

Table of Contents

Preface

Improved Mapping of Yield Locus Distortion through a Strain-Dependent Calibration of the Barlat Yld2000-2d Yield Criterion M. Rentz and M. Merklein	1
A Novel Approach for Determining the Bauschinger Effect in Dual-Phase Steel Sheets with Tensile-Compression Tests A. Häckel, D. Naumann and M. Merklein	11
Numerical Quantification of Structure-Property Relations in DP800 - Influence of Phase Material Models in RVE N.C. Fehlemann and S. Münstermann	19
Empirical Modelling of the Cold Crystallization of PLA G.J. El Hajj Sleiman, E. Labalec and G. Colomines	31
Laser-Induced Solid-State Foaming of HIPed Ti6Al4V-ELI Alloy P. Guglielmi, A. Cusanno, A. Piccininni, E. Fulco, D. Sorgente and G. Palumbo	39
1D Stress Evolution Prediction via Thermodynamically-Informed Neural Networks A. Fallahnejad, E.S. Perdahcioglu and T. van den Boogaard	51
Deriving Macroscopic Damage Properties by Micromechanical Modeling of DP1000 M. Neite and S. Münstermann	63
Texture Data Preparation for Finite Element Simulations of Puncture Tests: Insights from the VPSC Approach A.C. Ott, L. Schwarzmeier, J. Kronsteiner, N.P. Papenberg and T. Antretter	75
Modeling Transient Temperature-Driven Microstructure Evolution in Inconel 718 during Hot Forming N. Elekyabi, H. Brüggemann, E. Scharifi and J. Lian	85
Quantifying Grain Boundary and Orientation Effects on Copper under Compression: A Crystal Plasticity Finite Element Approach M.B. Paçacı and H. Darendeliler	97
Experimental Study on the Relationship between Cooling Rate, Secondary Dendrite Arm Spacing and Tensile Properties in Aluminum Casting T. Ahn, J. Lee, J. Lee and J.W. Yoon	111
Predictive Modeling of 42CrMo4 Hardness after Two-Step Heat Treatment Using Symbolic Regression J. Albers, F. Dittrich and S. Härtel	121
How to take the Lüders Plateau into Account in the Formability Prediction of Steel Sheets X. Lemoine	137
Microscale to Macroscale Analyses of Superplasticity of Ti-6242S Titanium Alloy M. Arowolo, V. Velay, V. Vidal and M. Dehmas	145
Study on the Effects of Grain Shape, Size and Size Distribution on the Mechanical Behavior of Metals R. Bocan, E.S. Perdahcioglu and T. van den Boogaard	163
Investigation of Friction Coefficient at Stack Compression Tests M.L. Kölös, I. Nagy-Gombai, G. Kalácska and G.J. Beres	173
Mechanical Performance of a Steel-Polymer Biphase Lattice Structure E. Mancini, A. Ciccarella, A. Di Giuliano, L. Micarelli, G. Dell'Avvocato and K. Gallucci	181
Further Developments of Hill-Gotoh Theory of Anisotropic Sheet Metal Plasticity W. Tong	189
A Compact Micromechanical Model for the Elastic-Viscoplastic Deformability of PLA-Hemp Biocomposites N. Niang, S. Holopainen, T. Barrière, V. Placet and X. Gabrion	197
Modeling the Influence of Material Variabilities on the Forming and Failure Behavior of PP/PE Cores in Metal-Polymer-Metal Sandwich Sheets J. Pusicha and J. Buhl	207