

Table of Contents

Preface

Thermomechanical Testing and Precipitation Modelling of Al-Mg-Si Alloys for Hot Forming Applications

O.R. Myhr, A.J. Tomstad, C.D. Marioara, T. Børvik and O. Hopperstad 1

Microstructure Evolution of Twin-Roll Cast and Hot-Rolled WZ73 Alloy during the Finishing Heat-Treatment

F. Ueberschär, M. Ullmann and U. Prah 7

Anisotropic Mechanical Property-Induced Ductilization (AMID) – A New Mechanism to Simultaneously Improve the Strength and Ductility of Multiphase Alloys

K. Hagihara, T. Tokunaga, M. Yamasaki and M. Sugita 13

Development of Non-Equimolar CoCrCuFeNi High Entropy Alloys for Aerospace Brazing

S. Ross, D. Butcher, D. Williams, C. Goddard, P. Cookson, S. Mehraban and N. Lavery 19

Effect of Heat Treatment and Rolling Process on Microstructure and Deformation Behavior in Al-Si Alloy

T. Tokunaga, R. Hirono, T. Mayama and K. Hagihara 27

Effect of Subgrain Boundary Distributions on Extra-Hardening of SPD-Processed Al-3%Mg Alloy

T. Morishige, A. Kozaki and T. Tanaka 33

Creep Strength of AlCoCrFeNi High-Entropy Alloy Fabricated by Spark Plasma Sintering

N. Ohgi, R. Honda, L. He, M. Kawabata, H. Fujiwara and T. Itoh 39

A Unique High-Temperature Deformation Mechanism in a CrMnFeCoNi Alloy

H. Kawano, S. Onoue, M. Kawabata, H. Fujiwara and K. Ameyama 45

Visualization of Dynamic Deformation Behavior of Al-Mg Alloys Using Electronic Speckle Pattern Interferometry

Y. Takanezawa, T. Sasaki and S. Yoshida 51

Effect of Zinc Content on the Hitting Sound Characteristics of Brass

R. Naganuma, T. Kato and M. Furui 57

The Effect of Intensification Pressure on the Microstructure of Non-Heat Treated HPDC AlSi9MnVZr Alloy

S. Akhtar and S.M. Xiong 63

Microstructural Characterization and Analyses of the Damage in a Ti-Based Alloy by X-Ray Computed Microtomography

J.D. Moreno-Martinez, E.O. Avila-Davila, I. Monroy-Sanchez, M. Moreno-Rios, N. Cayetano-Castro, V.M. Lopez-Hirata, J.E. Resendiz-Hernandez and J.L. Cuevas-Hernandez 69

Damage Development in Aluminum 2050 Alloy during High-Temperature Loading Studied by Synchrotron Diffraction and Tomography

G.F.C. Macieira, P. Lhuissier, L. Salvo and H. Fang 77

Microstructure and Young's Modulus of (TiZr)_{2-x}(NbTaMo)_x Bio-High Entropy Alloys

M. Todai, N. Takahashi, N. Tanaka, D. Tanaka, T. Nagase, A. Matsugaki and T. Nakano 85

Experimental and Numerical Investigation of Mechanical Properties of Laser-Welded Additively Manufactured Inconel 718

M. Khedr, A. Khosravi, A.W. Abdelghany, A. Järvenpää and A.S. Hamada 91

Cyclic Deformation Mechanisms in a 3D-Printed High-Entropy Alloy

D. Bajaj, A. Feng, S.J. Qu, D.Y. Li and D.L. Chen 99

In Situ Alloyed Refractory High Entropy Alloy by Laser Powder Bed Fusion

Y.S. Kim, O. Gokcekaya, R. Ozasa and T. Nakano 105

Low Cycle Fatigue Response of Additive Manufactured Advanced Structural Alloys: Insights into High Performance Alloy Fatigue Life

N.C. Santhi Srinivas, K. Chattopadhyay, S. Vasu, K.R. Pavan and J. Vishwakarma 111

Comparison of Pd-42Cu-10Ni and Pd-30Cu-29.5Ag-0.5Zn as Probe Material in Interfacial Reaction with Sn

R. Hashizume, T. Kobayashi, I. Shohji, T. Hoshino, K. Sato, S. Kobayashi and N. Odani 117

Elevated Temperature Mechanical Properties of Harmonic Structure Designed AlCoCrFeNi High Entropy Alloy by Mm/SPS Process

R. Hori, R. Honda, M. Kawabata, T. Kuno, L. He, K. Ameyama, T. Itoh and H. Fujiwara 123

Influence of Hierarchical Structure on Mechanical Properties of Additive Manufactured IN718 Alloys

K. Yamashita, K. Cho, T. Saito, T. Sasaki, K. Sawaizumi, M. Okugawa, Y. Koizumi, T. Nakano and H.Y. Yasuda