

# Table of Contents

## Preface

<b>Electroplasticity for Sustainable Metal Forming: A Comparative Energy Assessment</b> L. Benvenuto, E. Cozzolino, A. Testa, C. Mandolino, A. Simeone, E. Lertora, L. Settineri and A. Astarita	1
<b>Environmental Impact Assessment of Ti6Al4V Chips Recycling Using Shear Assisted Processing and Extrusion (ShAPE)</b> P. Hosseini and J.R. Duflou	9
<b>Processability of Recycled Polypropylene for More Sustainable Pellet-Based 3D Printing</b> D. Peymani and M. Strano	21
<b>Reuse of Fiber Reinforced Polymer Waste in MSLA 3D Printing: Mechanical Properties and Sustainability Assessment</b> I. Bianchi, M. Di Pietro, A. Forcellese, C. Mignanelli, M. Simoncini and T. Verdini	29
<b>Investigation of Microstructure Evolution during AA6082 Chips Recycling through Friction Consolidation</b> U. Aziz, U.F.H. Suhuddin, L. Rath, L.F. Schröder, V. Schmidt and B. Klusemann	41
<b>Climate Change Impact of Innovative Structural Aluminium Reinforced Concrete, a Case Study in Norway</b> A.L. Tabosa da Silva, A.D. La Rosa, G. Ringen and X. Ma	49
<b>Sustainability-Driven Business Model in Mold Manufacturing: A Multi-Criteria Comparison between Conventional and Additive Technologies</b> F. Borda, V. Basile, F. Gagliardi and L. Filice	61
<b>Green Hydrogen vs Conventional Energy Sources: A LCA Case Study of Aluminum Casting</b> I. Bianchi, P. Forcellese, G. Fratini, T. Lamberti, T. Mancina and M. Simoncini	73
<b>Overcoming Copper Limitations in Scrap Recycling via Twin-Roll Casting</b> D. Czempas, J. Lian and D. Bailly	83
<b>Recycling of Plastic Waste by Integrating Extrusion and Additive Manufacturing Techniques: Lessons Learned from RELIVE Project</b> P. Carlone, M.E. Di Nardo, R. Mele, F. Borda, F. Gagliardi, F. Napolitano and P. Russo	93
<b>A Novel One-Shot Forming Process Integrating Hot Form Quench (HFQ) of High-Strength Aluminium for Fibre–Metal Laminate (FML) Panel Parts</b> C. Gao, H. Wu, B. Blackman and N. Li	105
<b>On the Effect of Electric-Pulsed Treatments on the Formability and Sustainability of Titanium Alloy Reshaping</b> E. Cozzolino, D. de Fazio, P. De Sio and A. Astarita	113
<b>Productivity and Quality Trade-Offs in Aluminum Extrusion: Towards Circularity Tolerant Process Windows</b> Y. Solomon, D. Hemyari and S.A. Grammatikos	125
<b>Comparing Different Sheet Metal Forming Processes for Reshaping Purposes</b> A. Piccininni, G. Ingarao, L. Barcellona, R. Puleo, A. Cusanno, F. Micari and G. Palumbo	135
<b>Material Transition by Friction Induced and Continuous Solid-State Recycling of Aluminum Scrap</b> S. Gabsa and W. Homberg	147
<b>Comparative Life Cycle Assessment of Industrial Zn and Zn-Al Hot-Dip Galvanizing Processes for Steel Wire Production</b> M. Carta, P. Buonadonna, S. D'Angelo, P. de Bernardinis, G. Derosas and M. El Mehtedi	155
<b>Ready for Circular Manufacturing? Metal Forming Processes Studies and Research Agenda</b> P. Frohn-Sörensen, A. Aslanidis, M. Geueke and B. Engel	165
<b>Increasing Sustainability in Open-Die Forging by Means of Process Adaption and Innovation</b> D. Bailly, M. Gouverneur and J. Lian	179
<b>Numerical-Experimental Study of Delamination in Crystalline Photovoltaic Panels to Support Efficient Recycling</b> A. Sposato, G. de Martino, G. Stigliano, C. Cignali, M. Dassisti and D. Umbrello	191