

CONTENTS

VOLUME I

CASTING

Constituent Phases Formed During Solidification of Al-Fe-Si Alloys - P. LIU and G.L. DUNLOP	3
Macrosegregation in Aluminum Alloy Ingot Cast by the Semicontinuous Direct Chill (DC) Method - H. YU and D.A. GRANGER	17
Observations of Twin Columnar Growth in Aluminum Alloys - K.T. VENKATESWARA RAO, H.R. LAST, D.K. STUCKY and T.H. SANDERS, JR.	31
The Influence of Twin Columnar Grains of the Fracture Behavior of 7050 - K.T. VENKATESWARA RAO and T.H. SANDERS, JR.	49
Evaluation of Grain Refinement in Aluminum - J.L. KIRBY	61
Mechanisms of Eutectic Modification in the Al-Si System - S.Z. LU and A. HELLAWELL	81
Solidification of Aluminum in Presence of Suspended Graphite Particles - S. DAS, R. ASTHANA, and P.K. ROHATGI	95

ALUMINUM ALLOYS – PHYSICAL AND MECHANICAL PROPERTIES

Continuous Strip Casting of Aluminum Alloys on the Hezelett Twin-Belt Caster - CHARLES J. PETRY	111
High Strength Aluminum Alloy for Container End-Stock - EDWARD A. LORIA	133
Study of Mechanism of Aluminum Vacuum Brazing - K. ISHIKAWA and H. KAWASE	141
Effect of Machine Parameters and Composition on the spot Weldability of Al Alloys - T. ZACHARIA and D.K. AIDUN	155
Synthesis, Structure, Properties, and Applications of Cast Al-Ceramic Particle Composites - P.K. ROHATGI, S. DAS and R. ASTHANA	169
Processing and Properties of Aluminum Alloys Reinforced with Saffil Alumina Fibers - R.G. BUCHHEIT, W. RUCH and R.E. WAWNER	181

RAPID SOLIDIFICATION

Undercooling and Rapid Solidification of Aluminum Powders - B.A. MUELLER and J.H. PEREPEZKO	201
Thermal Stability of Al-Fe-Ce Alloys ROBERT E. SWANSON and YOUNG-WON KIM	217
The Microstructure of Rapidly Solidified Al-Si-Mn-Cr Powders - P. LIU, G.L. DUNLOP, and L. ARNBERG	233
Rapid Solidification of Al-Mn Alloys by the Single Roller Method - KOJIRO F. KOBAYASHI, HIROYUKI KAWAURA and PAUL HIDEO SINGU	247
Structural Refinement of Al-Si Alloys by Rapid Solidification - KOJIRO F. KOBAYASHI and PAUL HIDEO SINGU	263

ALUMINUM ALLOYS – PHYSICAL AND MECHANICAL PROPERTIES

Microstructures and Properties of Rapidly Solidified Al-Fe-(Mo/Ce) Alloys - J.W. ZINDEL, R.D. FIELD, P. KURATH and H.L. FRASER	279
Mechanical Properties of Rapidly Solidified Al-4Be Alloys - D.C. VAN AKEN, P. KURATH, and H.L. FRASER	295
The Formation of Microstructures in Rapidly Solidified Hypereutectic Al Alloys Containing Ni or Co - J.T. STANLEY, R.D. FIELD and H.L. FRASER	307
Rational Design of High Temperature Aluminum Alloys - L. ANGERS, Y. CHEN, M.E. FINE, J.R. WEERTMAN and M.S. ZEDALIS	321

PROCESSING

Die Temperatures in Aluminum Extrusions - M. LEFSTAD	341
The Effect of Billet Heat Treatment on Surface Tearing of Extruded AlMgSi Alloys - H. GJESTLAND, A.L. DONS, O. LOHNE and O. REISO	359
Development of Fine Grained 7075-0 Sheet for Aircraft Taper-Rolled Stringer - T. UNO, H. YOSHIDA and Y. BABA	371
Mathematical Modelling of Strip Rolling of Aluminum - K.A. WOODBURY and A.J. BEAUDOIN, JR.	387
The Effect of Processing on the Properties of Al-Li Alloys - R.F. ASHTON, D.S. THOMPSON and F.W. GAYLE	403
Hot Deformation and Dynamic Restoration Processes in a Series of Al-Mg Alloys - M. UEKI, S. HORIE and T. NAKAMURA	419

ALUMINUM ALLOYS – PHYSICAL AND MECHANICAL PROPERTIES

The Hot Working Characteristics of Al-0.65% Fe, and Al-0.5%, Fe-0.5% Co Conductor Alloys - K. CONROD and H.J. McQUEEN 435

NON-HEAT TREATABLE ALLOYS,
TEXTURE AND RECRYSTALLIZATION

The Effect of Second Phase Particles on the Recrystallization Behavior, Texture and Earing Behavior of Strip Cast 3004 Al Alloy - OMAR S. ES-SAID and J.G. MORRIS 451

The Evolution of the Cube Texture Component During Recrystallization of Aluminum - J. HJELEN, E. NES and R. NOIER 471

Effect of Heating Rate and Temperature on Annealing Textures of 3004 Aluminum Alloy - K. FUKADA, M. MIZOUCHI and T. KAJIYAMA 483

Earing and Texture in Alloys AA5052 and AA3004 - B. Andersson and S.E. NAESS. 499

Effect of Very High Strain on the Substructure and Texture of Aluminum - H.J. McQUEEN, J.K. SOLBERG, N. RYUM and E. NES 513

Dynamic Recrystallization During Large Strain Deformation of Commercial Al-Mg-Mn Alloys - KARL LINTERMANN and H.A. KUHN 529

Microstructure and Texture Development During the Recrystallization of a Supersaturated Aluminum-Manganese Alloy - B.A. PARKER, G. WILSON and LYDIA CHOK 545

Microstructural Investigations of Certain Continuous Cast Aluminum Foils - J.I. BENNETCH, R.E. HUGHES and B.R. WARD 561

Structure and Preferred Orientation of Roll-Cast AA 1145 - P.M.B. RODRIGUES, P. FURRER, and B. RADONJIC 575

ALUMINUM ALLOYS – PHYSICAL AND MECHANICAL PROPERTIES

PHASE TRANSFORMATIONS AND PHYSICAL METALLURGY

Recent Understanding of Solid Solution Decomposition on Quenching and Its Influence on Precipitation During Aging (7075 Alloys) - P. ARCHAMBAULT, F. MOREAUX and G. BECK	589
Differential Scanning Calorimetry of Aluminum Alloys - J.M. HOWE	603
A Preliminary Study of Al-Li Alloys Using Atom-Probe Field Ion Microscopy and Transmission Electron Microscopy - K. HONO, T. ABE, D.R. HESS, H.W. PICKERING, P.R. HOWELL, Y. HASEGAWA, T. SAKURAI, N. SANO and K. HIRANO	621
An Atom-Probe Field Ion Microscopic Study of G.P. Zones in Al-Cu Alloys - K. HONO, T. HASHIZUME, Y. HASEGAWA, T. SATOH, K. HIRANO and T. SAKURAI	635
Atomic-Resolution Microscopy of Precipitate Growth in Al Alloys - J.M. HOWE and R. GRONSKY	647
Development of an Experimental Wrought Aluminum Alloy for Use of Elevated Temperatures - I.J. POLMEAR	661