

Manufacturing Technology Foundry Forming And Welding P N Rao

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A Textbook of Production Technology (Manufacturing Processes) P C Sharma 2007
The printing of the seventh edition of the book has provided the author with an opportunity to

completely go through the text.Minor Additions and Improvements have been carried out,wherever needed.All the figure work has been redone on computer,with the result that all the figures are clear and sharp.The author is

really thankful to M/s S.Chand & Company Ltd. for doing an excellent job in publishing the latest edition of the book.

Materials Michael F. Ashby 2009-11-20 Materials: Engineering, Science, Processing and Design, Second Edition, was developed to guide material selection and understanding for a wide spectrum of engineering courses. The approach is systematic, leading from design requirements to a prescription for optimized material choice. This book presents the properties of materials, their origins, and the way they enter engineering design. The book begins by introducing some of the design-limiting properties: physical properties, mechanical properties, and functional properties. It then turns to the materials themselves, covering the families, the classes, and the members. It identifies six broad families of materials for design: metals, ceramics, glasses, polymers, elastomers, and hybrids that combine the properties of two or more of the others. The book presents a design-led strategy

for selecting materials and processes. It explains material properties such as yield and plasticity, and presents elastic solutions for common modes of loading. The remaining chapters cover topics such as the causes and prevention of material failure; cyclic loading; fail-safe design; and the processing of materials. * Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications * Highly visual full color graphics facilitate understanding of materials concepts and properties * Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process * Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information NEW TO THIS EDITION: "Guided Learning" sections on crystallography, phase diagrams and phase

transformations enhance students' learning of these key foundation topics Revised and expanded chapters on durability, and processing for materials properties More than 50 new worked examples placed throughout the text

Manufacturing Processes and Materials, Fourth Edition George F. Schrader 2000 This best-selling textbook for major manufacturing engineering programs across the country masterfully covers the basic processes and machinery used in the job shop, tool room, or small manufacturing facility. At the same time, it describes advanced equipment and processes used in larger production environments. Questions and problems at the end of each chapter can be used as self-tests or assignments. An Instructor's Guide is available to tailor a more structured learning experience. Additional resources from SME, including the Fundamental Manufacturing Processes videotape series can also be used to supplement the book's learning objectives. With 31 chapters, 45 tables, 586

illustrations, 141 equations and an extensive index, Manufacturing Processes & Materials is one of the most comprehensive texts available on this subject.

Comprehensive Workshop Technology (Manufacturing Processes) S. K. Garg 2009

Proceedings of the Second International Conference on the Future of ASEAN (ICoFA) 2017 – Volume 2 Rizauddin Saian 2018-05-04 This book examines how business, the social sciences, science and technology will impact the future of ASEAN. Following the ASEAN VISION 2020, it analyses the issues faced by ASEAN countries, which are diverse, while also positioning ASEAN as a competitive entity through partnerships. On the 30th anniversary of ASEAN, all ASEAN leaders agreed to the establishment of the ASEAN VISION 2020, which delineates the formation of a peaceful, stable and dynamically developed region while maintaining a community of caring societies in Malaysia, Indonesia, Singapore, Brunei, Vietnam, Thailand, the Philippines,

Myanmar, Laos and Cambodia. In keeping with this aspiration, Universiti Teknologi MARA Perlis took the initial steps to organise conferences and activities that highlight the role of the ASEAN region. The Second International Conference on the Future of ASEAN (ICoFA) 2017 was organised by the Office of Academic Affairs, Universiti Teknologi MARA Perlis, to promote more comprehensive integration among ASEAN members. This book, divided into two volumes, offers a useful guide for all those engaged in research on business, the social sciences, science and technology. It will also benefit researchers worldwide who want to gain more knowledge about ASEAN countries

Materials and Process Selection for Engineering Design Mahmoud M. Farag 2020-12-30
Introducing a new engineering product or changing an existing model involves developing designs, reaching economic decisions, selecting materials, choosing manufacturing processes, and assessing environmental impact. These

activities are interdependent and should not be performed in isolation from each other. This is because the materials and processes used in making a product can have a major influence on its design, cost, and performance in service. This Fourth Edition of the best-selling *Materials and Process Selection for Engineering Design* takes all of this into account and has been comprehensively revised to reflect the many advances in the fields of materials and manufacturing, including: Increasing use of additive manufacturing technology, especially in biomedical, aerospace and automotive applications Emphasizing the environmental impact of engineering products, recycling, and increasing use of biodegradable polymers and composites Analyzing further into weight reduction of products through design changes as well as material and process selection, especially in manufacturing products such as electric cars Discussing new methods for solving multi-criteria decision-making problems, including multi-

component material selection as well as concurrent and geometry-dependent selection of materials and joining technology Increasing use of MATLAB by engineering students in solving problems This textbook features the following pedagogical tools: New and updated practical case studies from industry A variety of suggested topics and background information for in-class group work Ideas and background information for reflection papers so readers can think critically about the material they have read, give their interpretation of the issues under discussion and the lessons learned, and then propose a way forward Open-book exercises and questions at the end of each chapter where readers are evaluated on how they use the material, rather than how well they recall it, in addition to the traditional review questions Includes a solutions manual and PowerPoint lecture materials for adopting professors Aimed at students in mechanical, manufacturing, and materials engineering, as well as professionals in these

fields, this book provides the practical know-how in order to choose the right materials and processes for development of new or enhanced products.

Advances in Superalloys Si Hai Jiao

2010-10-27 This two-volume set contains a collection of 381 peer-reviewed papers. Its aim is to bring together the latest advances in, and applications of, alloy design, process development, component engineering, phase-composition prediction, high-temperature oxidation, wrought alloys, lifetime estimation and materials behavior, cobalt-based alloys, nickel-iron alloys, joining, alternative materials and powder-metallurgy and also to consider the future of superalloys.

Advances in Additive Manufacturing and Joining M. S. Shunmugam 2019-10-16

This volume presents research papers on additive manufacturing (popularly known as 3D printing) and joining which were presented during the 7th International and 28th All India Manufacturing

Technology, Design and Research conference 2018 (AIMTDR 2018). The contents of this volume present the latest technological advancements for improving the efficiency, accuracy and speed of the additive manufacturing process and in fusion and solid-state welding technologies, with a variety of technologies, including fused deposition modelling, poly jet 3D printing, weld deposition based technology, selective laser melting and important welding technologies being covered. This volume will be of interest to academicians, researchers, and practicing engineers alike.

Manufacturing Technology - I C. Elanchezian
2006-06

Scientific and Technical Aerospace Reports

1984 Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.

Handbook of Aluminum George E. Totten

2003-03-27 *The Handbook of Aluminum: Vol. 1: Physical Metallurgy and Processes* covers all aspects of the physical metallurgy, analytical techniques, and processing of aluminium, including hardening, annealing, aging, property prediction, corrosion, residual stress and distortion, welding, casting, forging, molten metal processing, machining, rolling, and extrusion. It also features an extensive, chapter-length consideration of quenching.

Modern Manufacturing Technology Jitendra Kumar Katiyar 2021-12-03 *Modern Manufacturing Technology: Spotlight on Future* summarizes the emergence and development of modern manufacturing techniques (MMTs) with a focus on metallic and advanced material-based additive manufacturing technologies and their potential applications. Further, it explores advanced machining techniques for production of novel nanomaterials. The book also covers modern sophisticated techniques for the fabrication of ultrafine electronic devices such as micro-

electromechanical systems (MEMS), nano-electromechanical systems (NEMS), semiconductors, and optical systems. A dedicated chapter on manufacturing technology for Industry 4.0 is included. Features: Describes the background of manufacturing techniques in brief including the advent of and introduction to MMTs Reviews various types of MMTs established in recent years and their accelerated growth and development innovation-driven applications Overviews the physical and chemical techniques used for nanomaterials production Explores the fabrication mechanisms of MEMS, NEMS, semiconductors and optical devices Provides a conceptual overview of additive manufacturing technologies This book is geared to undergraduate and postgraduate students and professionals in mechanical and manufacturing engineering, and the manufacturing industry. Advanced Manufacturing Technologies Kapil Gupta 2017-04-29 This book provides details and collective information on working principle,

process mechanism, salient features, and unique applications of various advanced manufacturing techniques and processes belong. The book is divided in three sessions covering modern machining methods, advanced repair and joining techniques and, finally, sustainable manufacturing. The latest trends and research aspects of those fields are highlighted.

FOUNDATION OF WELDING TECHNOLOGY
GHOSH, K.S. 2022-09-01 Foundation of Welding Technology presents the fundamental and advanced analysis of welding metallurgy and technology in clear, simple, and lucid language. The book explains the welding fundamentals, various welding processes, flux formulation of SMAW electrode, heat flow in welding, welding metallurgy of steel and stainless steel and non-ferrous alloys (Al-base, Cu-base, Ti-base, and Mg-base) and dissimilar metals and alloys, hard facing techniques, welding defects and residual stress, brazing and soldering and weld inspection and testing, etc. in detail in very systematic and

logical manner. A large number of illustrative numerical problems have been included throughout the book as an aid to the students. The MCQs and Numerical Problems will definitely be helpful to the aspirants of GATE, ISE/ESE, and other examinations. This book is especially designed for diploma, undergraduate and postgraduate students of Mechanical, Production, and Metallurgical and Materials Engineering. KEY FEATURES • Easy-to-read style and simple and logical explanation of Welding Fundamentals. • The book has numerous numerical problems as examples with solutions and exercises with answers. • A large number of multiple-choice questions (MCQs) to help GATE/ISE/ESE aspirants. • This is the only book which deals about the manufacturing of the welding electrodes. • The book also deals with incorporation of basic discussion of a relatively new, friction stir welding (FSW) process.

ASM Metals Reference Book, 3rd Edition

Michael Baucio 1993-01-01 This reference book

makes it easy for anyone involved in materials selection, or in the design and manufacture of metallic structural components to quickly screen materials for a particular application. Information on practically all ferrous and nonferrous metals including powder metals is presented in tabular form for easy review and comparison between different materials. Included are chemical compositions, physical and mechanical properties, manufacturing processes, applications, pertinent specifications and standards, and test methods. Contents Overview: Glossary of metallurgical terms Selection of structural materials (specifications and standards, life cycle and failure modes, materials properties and design, and properties and applications) Physical data on the elements and alloys Testing and inspection Chemical composition and processing characteristics
The Indian National Bibliography 2009
A Conservation Bibliography Army Library (U.S.) 1959

Manufacturing Technology Vol-I 3E Rao 2011
Production at the Leading Edge of Technology Bernd-Arno Behrens 2021-09-04

This congress proceedings provides recent research on leading-edge manufacturing processes. The aim of this scientific congress is to work out diverse individual solutions of "production at the leading edge of technology" and transferable methodological approaches. In addition, guest speakers with different backgrounds will give the congress participants food for thoughts, interpretations, views and suggestions. The manufacturing industry is currently undergoing a profound structural change, which on the one hand produces innovative solutions through the use of high-performance communication and information technology, and on the other hand is driven by new requirements for goods, especially in the mobility and energy sector. With the social discourse on how we should live and act primarily according to guidelines of sustainability,

structural change is gaining increasing dynamic. It is essential to translate politically specified sustainability goals into socially accepted and marketable technical solutions. Production research is meeting this challenge and will make important contributions and provide innovative solutions from different perspectives.

Manufacturing Technology 2019

Applied Mechanics Reviews 1984

Sustainable Material Forming and Joining

R.Ganesh Narayanan 2019-02-06 The main objective of the book is to expose readers to the basics of sustainable material forming and joining technologies, and to discuss the relationship between conventional and sustainable processes. It also provides case studies for sustainable issues in material forming and joining processes, workouts for converting conventional processes to green processes, and highlights the importance of awareness on sustainable and green manufacturing through education. The book will include green and sustainability

concepts in material forming like bulk forming and sheet forming emphasizing hot forming, materials development, lubrication, and minimizing defects. Key Features Conceptualizes green and sustainability issues towards efficient material forming and joining Addresses important aspects of sustainable manufacturing by forming operations Presents comparison between traditional and sustainable manufacturing processes Includes practical case studies from industry experts Discusses green and sustainability concepts in material forming like bulk forming and sheet forming emphasizing hot forming, materials development, lubrication, and minimizing defects

Manufacturing Technology for Aerospace

Structural Materials Flake C Campbell Jr

2011-08-31 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 book will be an important resource for all those involved in aerospace design and construction, materials science and engineering, as well as for metallurgists and those working in related sectors such as the automotive and mass transport industries. Flake Campbell Jr has over thirty seven years experience in the aerospace industry and is currently Senior Technical Fellow at the Boeing Phantom Works in Missouri, USA. * All major aerospace structural materials covered: metals and composites * Focus on details of manufacture and use * Author has huge experience in aerospace industry * A must-have book for materials engineers, design and

structural engineers, metallurgical engineers and manufacturers for the aerospace industry

Information Control Problems in Manufacturing Technology 1989

E.A. Puente
2014-06-28 The Symposium presented and discussed the latest research on new theories and advanced applications of automatic systems, which are developed for manufacturing technology or are applicable to advanced manufacturing systems. The topics included computer integrated manufacturing, simulation and the increasingly important areas of artificial intelligence and expert systems, and applied them to the broad spectrum of problems that the modern manufacturing engineer is likely to encounter in the design and application of increasingly complex automatic systems.

Manufacturing Techniques for Materials T.S. Srivatsan
2018-04-09 Manufacturing Techniques for Materials: Engineering and Engineered provides a cohesive and comprehensive overview of the following: (i) prevailing and emerging

trends, (ii) emerging developments and related technology, and (iii) potential for the commercialization of techniques specific to manufacturing of materials. The first half of the book provides the interested reader with detailed chapters specific to the manufacturing of emerging materials, such as additive manufacturing, with a valued emphasis on the science, technology, and potentially viable practices specific to the manufacturing technique used. This section also attempts to discuss in a lucid and easily understandable manner the specific advantages and limitations of each technique and goes on to highlight all of the potentially viable and emerging technological applications. The second half of this archival volume focuses on a wide spectrum of conventional techniques currently available and being used in the manufacturing of both materials and resultant products. Manufacturing Techniques for Materials is an invaluable tool for a cross-section of readers including engineers,

researchers, technologists, students at both the graduate level and undergraduate level, and even entrepreneurs.

Fundamentals of Manufacturing, Second Edition
Philip D. Rufe 2002 Whether you are an engineer considering certification, or a non-engineer seeking to communicate more intelligently about manufacturing-related issues, *Fundamentals of Manufacturing* provides virtually all the information you need to know. The book is based singularly on SME's certification Institute's 'Body of Knowledge.' Fifteen manufacturing experts, including educators, practitioners in the field, subject matter specialists, have checked the content for relevancy, accuracy and clarity, guaranteeing focused self-study and solid answers to questions regarding the fundamentals. Features: Thorough review of manufacturing fundamentals with samples and practice problems; Detailed table of contents and index; Referencing feature provides quick access to figures, tables, equations, problems and

solutions; Mathematical equations, newly reformatted, are arranged logically according to the sequence they're presented; Includes a number key to practice problems; Up-to-date with current theoretical models, notably lean manufacturing. Benefits: Increased knowledge of manufacturing engineering and what is covered on the *Fundamentals of Manufacturing Certification Examination*; Example questions and problems prepare you for real-world situations; Great reference. Specific Information is logically enumerated, so it's easy to find; Orderly presentation and layout makes for good retention and enjoyable reading.

Alternative Fuels and Advanced Vehicle Technologies for Improved Environmental Performance
Richard Folkson 2022-07-29
Alternative Fuels and Advanced Vehicle Technologies for Improved Environmental Performance: Towards Zero Carbon Transportation, Second Edition provides a comprehensive view of key developments in

advanced fuels and vehicle technologies to improve the energy efficiency and environmental impact of the automotive sector. Sections consider the role of alternative fuels such as electricity, alcohol and hydrogen fuel cells, as well as advanced additives and oils in environmentally sustainable transport. Other topics explored include methods of revising engine and vehicle design to improve environmental performance and fuel economy and developments in electric and hybrid vehicle technologies. This reference will provide professionals, engineers and researchers of alternative fuels with an understanding of the latest clean technologies which will help them to advance the field. Those working in environmental and mechanical engineering will benefit from the detailed analysis of the technologies covered, as will fuel suppliers and energy producers seeking to improve the efficiency, sustainability and accessibility of their work. Provides a fully updated reference with

significant technological advances and developments in the sector Presents analyses on the latest advances in electronic systems for emissions control, autonomous systems, artificial intelligence and legislative requirements Includes a strong focus on updated climate change predictions and consequences, helping the reader work towards ambitious 2050 climate change goals for the automotive industry
New Perspectives on Applied Industrial Tools and Techniques Jorge Luis García-Alcaraz 2017-06-15
This book disseminates the current trends among innovative and high-quality research regarding the implementation of conceptual frameworks, strategies, techniques, methodologies, informatics platforms and models for developing advanced industrial tools and techniques and their application in different fields. It presents a collection of theoretical, real-world and original research works in the field of applied industrial tools and techniques. The text goes beyond the state-of-the-art in the field of industrial and

software engineering, listing successful applications and use cases of studies of new approaches, applications, methods, techniques for developing advanced industrial tools, methodologies and techniques and their application in different fields. The topics covered in this book are of interest to academics, researchers, students, stakeholders and consultants.

Journal of Science and Technology, Kumasi, Ghana 2007

Manufacturing Technology D. K. Singh 2008 This new edition of Manufacturing Technology retains the flavour of the first edition by providing readers with comprehensive coverage of theory with a diverse array of exercises. Designed for extensive practice and self study, this book presents theory in an encapsulated format for quick reading. Objective questions and numerical problems are accompanied by their solutions to aid understanding.

FUNDAMENTALS OF MODERN MANUFACTURING

Mikell P. Groover 2002

Handbook of Residual Stress and Deformation of Steel George E. Totten 2002 Annotation

Examines the factors that contribute to overall steel deformation problems. The 27 articles address the effect of materials and processing, the measurement and prediction of residual stress and distortion, and residual stress formation in the shaping of materials, during hardening processes, and during manufacturing processes. Some of the topics are the stability and relaxation behavior of macro and micro residual stresses, stress determination in coatings, the effects of process equipment design, the application of metallo- thermo-mechanic to quenching, inducing compressive stresses through controlled shot peening, and the origin and assessment of residual stresses during welding and brazing. Annotation c. Book News, Inc., Portland, OR (booknews.com)
The Complete Technology Book on Steel and Steel Products (Fasteners, Seamless Tubes,

Casting, Rolling of Flat Products & others) NPCB Board of Consultants & Engineers 2008-10-01 Iron and steel have played a leading role in the development of human civilization and their techniques. Together with its derivative, steel, iron has no real rival in its particular fields of application and has become a synonym of progress, being an essential element in mankind's greatest technological achievements. It was at the origin of the industrial and scientific revolutions and at the heart of all the great discoveries which have marked the history of humanity from the manufacture of high quality swords in ancient times to today's architectural wonders. Steel is an alloy that consists mostly of iron and has carbon content between 0.2% and 2.1% by weight, depending on the grade. Carbon is the most common alloying material for iron, but various other alloying elements are used, such as manganese, chromium, vanadium, and tungsten. Rolling is a metal forming process in which metal stock is passed through a pair of

rolls. Rolling is classified according to the temperature of the metal rolled. Steelmaking is the second step in producing steel from iron ore. Processing of steel results in special steel products with required properties, for example; vacuum treated steel for forging ingots; pre-strengthened stress-relieved elongated steel, metallurgical addition products, forging powder alloy steels, etc. Fasteners are used to join and hold two or more pieces of metal either temporarily or permanently. Some of the most common are bolts, screws, nuts, rivets and pins. Packaging steels differ from other sheet products particularly in terms of their thickness, mechanical properties and coatings, together with their aptitude to satisfy specific industrial and marketing requirements related to high production rates, design factors etc. Small gauge welded tubes have an extremely wide range of applications, including metallic roof frames, mechanical construction in public work and industrial engineering sectors, agricultural

machinery, fluid distribution circuits, piston, etc. India is among the top producers of all forms of steel in the world. Easy availability of low cost manpower and presence of abundant reserves make India competitive in the global setup. The steel industry in India has witnessed an increase in demand due to expanding oil and gas sector, huge spending on infrastructural facilities coupled with growth in housing, consumer durables and auto sectors. This book basically deals with structural changes in steel during hot rolling, structural changes during reheating, kinds of grain restoration process, dynamic restoration process, static restoration process, effect of initial grain, size of static re crystallization, effects of temperature and micro alloying, fundamental principles of the metal rolling process, preparing and heating the initial materials, preparations for rolling heating before rolling operations, bolt and nut manufacturing technology, casting of steel for flat products etc. The present book covers different important

aspects of steel processing with the casting method of steel for flat products, rolling of rails, wheels and rings, rolling of different steel products, production of fasteners, welded pipes, steel products for the building trade and many more. The book is very useful for everybody who wants the thorough study on steel and steel products or wants to diversify in to this field. Photoenergy and Thin Film Materials Xiao-Yu Yang 2019-03-19 This book provides a fundamental discussion, latest research & developments, and the future of thin films and photoenergy materials, two developing areas that have the potential to spearhead the future of industry. Photoenergy materials are expected to be a next generation key material to provide secure, safe, sustainable and affordable energy. Photoenergy devices are known to convert the sunlight into electricity. This type of devices is very much simple in design with having a major advantage with their structure as stand-alone systems to provide outputs up to megawatts.

They have been applied as a power source, solar home systems, remote buildings, water pumping, megawatt scale power plants, satellites, communications, and space vehicles. With such a list of enormous applications, the demand for photoenergy devices is growing every year. On the other hand, thin films coating, which can be defined as fusion of surface science, materials science, and applied physics, are progressing as a unified discipline of scientific industry. A thin film can be termed as a very fine or thin layer of material coated on a particular surface, that can be in the range of a nanometer in thickness to several micrometers in size. Thin films are being applied it a number of fields ranging from protection purposes to electronic semiconductor devices.

Production Technology K. L. Narayana, Sr.
2013-05-10 Production Technology is meant for BTech students in mechanical, production and manufacturing engineering. It deals with the fundamental concepts of foundry, forming,

welding technologies and foundry mechanization. The book covers both theoretical and analytical concepts. Worked out examples, review and objective-type questions are provided at the end of each chapter. More than 150 line sketches are included. New to this edition: the chapter on furnaces, solidification of castings and casting defects is fully revised, and a section on solidification of alloys has been added; the Welding Processes chapter covers gas cutting, oxy-acetylene welding, and flash welding; a new chapter on metals and alloys has been added, containing important ferrous and non-ferrous metals and alloys with their applications.

Manufacturing Science Khan M. I. 2011
Micromanufacturing Processes V.K. Jain
2016-04-19 Increased demand for and developments in micromanufacturing have created a need for a resource that covers both the science and technology of this rapidly growing area. With contributions from eminent professors and researchers actively engaged in

teaching, research, and development, Micromanufacturing Processes details the basic principles, tools,

Indian National Bibliography B. S. Kesavan 2009

Advanced Casting Technologies Dr.T.R Vijayaram 2018-05-02 Major casting processing advancements have been made in experimental and simulation areas. Newly developed advanced casting technologies allow foundry researchers to explore detailed phenomena associated with new casting process parameters helping to produce defect-free castings with good quality. Moreover, increased computational power allows foundry technologists to simulate advanced casting processes to reduce casting defects. In view of rapid expansion of knowledge and capability in the exciting field of casting technology, it is possible to develop new casting techniques. This book is intended to discuss many casting processing technologies. It is devoted to advanced casting processing technologies like

ductile casting production and thermal analysis, casting of metal matrix composites by vortex stir casting technique, aluminum DC casting, evaporative casting process, and so on. This book entitled Advanced Casting Technologies has been organized into seven chapters and categorized into four sections. Section 1 discusses the production of ductile iron casting and thermal analysis. Section 2 depicts aluminum casting. Section 3 describes the casting manufacturing aspects of functionally graded materials and evaporative casting process. Section 4 explains about the vortex stir casting technique to process metal matrix composite castings. All the chapters discussed in detail the processing steps, process parameters involved in the individual casting technique, and also its applications. The goal of the book is to provide details on the recent casting technologies.

Precision Forming Technology of Large Superalloy Castings for Aircraft Engines

Baode Sun 2021-02-06 This book describes

systematically the theory and technology of the precision forming of large, complex and thin-walled superalloy castings for aircraft engines, covering all the important basic aspects of the manufacturing process, including process design, wax pattern, ceramic molds, casting and solidification, heat treatment, repair casting and dimension precision control. The correlation of casting defects, structural characteristics and performance of castings is revealed through a range of tests. It also discusses the latest

technologies and advances in this field – such as imaging the solidification process by means of synchrotron radiography, 3D computerized tomography and reconstruction of microporosity defects, analysis and diagnosis of error sources for dimension over-tolerance and adjusted pressure casting technology – which are of particular interest. Providing essential insights, the book offers a valuable guide to the design and manufacture of superalloy casting parts for aircraft engines.