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Nota di contenuto	Part 1: Magnesium Technology 2017: Keynote Session I -- Multi-scale Investigation on Yield "Symmetry" and Reduced Strength Differential in an Mg-Y Alloy -- Targeting High Impact R&D for Automotive Magnesium Alloys -- Magnesium Development as a Lightweight Material – In Competition with Other Structural Materials -- The Continued Quest for Low-Temperature Formability in Mg Alloys: Historical Developments and Future Opportunities -- Part 2: Magnesium Technology 2017: Alloy Development -- Using the Crystal Plasticity Approach to Parse the Effects of Alloying and Aging on the Mechanical Behavior of Wrought Mg Alloys -- Development of high-strength high-speed-extrudable Mg-Al-Ca-Mn alloy -- Development of ultra-high strength and ductile Mg-Gd-Y-Zn-Zr alloys by extrusion with forced-air cooling -- Effect of Extrusion Ratio on Microstructure and Resulting Mechanical Properties of Mg Alloys with LPSO Phase -- Mechanically Alloyed Magnesium Based Nanostructured Alloy Powders for Stent Applications -- Combined Effects of Grain Size Refinement and Dynamic Precipitation on Mechanical Properties of a New

Magnesium -- Alloy -- Machinability Investigation in Micro-milling of Mg based MMCs with Nano-sized Particles -- Part 3: Magnesium Technology 2017: Solidification and Processing I -- Microsegregation in High Pressure Die Cast Mg Alloys -- Numerical simulations of TRC equipped with a core -- Growth of Al₈Mn₅ intermetallic in AZ91 -- Influence of CaO grain refiner addition on the microstructure and mechanical properties of as-cast Mg alloys -- Grain refinement of Mg and its alloy by inoculation of in-situ MgO particles -- Numerical study of magnesium production by Pidgeon process and pre-prepared pellets silicothermic process: comparison of heat transfer -- On the age hardening response of aluminum containing magnesium sheets with zinc or manganese (AZ- and AM series alloys) -- Performance evaluation of high-pressure die-cast magnesium alloys -- Simulation Study on Direct Desulfurization of Molten Iron by Magnesium Vapor -- Part 4: Magnesium Technology 2017: Mechanical Behavior: Twinning, Plasticity, Texture, and Fatigue I -- Twinning super dislocations to help understand strength -- Basal Dislocation Transmutation through {1012} Twin Boundaries -- Ductility Enhancement in Mg alloys by Anisotropy Engineering -- Modeling the effect of alloying elements in magnesium on deformation twin characteristics -- Simulating Discrete Twin Evolution in Magnesium using a Novel Crystal Plasticity Finite Element Model -- The effect of {10-12} twin boundary on the evolution of defect substructure -- Part 5: Magnesium Technology 2017: Solidification and Processing II -- Processing of Mg-sheet via Twin Roll Casting -- Effects of Mn and Zn Solutes on Grain Refinement of Commercial Pure Magnesium -- Experimental investigation of continuous magnesium production by carbothermal reduction -- Precipitation behavior of Mg-Al-Sn-Zn(-Na) alloys -- Study on the Direct Oxidation Thermal Decomposition of Magnesium Chloride byproduct in the Sponge Titanium -- Thermal decomposition kinetics of pre-prepared pellets for the novel silicothermic process -- Thermal Stability of Cryomilled Mg Alloy Powder -- Thermomechanical Processing of Thixomolded Alloys -- Part 6: Magnesium Technology 2017: Mechanical Behavior: Twinning, Plasticity, Texture, and Fatigue II -- Dynamic behavior of an AZ31 alloy under varying strain rates and stress triaxialities -- Enhancing the tensile response of magnesium through simultaneous addition of aluminium and alumina nanoparticulates -- Effect of solutes additions on the microstructure and mechanical properties of cast Mg-Al based alloys -- Enhanced mechanical properties of extruded Mg-9mass%Al-1mass%Zn-2mass%Ca alloy -- Influence of strain path change on the microstructure and mechanical properties of duplex Mg-Li alloy -- Mechanical Properties and Deformation Mechanism of Mg-Y Alloy with Various Grain Sizes -- Microstructure and Mechanical Properties of High Pressure Die Cast Mg-Al-Sn-Si Alloys -- Microstructure and mechanical properties of an extruded Mg-1.58Zn-0.52Gd alloy -- Modelling Magnesium Alloys for Improved Isotropic and Symmetric Yield Behaviour -- Part 7: Magnesium Technology 2017: Solidification and Processing III and Magnesium-Rare Earth Alloys I -- Scaled-Up Fabrication of Thin-Walled ZK60 Tubing using Shear Assisted Processing and Extrusion (ShAPE) -- Biocompatible Magnesium Alloy ZNdK100 – Adaptation of Extrusion Parameters to Tailor the Mechanical Properties to Different Implant Applications -- Characterization of Semi-closed Die-Forged ZK60 Mg Alloy Extrusion -- Optimization of Nitrogen bubbling conditions for extruded Mg alloy with balanced mechanical properties -- Effects of Gadolinium and Neodymium Addition on Young's Modulus of Magnesium-based Binary Alloys -- Aging behavior of Mg alloys containing Nd and Y -- Variation of Rare Earth Elements in the

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emission -- Part 13: In-situ Methods for Unraveling Structure-Property Relationships in Light Metals: Diffraction and Other Novel Methods -- Structural evolution of metals at high temperature: Complementary investigations with neutron and synchrotron quantum beams -- Advanced Aluminum Alloys Development and In-Situ Fitness-for-Service Testing in Automotive Lightweighting -- In-situ X-ray Synchrotron Profile Analysis during High Pressure Torsion of Ti -- The Effect of Grain Refinement on Hot Tearing in AZ91D Magnesium Alloys -- Formability of Magnesium Alloy AZ31B from Room Temperature to 125C under Biaxial Tension -- In-situ real-time monitoring of aging processes in an aluminum alloy by high-precision dilatometry -- Effect of the Zn content on the compression behaviour of Mg5Nd(Zn): an in situ synchrotron radiation diffraction study.

Sommario/riassunto

The Magnesium Technology Symposium, the event on which this collection is based, is one of the largest yearly gatherings of magnesium specialists in the world. Papers represent all aspects of the field, ranging from primary production to applications to recycling. Moreover, papers explore everything from basic research findings to industrialization. Magnesium Technology 2017 covers a broad spectrum of current topics, including alloys and their properties; cast products and processing; wrought products and processing; forming, joining, and machining; corrosion and surface finishing; ecology; and structural applications. In addition, there is coverage of new and emerging applications.
