rokhlin, T.V. Dobatkina and N.I. Nikitina	291
<b>Influence of Heat Treatment on Microstructure of Hot Extruded AZ31</b> J. Dzwonczyk, J. Bohlen, N. Hort and K.U. Kainer	297
<b>HRTEM Observation of the Precipitates in Mg-Gd-Y-Zr Alloy</b> T. Kawabata, K. Matsuda, S. Kamado, Y. Kojima and S. Ikeno	303
<b>The Effect of Ca Addition on Age Hardening Behaviors and Mechanical Properties in Mg-Zn Alloy</b> J. Eom, Q. Jin, S.G. Lim, B.Y. Hur and W.W. Park	307
<b>Anisotropic Properties of Magnesium Sheet AZ31</b> F. Kaiser, D. Letzig, J. Bohlen, A. Styczynski, C. Hartig and K.U. Kainer	315
<b>Evaluation of Press Formability in Magnesium Alloy</b> M. Kohzu, F. Yoshida and K. Higashi	321
<b>Sheet Metal Production of Magnesium</b> R. Poss	327
<b>Plane-Strain Backward Extrusion of AZ31 Magnesium Alloy</b> C.M. Choy, S.C.V. Lim, C.F. Chan and M.S. Yong	337

<b>Tensile Properties and Bending Formability of Drawn Magnesium Alloy Pipes</b> H. Takahashi, Y. Oishi, K. Wakamatsu and N. Kawabe	345
<b>Extrudability of Mg-Al-Zn Alloys</b> T. Murai, S. Matsuoka, S. Miyamoto and Y. Oki	349
<b>Recrystallized Grain Size in Cold-Rolled and Annealed AZ31 Wrought Magnesium Alloys Affected by Rolling Direction</b> G. Itoh, Y. Iseno and Y. Motohashi	355
<b>Study on Warm Caliber Rolling of Magnesium Alloy</b> Y. Tanno, T. Mukai, M. Asakawa and M. Kobayashi	359
<b>Friction Stir Welding of Magnesium Alloys</b> R. Johnson	365
<b>CAE Application to Press Forging of Magnesium Alloys</b> J.K. Hwang, K.Y. Sohn, K.H. Kim and D.M. Kang	371
<b>Formability of AZ91D Alloy by Casting - Forging Process</b> T. Mohri, T. Nishiwaki, M. Kobashi and N. Kanetake	377
<b>Isothermal Sheet Formability and Microstructure Study of Rolling Processed Magnesium Alloy AZ31</b> Y.H. Chen, S. Lee and J.Y. Wang	383
<b>Mushy State Forming of Magnesium Alloy Making Use of Resistance Heating</b> S. Maki, Y. Harada and H. Makino	387
<b>The Diffusion Bonding and Theoretical Model Including Void Growth Mechanism in Magnesium Alloys</b> H. Somekawa, H. Watanabe, M. Kohzu and K. Higashi	393
<b>Microstructures of Friction Welded Joints of AZ31 to AM60 Magnesium Alloys</b> S. Fukumoto, T. Ono, S. Tanaka, H. Tsubakino, T. Tomita, M. Aritoshi and K. Okita	399
<b>The Art of Developing New Magnesium Alloys for High Temperature Applications</b> E. Aghion, B. Bronfin, D. Eliezer, F. Von Buch, S. Schumann and H.E. Friedrich	407
<b>Tensile and Creep Properties of Squeeze Cast Mg Alloys with Various Second Phases</b> M.S. Yoo, Y.C. Kim, S.H. Ahn and N.J. Kim	419
<b>Development of a Cheap Creep Resistant Mg-Al-Zn-Si-base Alloy</b> G.Y. Yuan, M.P. Liu, W.J. Ding and A. Inoue	425
<b>High Temperature Behaviour of the HPDC AS21X Magnesium Alloy</b> E. Evangelista, S. Spigarelli, E. Gariboldi, E. Cerri, O. Lohne and K. Pettersen	433
<b>Newly Developed Heat Resistant Magnesium Alloy by Thixomolding</b> R. Uchida, T. Tsukeda, M. Suzuki, J. Koike and K. Maruyama	439
<b>Heat Resistant Magnesium Alloys for Automotive Powertrain Applications</b> I.A. Anyanwu, Y. Gokan, S. Nozawa, S. Kamado, Y. Kojima, S. Takeda and T. Ishida	445
<b>Development of Heat Resistant Mg-Zn-Al-Ca-RE Diecasting Alloys</b> Y. Gokan, A. Suzuki, S. Nozawa, I.A. Anyanwu, S. Kamado, Y. Kojima, S. Takeda and T. Ishida	451
<b>Creep Characteristics of Ca-Added Die-Cast AM50 Magnesium Alloys</b> Y. Terada, N. Ishimatsu, R. Sota, T. Sato and K. Ohori	459
<b>Thixoforming of Mg-9%Al Alloys with and without RE</b> J.M. Kim, K.T. Kim and W.J. Jung	465
<b>Effects of Zinc on Creep Behavior and Deformation Substructures of Mg-Y Alloy</b> M. Suzuki, T. Kimura, J. Koike and K. Maruyama	473
<b>Mechanical Properties of Aged Mg-4Y-3RE Alloy</b> M. Mabuchi, Y. Chino, K. Shimojima, H. Hosokawa, Y. Yamada, C.E. Wen and H. Iwasaki	479
<b>Effect of Adding La-Rich Mischmetal on the Microstructure and Mechanical Properties of Hot Extruded Mg-8Al Alloys</b> W.G. Yang, C. Koo and W. Hong	485
<b>Effect of Al Content and Pressing Temperature on ECAP of Cast Mg Alloys</b> S.Y. Chang, K.S. Lee, S.H. Lee, S.K. Hong, K.T. Park and D.H. Shin	491
<b>Using Extrusion and ECAP Processing to Achieve Low Temperature and High Strain Rate Superplasticity</b> K. Matsubara, Y. Miyahara, K. Makii, Z. Horita and T.G. Langdon	497
<b>Recrystallization During and Following Hot Working of Magnesium Alloy AZ31</b> M.R. Barnett	503

<b>Continuous Dynamic Recrystallization in Magnesium Alloy</b> A. Galiyev, R. Kaibyshev and T. Sakai	509
<b>Dynamic Nucleation of New Grains in Magnesium Alloy during Hot Deformation</b> X.Y. Yang, H. Miura and T. Sakai	515
<b>Dynamic Recrystallization Based on Twinning in Coarse-Grained Mg</b> O. Sitdikov, R. Kaibyshev and T. Sakai	521
<b>The Deformation Textures in an AZ31B Magnesium Alloy</b> S.K. Wu, T.S. Chou and J.Y. Wang	527
<b>Texture Development of AZ31 Magnesium Alloy during ECAE Processing</b> Y. Yoshida, L. Cisar, S. Kamado, J. Koike and Y. Kojima	533
<b>Superplastic Deformation Behavior in the Commercial AZ61 Mg Alloy during Biaxial Gas-Pressure Forming</b> S.W. Chung, W.J. Kim and K. Higashi	539
<b>Diffusion Process in AZ61 Magnesium Alloy and their Relation with the Cavitation Growth Rate</b> V.A. Juan, H. Hosokawa and K. Higashi	545
<b>Superplastic Properties of Ultrafine-Grained Mg Alloys Processed by Extrusion Plus Equal-Channel Angular Pressing</b> Y. Miyahara, K. Matsubara, K. Neishi, Z. Horita and T.G. Langdon	551
<b>Superplastic Behavior of an ECAE Processed ZK60 Magnesium Alloy</b> H. Watanabe, T. Mukai, K. Ishikawa and K. Higashi	557
<b>The AMC – CAST Alliance for Advanced Magnesium Research and Development</b> G. Dunlop, D.H. StJohn and M.T. Frost	565
<b>Effects of Protective Gases on the Oxidation Behavior of Mg-Ca Base Molten Alloys</b> M.H. Kim, W.W. Park, B.S. You, H. Yanbin and W.C. Kim	575
<b>Effect of Al and Y Additions on the Oxidation Behavior of Mg-Ca Base Molten Alloys</b> B.S. You, M.H. Kim, W.W. Park and I.S. Chung	581
<b>A Study on the Grain Refining Effects of Carbon Inoculation by C<sub>2</sub>Cl<sub>6</sub> addition on AZ31 Magnesium Alloy</b> Q. Jin, J. Eom, S.G. Lim, W.W. Park and B. Yoo	587
<b>Effect of Soluble and Insoluble Zirconium on the Grain Refinement of Magnesium Alloys</b> M. Qian, D.H. StJohn and M.T. Frost	593
<b>Fabrication of Mg Alloy Strips by Strip Casting</b> S.S. Park, J.G. Lee, Y.S. Park and N.J. Kim	599
<b>Continuous Casting of Semisolid Mg-Al-Zn Alloy</b> T. Motegi, E. Yano, N. Wada and Y. Tamura	605
<b>Semi-Solid Processing of Magnesium Alloys</b> D.Y. Chang, H.K. Seok, J.C. Lee and K.S. Shin	611
<b>THIXOMAG<sup>TM</sup>, a Competitive Industrial Thixocasting Process for Magnesium Alloys with Semi-Solid Feedstock Billets</b> J. Collot	617
<b>Investigation of Rheology of Magnesium Semi-Solid Materials by Using a Slit Rheometer</b> C.C. Yang, Y.C. Fann and H. Peng	623
<b>Application of Semi-Solid Forming to Magnesium Alloys with High Al and Zn Contents</b> N. Antara, K. Suzuki, T. Kayuta, S. Kamado and Y. Kojima	629
<b>Cost Effective Particle Reinforced Magnesium Composites</b> S.K. Kim, H.H. Jo, G.S. Cho, K.W. Lee and Y.J. Kim	635
<b>Effect of Ca and Be Additions on High Temperature Oxidation Behavior of AZ91 Alloys</b> B.H. Choi, I.M. Park, B.S. You and W.W. Park	639
<b>Role of Partial Remelting on Thixotropic Structure of AZ91D Mg Alloy in the Semisolid State</b> S.K. Kim and Y.J. Kim	645
<b>Electrorefining of Mg in Molten Salt</b> T. Takenaka, S. Isazawa, Y. Kamo, M. Mishina and M. Kawakami	653
<b>Recovery of Magnesium from Molten Slag by Bubbling Argon though the Melt at Atmospheric Pressure</b> J.D.T. Capochi	659

<b>On-Line Monitoring of Liquid Magnesium using a High Temperature Ultrasonic Probe</b> D. Burhan, I. Ihara, S. Kamado, H. Aso and Y. Kojima	665
<b>Recycling of AZ31 Mg Alloy with High Purity Mg Deposition Layer by Hot Working (Solid Recycling)</b> Y. Chino, A. Yamamoto, H. Iwasaki, M. Mabuchi and H. Tsubakino	671
<b>Preparation of Mg Alloys by Using Molten Salt</b> T. Takenaka, Y. Naka, T. Noichi and M. Kawakami	677
<b>Salt-Heated Furnaces for Refining of Magnesium and Its Alloys: Development of Design and Refining Process</b> I.A. Barannik, I.M. Komelin and I. Sikors'ka	683
<b>Vacuum Distillation Refining and Recycling of Magnesium Alloys</b> M. Inoue, M. Iwai, K. Matsuzawa, S. Kamado and Y. Kojima	691
<b>Solubility of Iron in Pure Magnesium and Cast Structure of Mg-Fe Alloy</b> T. Haitani, Y. Tamura, T. Motegi, N. Kono and H. Tamehiro	697
<b>Manganese-Bearing Particles in Liquid AZ91 Magnesium Alloy</b> Y. Tamura, J. Yagi, T. Motegi, N. Kono and H. Tamehiro	703
<b>Development of High Strength Magnesium Alloys by Rapid Solidification</b> Y. Kawamura and A. Inoue	709
<b>Electron Microscopy Study of Microstructure Modifications in RS P/M Mg<sub>97</sub>Zn<sub>1</sub>Y<sub>2</sub> Alloy</b> M. Nishida, T. Yamamuro, M. Nagano, Y. Morizono and Y. Kawamura	715
<b>Microstructure of High Strength Mg<sub>97</sub>Zn<sub>1</sub>Y<sub>2</sub> Alloys Prepared by Extrusion of Gas-Atomized Powder</b> T. Itoi, T. Seimiya, Y. Kawamura and M. Hirohashi	721
<b>Microstructure of a High-Strength Nanocrystalline Mg-1at.%Zn-2at.%Y Alloy Studied by Atomic-Resolution Z-Contrast STEM</b> E. Abe, Y. Kawamura and A. Inoue	727
<b>Structure and Properties of Rapidly Solidified Mg-Ag-X Ternary Alloys</b> K. Hondo, J. Kaneko, M. Sugamata and M. Kubota	733
<b>Development of High Strength Mg Alloys by MA-HDH P/M Process</b> M. Matsuda, S. Yoshimoto, Y. Kawamura, K. Ishikawa and M. Nishida	739
<b>Solid-State Synthesis of Mg<sub>2</sub>Si Intermetallic Compound via Powder Metallurgy Process</b> K. Kondoh, E. Yuasa and T. Aizawa	745
<b>Structure and Mechanical Properties of Rapidly Solidified Mg<sub>97</sub>Zn<sub>1</sub>RE<sub>2</sub> Alloys</b> Y. Kawamura, T. Morisaka and M. Yamasaki	751
<b>Rapidly Solidified Mg-(Ag, Sc)-X Alloys with High Strength</b> K. Inoue, Y. Kawamura and M. Nishida	757
<b>Development of High Strength Mg Alloys by Mechanical Alloying</b> S. Yoshimoto, M. Matsuda, M. Yamasaki and Y. Kawamura	763
<b>Quality Improvement of Rapidly Solidified Magnesium Alloy by Plastic Processing</b> M. Yoshikawa, M. Kohzu, H. Watanabe and K. Higashi	769
<b>Mechanical Properties and Microstructure of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub> / Magnesium Alloy Composites Prepared by Compo-Casting</b> G. Sasaki, M. Yoshida, O. Yanagisawa, N. Fuyama and T. Fujii	777
<b>In-situ Solid-State Synthesis of Mg<sub>2</sub>Si/MgO/Mg Composites</b> W. Du, K. Kondoh, E. Yuasa, R. Tsuzuki and T. Aizawa	783
<b>Effect of Extrusion Conditions on Properties of Hot Extruded Mg Composite with Mg<sub>2</sub>Si Dispersions via Solid-State Synthesis</b> R. Tsuzuki, K. Kondoh, W. Du, T. Aizawa and E. Yuasa	789
<b>Interfacial Microstructure and Fracture Behavior of SiC Whisker Reinforced Magnesium Matrix Composites</b> M.Y. Zheng, K. Wu, C.K. Yao, S. Kamado and Y. Kojima	795
<b>Tribological Property of Mg Composites via Powder Metallurgy Process</b> H. Muramatsu, K. Kondoh, T. Aizawa and E. Yuasa	801
<b>Creep Behaviour of Magnesium Monolithic Alloys and Composites</b> V. Sklenička, M. Pahutová, K. Kuchařová, M. Svoboda and K.U. Kainer	805
<b>Stress Relaxation in Mg-Al-Alloy AZ31 Reinforced by Ceramic Foam</b> F. Breuting, Y.Y. Li, J. Zeschky, J.S.H. Lo and W. Blum	811

<b>Deformation Processes in Mg-Li-Al Base Composites</b> Z. Trojanová, Z. Drozd, P. Lukáč and S. Kúdela	817
<b>Machining of Fibre Reinforced Magnesium</b> K. Weinert and M. Lange	823
<b>Mechanical Alloying of Magnesium and Mg-Al Alloy with Addition of MnO<sub>2</sub> and Fe<sub>2</sub>O<sub>3</sub></b> A. Yamazaki, J. Kaneko, M. Sugamata and L. Błaż	829
<b>Some Studies on Mg Alloy Reinforced with Ceramic Discontinuous Phases</b> S.K. Thakur, B. Dhindaw, N. Hort and K.U. Kainer	837
<b>Electrochemical Corrosion Studies of Thixomolded AZ91D Alloy in Sodium Chloride Solution</b> I. Nakatsugawa, H. Takayasu, K. Araki and T. Tsukeda	845
<b>Effect of Mg<sub>17</sub>Al<sub>12</sub> Precipitate on Corrosion Behavior of AZ91D Magnesium Alloy</b> Y.J. Ko, D.Y. Chang, J.D. Lim and K.S. Shin	851
<b>Effect of Second Phases on the Corrosion Behavior of Magnesium Alloys</b> D. Eliezer, P. Uzan and E. Aghion	857
<b>Corrosion Behaviour of Magnesium Alloys with RE Additions in Sodium Chloride Solutions</b> E.D. Morales, E. Ghali, N. Hort, W. Dietzel and K.U. Kainer	867
<b>Development of a Knowledge-Based System for the Design of Magnesium Components</b> T. Muster, I. Cole, Y. Durandet, W. Ganther and W. Song	873
<b>Corrosion and Protection of Magnesium Alloy AZ31D by a New Conversion Coating</b> E.H. Han, W.Q. Zhou, D.Y. Shan and W. Ke	879
<b>Permanganate Conversion Coatings for Magnesium Alloys</b> H. Umehara, M. Takaya and S. Terauchi	883
<b>Corrosion Resistance of Polymer-Plated Magnesium Alloys</b> K. Mori, Z.X. Kang, J. Oravec and Y. Oishi	889
<b>Anodic Films Growth on Magnesium and Magnesium Alloys in Fluoride Solutions</b> S. Ono and N. Masuko	897
<b>A New Technique for Surface Modification in Magnesium Alloys by Applying Magnesium Oxide Coating</b> A. Yamamoto and H. Tsubakino	903
<b>Effect of Aluminum Coatings on Corrosion Properties of AZ31 Magnesium Alloy</b> L.H. Chiu, H.A. Lin, C.C. Chen, C.F. Yang, C.H. Chang and J. Wu	909
<b>Corrosion Resistance in Magnesium Alloys and Deposition Coated Magnesium Alloy</b> H. Tsubakino, A. Yamamoto, K. Sugahara and S. Fukumoto	915
<b>Direct Adhesion of PPS to Polymer-Plated Magnesium Alloys</b> K. Mori, Z.X. Kang, J. Oravec and Y. Oishi	921
<b>Cold Coating of Magnesium Base Alloy Films by Ion Beam Sputtering</b> A. Mitsuo and T. Aizawa	927
<b>Microstructural Evolution of the Surface of Mg-Al-Based Alloy by Hydrogen Treatment</b> A. Kamegawa, T. Miyashita, H. Ogasawara, H. Takamura and M. Okada	931
<b>Corrosion Behavior of Rapidly Solidified Mg-Zn-Y Alloy Ribbons</b> M. Yamasaki, K. Nyu and Y. Kawamura	937
<b>Molecular Dynamics Simulation of Triazine Dithiol / MgO Interface</b> N. Hamada, T. Uesugi, H. Torii and K. Higashi	943
<b>Technical Outline of None Chrome Treatment System (Ca-Mn Phosphating) for Magnesium Alloy</b> T. Matsumura and S. Namba	949
<b>Anodizing of Magnesium in Amine - Ethylene Glycol Electrolyte</b> H. Asoh and S. Ono	957
<b>Lining of Magnesium Alloys with Foils Using Shot Peening</b> Y. Harada, H. Kosugi, S. Maki, M. Umemura and E. Nagashima	963
<b>Surface Modification of Magnesium Alloys by Laser Alloying Using Si Powder</b> K. Murayama, A. Suzuki, T. Takagi, S. Kamado, Y. Kojima and H. Hiraga	969
<b>Machinability of Magnesium Alloy in Ultra-Precision Diamond Cutting</b> K. Okuda, T. Tanaka and M. Nunobiki	975
<b>High-Pressure Synthesis of Novel Hydrides in Mg-RE Systems and Their Hydrogen Content (RE = Y, La)</b> H. Takamura, Y. Goto, A. Kamegawa and M. Okada	983

<b>Solid State Synthesis of Non-Equilibrium Mg<sub>2</sub>Co via Bulk Mechanical Alloying</b> T. Aizawa and K. Hasehira	989
<b>Synthesis of MgB<sub>2</sub> from Gas Atomized Mg Alloy Powders and its Superconductivity</b> K. Matsuzaki, K. Hanada, K. Hatsukano and T. Shimizu	995
<b>Porous Bioresorbable Magnesium as Bone Substitute</b> C.E. Wen, Y. Yamada, K. Shimojima, Y. Chino, H. Hosokawa and M. Mabuchi	1001
<b>Behavior of Magnesium in Hank's Solution Aimed to Trabecular Pattern of Natural Bone</b> H. Kuwahara, N. Mazaki, M. Mabuchi, C. Wein and T. Aizawa	1007
<b>Processing and Mechanical Properties of Open-Cell Mg Alloys</b> Y. Yamada, C.E. Wen, Y. Chino, K. Shimojima, H. Hosokawa and M. Mabuchi	1013
<b>Manufacturing of Porous Magnesium Alloy by Pulse Electric Current Sintering Process and Their Compressive Properties</b> H. Okumura, K. Watanabe, S. Kamado and Y. Kojima	1019
<b>Microstructures and Protium Absorption/Desorption Characteristics of Interface-Controlled Mg-LaNi<sub>5</sub> Composite</b> Y. Funayama, S. Yamagiwa, H. Okumura, S. Kamado and Y. Kojima	1025
<b>Fatigue Crack Propagation in Magnesium Single Crystals</b> S. Ando and H. Tonda	1031
<b>Influence of Lithium on hcp Magnesium Alloys</b> F.W. Bach, M. Schaper and C. Jaschik	1037