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| | Descrizione fisica | 1 online resource (239 p.) |
| | Collana | Key engineering materials, , 1013-9826 ; ; volume 367 |
| | Altri autori (Persone) | TomesaniLuca<br>DonatiLorenzo |
| | Disciplina | 671.34 |
| | Soggetti | Extrusion process<br>Light metal alloys - Extrusion<br>Simulation methods<br>Electronic books. |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Note generali | "Presented at the conference, give a very representative snapshot of the modelling activities for processes involving extrusion"--Pref. |
| | Nota di bibliografia | Includes bibliographical references and indexes. |
| | Nota di contenuto | Advances on Extrusion Technology and Simulation of Light Alloys; Committees; Preface; Table of Contents; I. Extrusion Benchmark; Extrusion Benchmark 2007 - Benchmark Experiments: Study on Material Flow Extrusion of a Flat Die; II. Keynotes; Modifications of the Extrusion Process of Magnesium Alloys for Improved Mechanical Properties; Experimental Techniques to Characterize Large Plastic Deformations in Unlubricated Hot Aluminum Extrusion; Innovative Methodologies for the Simulation of Static Recrystallisation during the Solution Soaking Process of Shape Extrusion<br>III. Material Flow and Constitutive EquationsFlow Front Tracking in ALE/Eulerian Formulation FEM Simulations of Aluminium Extrusion; Numerical Optimization of Bearing Length in Composite Extrusion Processes; Recent Developments in the Manufacture of Complex Components by Influencing the Material Flow during Extrusion; FE Simulation of Extrusion to Produce a Thin-Walled Wide Profile through a Spreading Pocket Die; Aluminum Rod Extrusion and Material Modeling; Hot Workability and Constitutive Equations of ZM21 |

Magnesium Alloy; Constitutive Models for AZ31 Magnesium Alloys; IV. Microstructure

Insights to Extrusion from Finite Element ModelingStudy on Thixo-Extrusion of Semi-Solid Wrought Magnesium Alloy; Microstructure Prediction of Hot-Deformed Aluminium Alloys; Application of Adaptive Mesh and ALE Method in Simulation of Extrusion of Aluminum Alloys; V. Seam Welds and Process Optimization; Seam Welds Modeling and Mechanical Properties Prediction in the Extrusion of AA6082 Alloy; A Laboratory Scale Equipment to Relieve Force and Pressure in Cold Extrusion of Lead Hollow Components

Analysis of Metal Flow through a Porthole Die to Produce a Rectangular Hollow Profile with Longitudinal Weld SeamsSimulation-Based Design of Ram Speed Profile for Isothermal Extrusion; Input Parameters Determination for Predicting Ram Speed and Billet Temperature for the First Billet; VI. Dies and Tools; Creep and Fatigue Damage in Hot Work Tools Steels during Copper and Aluminium Extrusion; Microscopic Examination of the Fracture Surfaces of an H 13 Hot Extrusion Die due to Failure at the Initial Usage Stage

Simulation of Direct Extrusion Process and Optimal Design of Technological Parameters Using FEM and Artificial Neural NetworkNumerical Simulation of Combined Forward-Backward Extrusion; Mechanical Solutions for Hot Forward Extrusion under Plane Strain Conditions by upper Bound Method; Different Possibilities of Process Analysis in Cold Extrusion; A New Low Friction Die Design for Equal Channel Angular Extrusion; Modeling Approach for Determination of Backward Extrusion Strain Energy on AlCu5PbBi; Keywords Index; Authors Index

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| Sommario/riassunto | This collection offers a fully representative snapshot of modelling activities as applied to processes involving extrusion. It covers a wide range of topics, grouped into the categories: benchmark, keynotes, material flow and constitutive equations, microstructure, seam welds and process optimization, dies and tools. The core intent of the collection was to exploit FEM code capabilities and expert-users' knowledge for the purpose of simulating an industrial extrusion process. This work is sure to inspire similar future studies |