

Table of Contents

Preface

Mechanical Evaluation of 6060 Aluminum Alloy under Elevated Extrusion Ram Speed Using Liquid Nitrogen Die Cooling E. Giarmas, E.K. Tzimtzimis, K. Tsongas and D. Tzetzis	1
An Experimental Investigation of the Effect of Compression Calibration on the Ductility of AA6061 Extrusions M.C. Uzun and T. Welo	15
Numerical Investigation of Round Profile Production: A Fem-Based Comparison between Friction Stir Extrusion and Conventional Extrusion C. Acerbi, M. Negozio, A.H.A. Lutey, M. Felci, U.F.H. Suhuddin, H.S. Rana, B. Klusemann and S. Bocchi	25
Compensating Property Fluctuations in Cold Extrusion Using Adaptive Dies C. Siedbürger and P. Groche	35
Lightweight Battery Housings from Thin-Walled, Large-Scale Aluminum Profiles by Hot Extrusion O. Schulz, S. Wurth, A. Selvaggio, J. Gebhard, Y.P. Korkolis, P. Bieker and T. Kloppenborg	51
Calibrating a Lode-Parameter-Dependent Damage Evolution Equation to Cold Extrusion Experiments R. Gitschel, A.E. Tekkaya and Y.P. Korkolis	63
Effect of Chemical Composition on Hot Extrudability and Tribological Behavior of 7000 Series Aluminum Alloys S. Ngermbamrung, K. Dohda, T. Funazuka, J. Oshima and T. Shiratori	73
Using Tungsten Inert Gas Welding Equipment to Locally Heat Tubes and Achieve Inhomogeneous Thickness in Tube Sinking Processes L.I. Besong and J. Buhl	83
Charge Weld Evolution in Profile Extrusion: Variability across Billets and Multi-Profile Designs I. Kniazkin, I. Kulakov and N. Biba	93
Development of a System for Ultrasonic Die Oscillations during Extrusion of Aluminum Hollow Profiles T. Thomas, M. Negendank, N. Laengst, V. Merklinger, J. Maier and S. Mueller	109
Detection of Charge Welds in Lateral Angular Co-Extrusion Using Non-Destructive Testing A. Verschinin, F.P. Schäfer, N. Mohnfeld, H.J. Maier, J. Uhe, C. Klose and S. Barton	121
Comparative Characterization through Torsion Tests of Primary and Secondary Aluminum Alloys for the Extrusion Process N. Lai, S. Di Donato, L. Donati, R. Pelaccia, B. Reggiani and M. Negozio	133
Transient Thermal Analysis of Multiple Extrusion Runs with Nitrogen Cooling by Means of Qform Code R. Pelaccia, S. Di Donato, M. Negozio, N. Lai, B. Reggiani and L. Donati	151
Numerical Data-Driven Modelling of Modified Samanta Process for Cold Extrusion of Gears T. Deliktas, M. Görz, A. Schenek, M. Speth and M. Liewald	165