

1. Record Nr.	UNINA9911006611703321
Autore	Campbell F. C (Flake C.)
Titolo	Manufacturing technology for aerospace structural materials / / F.C. Campbell
Pubbl/distr/stampa	Amsterdam ; Kidlington, : Elsevier, 2006
ISBN	9786610631995 9781280631993 1280631996 9780080462356 0080462359
Edizione	[1st ed.]
Descrizione fisica	1 online resource (617 p.)
Collana	Aerospace engineering materials science
Disciplina	629.1342
Soggetti	Aerospace engineering - Materials Manufacturing processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Contents; Preface; Introduction; Aluminum; Magnesium and Beryllium; Titanium; High Strength Steels; Superalloys; Composites; Adhesive Bonding and Integrally Cocured Structure; Metal and Ceramic Matrix Composites; Assembly; Summary; References; Aluminum; Metallurgical Considerations; Aluminum Alloy Designation; Aluminum Alloys; Melting and Primary Fabrication; Rolling Plate and Sheet; Extrusion; Heat Treating; Solution Heat Treating and Aging; Annealing; Forging; Forming; Blanking and Piercing; Brake Forming; Deep Drawing; Stretch Forming; Rubber Pad Forming; Superplastic Forming CastingSand Casting; Plaster and Shell Molding; Permanent Mold Casting; Die Casting; Investment Casting; Evaporative Pattern Casting; Casting Heat Treatment; Casting Properties; Machining; High Speed Machining; Chemical Milling; Joining; Welding; Gas Metal and Gas Tungsten Arc Welding; Plasma Arc Welding; Laser Welding; Resistance Welding; Friction Stir Welding; Chemical Finishing; Summary; Recommended Reading; References; Magnesium and Beryllium; MAGNESIUM; Magnesium Metallurgical Considerations; Magnesium Alloys; Wrought Magnesium Alloys; Magnesium Casting Alloys;

Magnesium Fabrication

Magnesium Forming; Magnesium 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 Forming; Heat 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 Superalloys; Cobalt 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
