

Table of Contents

Prospects for the Aluminium Industry B. Legrand	3
Aluminium Structures Used in Aerospace - Status and Prospects- K.H. Rendigs	11
Structure and Property Control of Aerospace Alloys P. Sainfort, C. Sigli, G.M. Raynaud and P. Gomiero	25
Aluminium Alloys for Automotive Application J. Hirsch	33
Alternative Materials for a New Generation of Vehicles N.A. Gjostein	51
Effect of Cavitation Melt Treatment on the Structure Refinement and Property Improvement in Cast and Deformed Hypereutectic Al-Si Alloys G.I. Eskin, Y.P. Pimenov and G.S. Makarov	65
Rapidly Solidified Layers on an AlZn₅Mg₃Cu_{0.8} Alloy J. Lašek, P. Bartuška and B. Major	71
Control of Segregation in Squeeze Cast Al-4.5Cu Binary Alloy G. Durrant, M. Gallerneault and B. Cantor	77
Numerical Method for Analysis of Microporosity Formation in Aluminium Alloy Castings M.L.N.M. Melo, E.M.S. Rizzo and R.G. Santos	83
Indirect Extrusion of Different Al-Si-Powder Alloys K. Müller and T. Teubert	91
The Influence of Particle Dispersions and Processing Route in the Development of Recrystallization Textures in Aluminum Alloys G. Burger, P. Wycliffe, C. Gabryel and D.J. Lloyd	101
Analysis of Flow Behaviour and Texture Evolution of a Particle Hardened Aluminium Alloy in Plane Strain Deformation G. Bermig, A. Bartels, H. Mecking, A. Oscarsson and W.B. Hutchinson	111
Interaction between Iron and Cooling Rate from the Melt on the Dispersoid Distribution in AA 6013 A. Conte and T.H.J. Sanders	119
Advanced Properties of Ultra Fine-Grained Al-Alloys N.K. Tsenev, R. Valiev and I.R. Kuzeev	127
Comparison of Anisotropy and Flow Behaviour in Two AlZnMg Extrusions - Recrystallized versus Nonrecrystallized A. Fjeldly and H.J. Roven	135
Changes of Flow Stress by Plane Strain Compression of Al-Si-Cu Alloys at High Temperature H. Takeuchi, T. Doko, T. Kumazawa and A. Kikuchi	141
Measurements and Evaluation of Strain Rate Sensitivity in Al at Late Stages of Deformation P. Les, M. Zehetbauer and H.P. Stüwe	147
Tensile Properties at Low to High Strain Rates of AlMgSi and AlZnMg Alloys B. Andersson and S.R. Skjervold	153
Mg Effects on the Eutectic Structure and Tensile Properties of Al-Si-Mg Alloys Q.G. Wang and C.H. Cáceres	159
Precipitation Hardening Behavior of SiC Whisker Reinforced Al-Cu Based Alloys Composites S.K. Hong, S.H. Hwang, J.C. Choe, I.M. Park, H. Tezuka, T. Sato and T. Kamino	165
The Effects of Mixed Mode Loading on Intergranular Failure in AA7050-T7651 I. Sinclair and P.J. Gregson	175
A Comparison of the Damage Tolerance of 7010 T7451 and 7050 T7451 A.J. Morris, R.F. Robey, P.D. Couch and E. De los Rios	181
The Effect of Processing on the Fracture Toughness of 8090 T8 Sheet A.J. Morris, S.B. Williams and M.A. Reynolds	187

Toughness Enhancement Based on Fracture Mechanical Simulation of Al-SiC_w Composite T. Kobayashi and H. Toda	193
The Cyclic Deformation Behaviour of Dispersion Strengthened Aluminium Materials at Elevated Temperatures I. Kröpfl and O. Vöhringer	199
Theoretical and Experimental Studies of Galvanic Corrosion between Aluminium and Al-4% Cu Alloys P. Bucaille, R. Oltra and T. Warner	207
The Trivalent Chromium Pretreatment Applied to Aluminium 1050 F. Delaunois, V. Poulain and J.P. Petitjean	213
Microcapsulated Aluminium Powders O.D. Neikov, P.B. Rabin and G.I. Vasiliyeva	219
Solid Phase Welding of Alloy AA6061 and SiC_p Reinforced Alloy AA6061 at Intermediate Temperature T. Yokota, M. Otsuka, T. Haseyama, T. Ueki and H. Tokisue	225
Fatigue Properties of Mechanical Fastening Joints H. Mizukoshi and H. Okada	231
Industrial Applications of Superplastic Forming with Aluminum Alloys E. Gratiot and G. Surdon	239
Advanced Weldable High-Strength Al-Cu-Li Alloy for Aerospace Applications U. Koch, T. Pfannenmüller, V. Davydov, I.N. Fridlyander and P.J. Winkler	243
Advanced Weldable Damage Tolerant AlMgLi Alloy for Aircraft Application I.N. Fridlyander, N.I. Kolobnev, O.E. Grushko and V.G. Davydov	249
Al-Li Alloys for Lower Wings and Horizontal Stabilizer Applications R.J. Rioja, C.J. Warren, M.D. Goodyear, M. Kulak and G.H. Bray	255
Weldable High-Strength Aluminium Alloys Y. Zolotarevsky	263