

Engineering Fracture Mechanics K Ramesh

Damage and Failure of Composite Materials
Experimental Stress Analysis for Materials and Structures
Advances in Engineering Design
Structural Adhesive Joints
Welded Joint Design
Challenges in Mechanics of Time Dependent Materials, Fracture, Fatigue, Failure and Damage Evolution, Volume 2
Extended Finite Element Method
Digital Photoelasticity
Applied Impact Mechanics
Fracture Mechanics for Modern Engineering Design
Cracks and Fracture
Optical Methods for Solid Mechanics
Fracture Mechanics
Applied Welding Engineering
Mechanical Behavior of Materials
Scattered Light Photoelasticity
Mechanical Behavior of Materials
Comprehensive Composite Materials II
Noise And Vibration Control
Mechanical Engineering for Sustainable Development: State-of-the-Art Research
Elements of Fracture Mechanics
Digital Photoelasticity
Proceedings of Fatigue, Durability and Fracture Mechanics
Recent Trends in Mechanical Engineering
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Advances in Applied Mechanical Engineering
Elements of Fracture Mechanics
Handbook on Experimental Mechanics
Electrical Engineering
Proceedings of Fatigue Crack Paths (FCP 2003), Parma, Italy 2003
Crack Paths
Magnesium Technology 2016
Recent Advances in Structural Engineering, Volume 2
Springer Handbook of Experimental Solid Mechanics
Composite Materials
Structural Integrity Assessment

Damage and Failure of Composite Materials

Understanding damage and failure of composite materials is critical for reliable and cost-effective engineering design. Bringing together materials mechanics and modeling, this book provides a complete guide to damage, fatigue and failure of composite materials. Early chapters focus on the underlying principles governing composite damage, reviewing basic equations and mechanics theory, before describing mechanisms of damage such as cracking, breakage and buckling. In subsequent chapters, the physical mechanisms underlying the formation and progression of damage under mechanical loads are described with ample experimental data, and micro- and macro-level damage models are combined. Finally, fatigue of composite materials is discussed using fatigue-life diagrams. While there is a special emphasis on polymer matrix composites, metal and ceramic matrix composites are also described. Outlining methods for more reliable design of composite structures, this is a valuable resource for engineers and materials scientists in industry and academia.

Experimental Stress Analysis for Materials and Structures

This book is intended to help the reader understand impact phenomena as a focused application of diverse topics such as

rigid body dynamics, structural dynamics, contact and continuum mechanics, shock and vibration, wave propagation and material modelling. It emphasizes the need for a proper assessment of sophisticated experimental/computational tools promoted widely in contemporary design. A unique feature of the book is its presentation of several examples and exercises to aid further understanding of the physics and mathematics of impact process from first principles, in a way that is simple to follow.

Advances in Engineering Design

Fracture is a natural reaction of solids to relieve stress and shed excess energy. The fragility of solids is a constant threat to our survival as we drive over a bridge, go through a tunnel, or even inside a building. This book weaves together the essential concepts underlying fracture mechanics.

Structural Adhesive Joints

As a reference book, the Springer Handbook provides a comprehensive exposition of the techniques and tools of experimental mechanics. An informative introduction to each topic is provided, which advises the reader on suitable techniques for practical applications. New topics include biological materials, MEMS and NEMS, nanoindentation, digital photomechanics, photoacoustic characterization, and atomic force microscopy in experimental solid mechanics. Written and compiled by internationally renowned experts in the field, this book is a timely, updated reference for both practitioners and researchers in science and engineering.

Welded Joint Design

Unique within the field for being written in a tutorial style, this textbook adopts a step-by-step approach to the background needed for understanding a wide range of full-field optical measurement techniques in solid mechanics. This method familiarizes readers with the essentials of imaging and full-field optical measurement techniques, helping them to identify the appropriate techniques and in assessing measurement systems. In addition, readers learn the appropriate rules of thumb as a guide to better experimental performance from the applied techniques. Rather than presenting an exhaustive overview on the subject, each chapter provides a concise introduction to the concepts and principles, integrates solved problems within the text, summarizes the essence at the end, and includes unsolved problems. With its coverage of topics also relevant for industry, this text is aimed at graduate students, researchers, and engineers involved in non-destructive testing for acoustics, mechanics, medicine, diagnosis on artwork and construction, and civil engineering.

Challenges in Mechanics of Time Dependent Materials, Fracture, Fatigue, Failure and Damage Evolution, Volume 2

With its combination of practicality, readability, and rigor that is characteristic of any truly authoritative reference and text, Fracture Mechanics: Fundamentals and Applications quickly established itself as the most comprehensive guide to fracture mechanics available. It has been adopted by more than 100 universities and embraced by thousands of professional engineers worldwide. Now in its third edition, the book continues to raise the bar in both scope and coverage. It encompasses theory and applications, linear and nonlinear fracture mechanics, solid mechanics, and materials science with a unified, balanced, and in-depth approach. Reflecting the many advances made in the decade since the previous edition came about, this indispensable Third Edition now includes: A new chapter on environmental cracking Expanded coverage of weight functions New material on toughness test methods New problems at the end of the book New material on the failure assessment diagram (FAD) method Expanded and updated coverage of crack closure and variable-amplitude fatigue Updated solutions manual In addition to these enhancements, Fracture Mechanics: Fundamentals and Applications, Third Edition also includes detailed mathematical derivations in appendices at the end of applicable chapters; recent developments in laboratory testing, application to structures, and computational methods; coverage of micromechanisms of fracture; and more than 400 illustrations. This reference continues to be a necessity on the desk of anyone involved with fracture mechanics.

Extended Finite Element Method

Most structures are comprised of a number of individual parts or components which have to be connected to form a system with integral load transmission path. The structural adhesive bonding represents one of the most enabling technologies to fabricate most complex structural configurations involving advanced materials (e.g. composites) for load-bearing applications. Quite recently there has been a lot of activity in harnessing nanotechnology (use of nanomaterials) in ameliorating the existing or devising better performing structural adhesives. The 10 chapters by subject matter experts look at the following issues: Surface preparation for structural adhesive joints (SAJ) Use of nanoparticles in enhancing performance of SAJ Optimization of SAJ Durability aspects of SAJ Debonding of SAJ Fracture mechanics of SAJ Failure analysis of SAJ Damage behavior in functionally graded SAJ Impact, shock and vibration characteristics of composites for SAJ Delamination arrest methods in SAJ

Digital Photoelasticity

A straightforward introduction to basic concepts and methodologies for digital photoelasticity, providing a foundation on

which future researchers and students can develop their own ideas. The book thus promotes research into the formulation of problems in digital photoelasticity and the application of these techniques to industries. In one volume it provides data acquisition by DIP techniques, its analysis by statistical techniques, and its presentation by computer graphics plus the use of rapid prototyping technologies to speed up the entire process. The book not only presents the various techniques but also provides the relevant time-tested software codes. Exercises designed to support and extend the treatment are found at the end of each chapter.

Applied Impact Mechanics

Cracks and Fracture consists of nine chapters in logical sequence. In two introductory chapters, physical processes in the vicinity of the crack edge are discussed and the fracture process is described. Chapter 3 develops general basic concepts and relations in crack mechanics, such as path independent integrals, stress intensity factors and energy flux into the crack edge region. Chapters 4-7 deal with elastostatic cracks, stationary or slowly moving elastic-plastic cracks, elastodynamic crack mechanics and elastoplastic aspects of fracture, including dynamic fracture mechanics. Appendices include general formulae, the basic theory of analytic functions, introduction to Laplace and Hankel transforms and description of certain basic relations, for instance for stress waves in solids. There is an extensive bibliography, containing references to both classical and recent work, and a comprehensive index. Presents an extensive bibliography containing references to both classical and recent works and a comprehensive index Appendices include general formulas, the basic theory of analytic functions, introduction to Laplace and Hankel transforms, and descriptions of certain basic relations, for instance for stress waves in solids

Fracture Mechanics for Modern Engineering Design

Dynamic Behavior of Materials, Volume 1: Proceedings of the 2012 Annual Conference on Experimental and Applied Mechanics represents one of seven volumes of technical papers presented at the Society for Experimental Mechanics SEM 12th International Congress & Exposition on Experimental and Applied Mechanics, held at Costa Mesa, California, June 11-14, 2012. The full set of proceedings also includes volumes on Challenges in Mechanics of Time -Dependent Materials and Processes in Conventional and Multifunctional Materials, Imaging Methods for Novel Materials and Challenging Applications, Experimental and Applied Mechanics, 2nd International Symposium on the Mechanics of Biological Systems and Materials 13th International Symposium on MEMS and Nanotechnology and, Composite Materials and the 1st International Symposium on Joining Technologies for Composites.

Cracks and Fracture

This newly revised and updated edition of the classic Handbook on Experimental Mechanics documents both the traditional methods as well as the new principles involved in stress analysis of materials. The emergence of new materials and new disciplines, together with the escalating use of on- and off-line computers for rapid data processing and the combined use of experimental and numerical techniques have greatly expanded the capabilities of experimental mechanics. Twenty-seven internationally renowned scholars have contributed their collective experience to produce this comprehensive handbook. While covering traditional methods, such as strain gage instrumentation, the most widely used experimental technique, the book also discusses the new experimental techniques such as holography, holographic interferometry, geometric moire, moire interferometry, image processing, and modal analysis, which have emerged as practical tools in the broader field of experimental mechanics. The Handbook on Experimental Mechanics is strongly recommended for mechanical engineers, aeronautical and aerospace engineers, structural engineers, and chemical engineers requiring an authoritative reference covering both time-honored methods and new techniques in experimental mechanics.

Optical Methods for Solid Mechanics

Fracture Mechanics

This book presents select proceedings of the International Conference on Future Learning Aspects of Mechanical Engineering (FLAME 2018). The book covers mechanical design areas such as computational mechanics, finite element modeling, computer aided designing, tribology, fracture mechanics, and vibration. The book brings together different aspects of engineering design, and will be useful for researchers and professionals working in this field.

Applied Welding Engineering

A straightforward introduction to basic concepts and methodologies for digital photoelasticity, providing a foundation on which future researchers and students can develop their own ideas. The book thus promotes research into the formulation of problems in digital photoelasticity and the application of these techniques to industries. In one volume it provides data acquisition by DIP techniques, its analysis by statistical techniques, and its presentation by computer graphics plus the use of rapid prototyping technologies to speed up the entire process. The book not only presents the various techniques but also provides the relevant time-tested software codes. Exercises designed to support and extend the treatment are found at the end of each chapter.

Mechanical Behavior of Materials

This volume provides valuable insight into diverse topics related to mechanical engineering and presents state-of-the-art work on sustainable development being carried out throughout the world by budding researchers and scientists. Divided into three sections, the volume covers machine design, materials and manufacturing, and thermal engineering. It presents innovative research work on machine design that is of relevance to such varied fields as the automotive industry, agriculture, and human anatomy. The second section addresses materials characterization, an important tool in assessing proper materials for application-oriented jobs, and emerging unconventional machining processes that are important in design engineering for new products and tools. The section on thermal engineering broadly covers the use of viable alternate fuels, such as HHO, biodiesel, etc., with the objective of reducing the burden on petroleum reserves and the environment.

Scattered Light Photoelasticity

Extended Finite Element Method provides an introduction to the extended finite element method (XFEM), a novel computational method which has been proposed to solve complex crack propagation problems. The book helps readers understand the method and make effective use of the XFEM code and software plugins now available to model and simulate these complex problems. The book explores the governing equation behind XFEM, including level set method and enrichment shape function. The authors outline a new XFEM algorithm based on the continuum-based shell and consider numerous practical problems, including planar discontinuities, arbitrary crack propagation in shells and dynamic response in 3D composite materials. Authored by an expert team from one of China's leading academic and research institutions Offers complete coverage of XFEM, from fundamentals to applications, with numerous examples Provides the understanding needed to effectively use the latest XFEM code and software tools to model and simulate dynamic crack problems

Mechanical Behavior of Materials

This volume contains selected papers from the Second Quadrennial International Conference on Structural Integrity (ICONS-2018). The papers cover important topics related to structural integrity of critical installations, such as power plants, aircrafts, spacecrafts, defense and civilian components. The focus is on assuring safety of operations with high levels of reliability and structural integrity. This volume will be of interest to plant operators working with safety critical equipment, engineering solution providers, software professionals working on engineering analysis, as well as academics working in the area.

Comprehensive Composite Materials II

Dynamic fracture in solids has attracted much attention for over a century from engineers as well as physicists due both to its technological interest and to inherent scientific curiosity. Rapidly applied loads are encountered in a number of technical applications. In some cases such loads might be applied deliberately, as for example in problems of blasting, mining, and comminution or fragmentation; in other cases, such dynamic loads might arise from accidental conditions. Regardless of the origin of the rapid loading, it is necessary to understand the mechanisms and mechanics of fracture under dynamic loading conditions in order to design suitable procedures for assessing the susceptibility to fracture. Quite apart from its repercussions in the area of structural integrity, fundamental scientific curiosity has continued to play a large role in engendering interest in dynamic fracture problems. In-depth coverage of the mechanics, experimental methods, practical applications. Summary of material response of different materials. Discussion of unresolved issues in dynamic fracture.

Noise And Vibration Control

This book summarizes the main methods of experimental stress analysis and examines their application to various states of stress of major technical interest, highlighting aspects not always covered in the classic literature. It is explained how experimental stress analysis assists in the verification and completion of analytical and numerical models, the development of phenomenological theories, the measurement and control of system parameters under operating conditions, and identification of causes of failure or malfunction. Cases addressed include measurement of the state of stress in models, measurement of actual loads on structures, verification of stress states in circumstances of complex numerical modeling, assessment of stress-related material damage, and reliability analysis of artifacts (e.g. prostheses) that interact with biological systems. The book will serve graduate students and professionals as a valuable tool for finding solutions when analytical solutions do not exist.

Mechanical Engineering for Sustainable Development: State-of-the-Art Research

Based on the European Welding Engineer (EWF) syllabus Part 3 - Construction and Design - this book provides a clear, highly illustrated and concise explanation of how welded joints and structures are designed and of the constraints which welding may impose on the design. Written for both students and practicing engineers in welding and design, the book will also be of value to civil, structural, mechanical and plant engineers.

Elements of Fracture Mechanics

While there are several books on market that are designed to serve a company's daily shop-floor needs. Their focus is mainly on the physically making specific types of welds on specific types of materials with specific welding processes. There

is nearly zero focus on the design, maintenance and troubleshooting of the welding systems and equipment. Applied Welding Engineering: Processes, Codes and Standards is designed to provide a practical in-depth instruction for the selection of the materials incorporated in the joint, joint inspection, and the quality control for the final product. Welding Engineers will also find this book a valuable source for developing new welding processes or procedures for new materials as well as a guide for working closely with design engineers to develop efficient welding designs and fabrication procedures. Applied Welding Engineering: Processes, Codes and Standards is based on a practical approach. The book's four part treatment starts with a clear and rigorous exposition of the science of metallurgy including but not limited to: Alloys, Physical Metallurgy, Structure of Materials, Non-Ferrous Materials, Mechanical Properties and Testing of Metals and Heat Treatment of Steels. This is followed by self-contained sections concerning applications regarding Section 2: Welding Metallurgy & Welding Processes, Section 3: Nondestructive Testing, and Section 4: Codes and Standards. The author's objective is to keep engineers moored in the theory taught in the university and colleges while exploring the real world of practical welding engineering. Other topics include: Mechanical Properties and Testing of Metals, Heat Treatment of Steels, Effect of Heat on Material During Welding, Stresses, Shrinkage and Distortion in Welding, Welding, Corrosion Resistant Alloys-Stainless Steel, Welding Defects and Inspection, Codes, Specifications and Standards. The book is designed to support welding and joining operations where engineers pass plans and projects to mid-management personnel who must carry out the planning, organization and delivery of manufacturing projects. In this book, the author places emphasis on developing the skills needed to lead projects and interface with engineering and development teams. In writing this book, the book leaned heavily on the author's own experience as well as the American Society of Mechanical Engineers (www.asme.org), American Welding Society (www.aws.org), American Society of Metals (www.asminternational.org), NACE International (www.nace.org), American Petroleum Institute (www.api.org), etc. Other sources includes The Welding Institute, UK (www.twi.co.uk), and Indian Air force training manuals, ASNT (www.asnt.org), the Canadian Standard Association (www.cas.com) and Canadian General Standard Board (CGSB) (www.tpsgc-pwgsc.gc.ca). Rules for developing efficient welding designs and fabrication procedures Expert advice for complying with international codes and standards from the American Welding Society, American Society of Mechanical Engineers, and The Welding Institute(UK) Practical in-depth instruction for the selection of the materials incorporated in the joint, joint inspection, and the quality control for the final product.

Digital Photoelasticity

This book is a collection of select papers presented at the Tenth Structural Engineering Convention 2016 (SEC-2016). It comprises plenary, invited, and contributory papers covering numerous applications from a wide spectrum of areas related to structural engineering. It presents contributions by academics, researchers, and practicing structural engineers addressing analysis and design of concrete and steel structures, computational structural mechanics, new building

materials for sustainable construction, mitigation of structures against natural hazards, structural health monitoring, wind and earthquake engineering, vibration control and smart structures, condition assessment and performance evaluation, repair, rehabilitation and retrofit of structures. Also covering advances in construction techniques/ practices, behavior of structures under blast/impact loading, fatigue and fracture, composite materials and structures, and structures for non-conventional energy (wind and solar), it will serve as a valuable resource for researchers, students and practicing engineers alike.

Proceedings of Fatigue, Durability and Fracture Mechanics

Many engineering structures and components contain cracks or crack-like flaws and it is widely recognized that crack growth must be considered both in the design and analysis of failures. The complete solution of a crack growth problem therefore includes determination of the crack path. At present the factors controlling the path taken by a propagating crack are not completely understood. In general crack paths are difficult to predict, while in practice their development in structures is often determined by large-scale structural tests. In introductory texts on fracture mechanics it is usually assumed that the crack path is known, either from theoretical considerations, or from the results of laboratory tests.

Recent Trends in Mechanical Engineering

A balanced mechanics-materials approach and coverage of the latest developments in biomaterials and electronic materials, the new edition of this popular text is the most thorough and modern book available for upper-level undergraduate courses on the mechanical behavior of materials. To ensure that the student gains a thorough understanding the authors present the fundamental mechanisms that operate at micro- and nano-meter level across a wide-range of materials, in a way that is mathematically simple and requires no extensive knowledge of materials. This integrated approach provides a conceptual presentation that shows how the microstructure of a material controls its mechanical behavior, and this is reinforced through extensive use of micrographs and illustrations. New worked examples and exercises help the student test their understanding. Further resources for this title, including lecture slides of select illustrations and solutions for exercises, are available online at www.cambridge.org/97800521866758.

Elementary engineering fracture mechanics

Challenges in Mechanics of Time-Dependent Materials, Volume 2 of the Proceedings of the 2019 SEM Annual Conference & Exposition on Experimental and Applied Mechanics, the second volume of six from the Conference, brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on

fundamental and applied aspects of Experimental Mechanics, including papers in the following general technical research areas: Characterization Across Length Scales Extreme Conditions & Environmental Effects Soft Materials and Biomaterials Damage, Fatigue and Fracture Structure, Function and Performance Rate Effects in Elastomers Viscoelasticity & Viscoplasticity Research in Progress In-situ Techniques and Microscale Effects on Mechanical Behavior Fracture and Fatigue in Brittle Materials Novel Experimental Methods Fatigue and Fracture in Extreme Environments Integration of Models and Experiments Failure in Elastomers and Gels Rate Effects in Elastomers Microscale and Microstructural Effects on Mechanical Behavior Mechanics of Energy Materials Additive Manufacturing: Fatigue and Fracture Mechanics of Composite Materials Interfacial and Mixed-Mode Fracture Vibration Effects and High Cycle Fatigue

Dynamic Behavior of Materials, Volume 1

When asked to start teaching a course on engineering fracture mechanics, I realized that a concise textbook, giving a general oversight of the field, did not exist. The explanation is undoubtedly that the subject is still in a stage of early development, and that the methodologies have still a very limited applicability. It is not possible to give rules for general application of fracture mechanics concepts. Yet our comprehension of cracking and fracture behaviour of materials and structures is steadily increasing. Further developments may be expected in the not too distant future, enabling useful prediction of fracture safety and fracture characteristics on the basis of advanced fracture mechanics procedures. The user of such advanced procedures must have a general understanding of the elementary concepts, which are provided by this volume. Emphasis was placed on the practical application of fracture mechanics, but it was aimed to treat the subject in a way that may interest both metallurgists and engineers. For the latter, some general knowledge of fracture mechanisms and fracture criteria is indispensable for an appreciation of the limitations of fracture mechanics. Therefore a general discussion is provided on fracture mechanisms, fracture criteria, and other metallurgical aspects, without going into much detail. Numerous references are provided to enable a more detailed study of these subjects which are still in a stage of speculative treatment.

Materials Structure & Micromechanics of Fracture VI

Comprehensive in scope and readable, this book explores the methods used by engineers to analyze and predict the mechanical behavior of materials. Author Norman E. Dowling provides thorough coverage of materials testing and practical methods for forecasting the strength and life of mechanical parts and structural members.

Dynamic Fracture

Experimental Stress Analysis

Fracture Mechanics is an essential tool to evaluate whether a component is likely to fail or not. This book has been written in a simple and step-wise manner to help readers familiarise with the basic and advanced topics. Additionally it has over 185 illustrations to further reinforce and simplify the learning process. With this coverage, the book will be useful to professionals and students of engineering.

Advances in Applied Mechanical Engineering

Elements of Fracture Mechanics

The main goal of these proceedings was to demonstrate the use of a variety of multi-scale approaches, ranging from the atomistic to the macroscopic, and in this it succeeds admirably. The special collection includes more than 130 peer-reviewed papers on atomistic, mesoscopic, macroscopic and multiscale approaches.

Handbook on Experimental Mechanics

Comprehensive Composite Materials II, Second Edition is a one-stop reference work spanning the whole composites science field, covering such topics as fiber reinforcements and general theory of composites, polymer matrix composites, metal matrix composites, test methods, nondestructive evaluation and smart composites, design and application, and nanocomposites, multifunctional materials and smart materials. Detailed coverage is also given to the development and application of the principles of multi-scale mechanics and physical model-based design methods and the incorporation of mechanisms of deformation and fracture into predictive design equations that are useful for the design engineer. Extensive coverage of topics related to nanocomposites, including nanoscale reinforcements, such as single-wall and multi-wall nanotubes, graphene nanoplatelets, and nanodiamonds are also covered. Includes up-to-date coverage of important commercial, consumer and aerospace/defense applications, including structural, mechanical, electronic, and medical uses of composites Covers new technologies with a special focus on nanocomposites and multifunctional materials, important for many areas, including structures and electronics Contains approximately 85% newly commissioned articles, with 15% of articles updated from the previous edition

Electrical Engineering

This book presents the proceedings of Fatigue Durability India 2016, which was held on September 28–30 at J N Tata Auditorium, Indian Institute of Science, Bangalore. This 2nd International Conference & Exhibition brought international industrial experts and academics together on a single platform to facilitate the exchange of ideas and advances in the field of fatigue, durability and fracture mechanics and its applications. This book comprises articles on a broad spectrum of topics from design, engineering, testing and computational evaluation of components and systems for fatigue, durability, and fracture mechanics. The topics covered include interdisciplinary discussions on working aspects related to materials testing, evaluation of damage, nondestructive testing (NDT), failure analysis, finite element modeling (FEM) analysis, fatigue and fracture, processing, performance, and reliability. The contents of this book will appeal not only to academic researchers, but also to design engineers, failure analysts, maintenance engineers, certification personnel, and R&D professionals involved in a wide variety of industries.

Proceedings of Fatigue Crack Paths (FCP 2003), Parma, Italy 2003

Crack Paths

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 2016 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.

Magnesium Technology 2016

This book presents select peer reviewed proceedings of the International Conference on Applied Mechanical Engineering Research (ICAMER 2019). The book examines various areas of mechanical engineering namely design, thermal, materials, manufacturing and industrial engineering covering topics like FEA, optimization, vibrations, condition monitoring, tribology, CFD, IC engines, turbo-machines, automobiles, manufacturing processes, machining, CAM, additive manufacturing, modelling and simulation of manufacturing processing, optimization of manufacturing processing, supply chain management, and operations management. In addition, recent studies on composite materials, materials characterization, fracture and fatigue, advanced materials, energy storage, green building, phase change materials and structural change monitoring are also covered. Given the contents, this book will be useful for students, researchers and professionals

working in mechanical engineering and allied fields.

Recent Advances in Structural Engineering, Volume 2

Springer Handbook of Experimental Solid Mechanics

This book comprises select peer-reviewed proceedings from the International Conference on Innovations in Mechanical Engineering (ICIME 2019). The volume covers current research in almost all major areas of mechanical engineering, and is divided into six parts: (i) automobile and thermal engineering, (ii) design and optimization, (iii) production and industrial engineering, (iv) material science and metallurgy, (v) nanoscience and nanotechnology, and (vi) renewable energy sources and CAD/CAM/CFD. The topics provide insights into different aspects of designing, modeling, manufacturing, optimizing, and processing with wide ranging applications. The contents of this book can be of interest to researchers and professionals alike.

Composite Materials

Vibration and noise are two interrelated terms in the field of mechanical engineering. Vibration is caused by unbalanced inertial forces and moments whereas noise is the result of such vibrations. Noisy machines have always been a matter of concern. Lesser vibration ensures manufacturing to closer tolerances, lesser wear and tear, and longer fatigue life. Hence, a quieter machine is more cost-effective in the long run. It is now well understood that a quieter machine is in every way a better machine. This book deals with such industrial and automotive noise and vibration, their measurement and control. This textbook stresses on physical concepts and the application thereof to practical problems. The author's four decades of experience in teaching, research and industrial consultancy is reflected in the choice of the solved examples and unsolved problems. The book targets senior undergraduate students in mechanical engineering as well as designers of industrial machinery and layouts. It can readily be used for self-study by practicing designers and engineers.

Structural Integrity Assessment

Fracture Mechanics is an essential tool to evaluate whether a component is likely to fail or not. This book has been written in a simple and step-wise manner to help readers familiarise with the basic and advanced topics. Additionally it has over 185 illustrations to further reinforce and simplify the learning process. With this coverage, the book will be useful to professionals and students of engineering.

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