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Magnesium Fabrication

Magnesium FormingMagnesium Sand Casting; Magnesium Heat Treating; Magnesium Machining; Magnesium Joining; Magnesium Corrosion Protection; BERYLLIUM; Beryllium Metallurgical

Considerations; Beryllium Alloys; Beryllium Powder Metallurgy; Beryllium Fabrication; Beryllium Forming; Beryllium Machining; Beryllium Joining; Aluminum-Beryllium Alloys; Summary; References; Titanium; Metallurgical Considerations; Titanium Alloys; Commercially Pure Titanium; Alpha and Near-Alpha Alloys; Alpha-Beta Alloys; Beta Alloys; Melting and Primary Fabrication; Forging; Directed Metal Deposition; Forming

Superplastic FormingHeat Treating; Stress Relief; Annealing; Solution Treating and Aging; Investment Casting; Machining; Joining; Welding; Brazing; Summary; Recommended Reading; References; High Strength Steels; Metallurgical Considerations; Medium Carbon Low Alloy Steels; Fabrication of Medium Carbon Low Alloy Steels; Heat Treatment of Medium Carbon Low Alloy Steels; High Fracture Toughness Steels; Maraging Steels; Precipitation Hardening Stainless Steels; Summary; Recommended Reading; References; Superalloys; Metallurgical Considerations; Commercial Superalloys; Nickel Based Superalloys Iron-Nickel Based SuperalloysCobalt Based Superalloys; Melting and Primary Fabrication; Powder Metallurgy; Powder Metallurgy Forged Alloys; Mechanical Alloying; Forging; Forming; Investment casting; Polycrystalline Casting; Directional Solidification (DS) Casting; Single Crystal (SC) Casting; Heat Treatment; Solution Strengthened Superalloys; Precipitation Strengthened Nickel Base Superalloys; Precipitation Strengthened Iron-Nickel Base Superalloys; Cast Superalloy Heat Treatment; Machining; Turning; Milling; Grinding; Joining; Welding; Brazing; Transient Liquid Phase (TLP) Bonding Coating Technology

Sommario/riassunto

The rapidly-expanding aerospace industry is a prime developer and user of advanced metallic and composite materials in its many products. This book concentrates on the manufacturing technology necessary to fabricate and assemble these materials into useful and effective structural components. Detailed chapters are dedicated to each key metal or alloy used in the industry, including aluminum, magnesium, beryllium, titanium, high strength steels, and superalloys. In addition the book deals with composites, adhesive bonding and presents the essentials of structural assembly. This
