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Nota di contenuto	Advances on Hot Extrusion and Simulation of Light Alloys; Preface; Committees; Table of Contents; I. Keynotes; Combined Numerical Simulation and Microstructure Characterization for Prediction of Physical Properties in Extruded Aluminum Alloys; Towards Predictive Control of Extrusion Weld Seams: An Integrated Approach; II. Extrusion Benchmark; Extrusion Benchmark 2009 Experimental Analysis of Deflection in Extrusion Dies; III. Microstructure and Heat Treatment; Physically Based Microstructure Modelling of AA6082 during Hot Extrusion An Assessment of the Grain Structure Evolution during Hot Forward Extrusion of Aluminum Alloy 7020Modeling and Simulation of Microstructure Evolution in Extruded Aluminum Profiles; Simulation of the Quench Sensitivity of the Aluminum Alloy 6082; Simulation of Gas and Spray Quenching during Extrusion of Aluminium Alloys; An Approach to Simulate Shape Distortion due to Cooling in Aluminum Extrusion; Analysis of Polypropylene Deformation in a 135° ECAE Die: Experiments and Three-Dimensional Finite Element Simulations; IV. Seam Welds and Composite Extrusion

Analysis of Joint Quality along Welding PlaneAccurate Welding Line Prediction in Extrusion Processes; Simulation of Porthole Die Extrusion Process Comparing NEM and FEM Modelling; Numerical Analysis of Aluminum Alloys Extrusion through Porthole Dies; Simulation of the Co-Extrusion of Hybrid Mg/Al Profiles; Effect of Tube Wall Thickness in Joining of Aluminum Tube and Holed Rib by Extrusion; Numerical and Experimental Investigations of the Production Processes of Coextruded Al/Mg-Compounds and the Strength of the Interface
The Use of Extruded Profiles as Filling Material in Friction Stir Welding (FSW)V. Material Flow and Constitutive Equations; Analysis of Metal Flow of Aluminum through Long Choked Die Channels; Friction in Double Action Extrusion; A New Cone-Friction Test for Evaluating Friction Phenomena in Extrusion Processes; Modelling of Thermo-Mechanical Behaviour of Magnesium Alloys during Indirect Extrusion; Numerical Analysis of Four-Hole Extrusion of Aluminum Alloys; Computer-Aided Simulation of Metal Flow through Curved Die for Extrusion of Square Section from Square Billet
Three Dimensional Upper Bound Modelling for Extrusion of Round-to-Octagon Section Using Linearly Converging DieVI. Dies and Tools; Measuring the Deformation of a Flat Die by Applying a Laser Beam on a Reflecting Surface; Creep-Fatigue Interaction in the AISI H11 Tool Steel; FEM-Assisted Design of a Multi-Hole Pocket Die to Extrude U-Shaped Aluminum Profiles with Different Wall Thicknesses; Localization of the Shear Zone in Extrusion Processes by Means of Finite Element Analysis
A Case Study to Solve the Problem of Wall Thickness Attenuation during Extrusion to Produce a Complex Hollow Magnesium Profile

Sommario/riassunto

This special collection comprises 36 peer-reviewed papers giving an insight into the latest advances in extrusion technology and its simulation. The papers cover a wide range of topics and are grouped into the categories of: benchmark, microstructure, seam welds and composite extrusion, material flow and constitutive equations, dies and tools and process control and optimization. However, many other topics, such as new materials (magnesium and its composites) and new composite profiles, are covered. In particular, the benchmark section is aimed at exploiting FEM code capabilities and users ex