Test Ingegneria Polito Simulazione

The latest developments in the field of hybrid electric vehicles Hybrid Electric Vehicles provides an introduction to hybrid vehicles, which include purely electric, hybrid electric, hybrid hydraulic, fuel cell vehicles, plug-in hybrid electric, and off-road hybrid vehicular systems. It focuses on the power and propulsion systems for these vehicles, including issues related to power and energy management. Other topics covered include hybrid vs. pure electric, HEV system architecture (including plug-in & charging control and hydraulic), off-road and other industrial utility vehicles, safety and EMC, storage technologies, vehicular power and energy management, diagnostics and prognostics, and electromechanical vibration issues. Hybrid Electric Vehicles, Second Edition is a comprehensively updated new edition with four new chapters covering recent advances in hybrid vehicle technology. New areas covered include battery modelling, charger design, and wireless charging. Substantial details have also been included on the architecture of hybrid excavators in the chapter related to special hybrid vehicles. Also included is a chapter providing an overview of hybrid vehicle technology, which offers a perspective on the current debate on sustainability

and the environmental impact of hybrid and electric vehicle technology. Completely updated with new chapters Covers recent developments, breakthroughs, and technologies, including new drive topologies Explains HEV fundamentals and applications Offers a holistic perspective on vehicle electrification Hybrid Electric Vehicles: Principles and Applications with Practical Perspectives, Second Edition is a great resource for researchers and practitioners in the automotive industry, as well as for graduate students in automotive engineering.
Mathematical Analysis ISpringer

The purpose of the volume is to provide a support for a first course in Mathematics. The contents are organised to appeal especially to Engineering, Physics and Computer Science students, all areas in which mathematical tools play a crucial role. Basic notions and methods of differential and integral calculus for functions of one real variable are presented in a manner that elicits critical reading and prompts a hands-on approach to concrete applications. The layout has a specifically-designed modular nature, allowing the instructor to make flexible didactical choices when planning an introductory lecture course. The book may in fact be employed at three levels of depth. At the elementary level the student is supposed to grasp the very essential ideas and familiarise with the corresponding key techniques. Proofs to the main

results befit the intermediate level, together with several remarks and complementary notes enhancing the treatise. The last, and farthest-reaching, level requires the additional study of the material contained in the appendices, which enable the strongly motivated reader to explore further into the subject. Definitions and properties are furnished with substantial examples to stimulate the learning process. Over 350 solved exercises complete the text, at least half of which guide the reader to the solution. This new edition features additional material with the aim of matching the widest range of educational choices for a first course of Mathematics.

Bayesian Networks: With Examples in R, Second Edition introduces Bayesian networks using a hands-on approach. Simple yet meaningful examples illustrate each step of the modelling process and discuss side by side the underlying theory and its application using R code. The examples start from the simplest notions and gradually increase in complexity. In particular, this new edition contains significant new material on topics from modern machine-learning practice: dynamic networks, networks with heterogeneous variables, and model validation. The first three chapters explain the whole process of Bayesian network modelling, from structure learning to parameter learning to inference. These chapters cover discrete, Gaussian, and

conditional Gaussian Bayesian networks. The following two chapters delve into dynamic networks (to model temporal data) and into networks including arbitrary random variables (using Stan). The book then gives a concise but rigorous treatment of the fundamentals of Bayesian networks and offers an introduction to causal Bayesian networks. It also presents an overview of R packages and other software implementing Bayesian networks. The final chapter evaluates two real-world examples: a landmark causal protein-signalling network published in Science and a probabilistic graphical model for predicting the composition of different body parts. Covering theoretical and practical aspects of Bayesian networks, this book provides you with an introductory overview of the field. It gives you a clear, practical understanding of the key points behind this modelling approach and, at the same time, it makes you familiar with the most relevant packages used to implement real-world analyses in R. The examples covered in the book span several application fields, data-driven models and expert systems, probabilistic and causal perspectives, thus giving you a starting point to work in a variety of scenarios. Online supplementary materials include the data sets and the code used in the book, which will all be made available from https://www.bnlearn.com/book-crc-2ed/ ??

???????????????

This introduction can be used, at the beginning graduate level, for a one-semester course on probability theory or for self-direction without benefit of a formal course; the measure theory needed is developed in the text. It will also be useful for students and teachers in related areas such as finance theory, electrical engineering, and operations research. The text covers the essentials in a directed and lean way with 28 short chapters, and assumes only an undergraduate background in mathematics. Readers are taken right up to a knowledge of the basics of Martingale Theory, and the interested student will be ready to continue with the study of more advanced topics, such as Brownian Motion and Ito Calculus, or Statistical Inference.

* Joey F. George I was honored to be asked to open the VI Conference of the Italian Chapter of the Association for Information Systems (ItAIS), held in Olbia, on the Costa Smeralda of Sardinia, Italy, in October 2009. Over 90 research papers were presented over two days, and over 120 people attended the conference. Each day, five par- lel sessions featured papers on diverse information systems topics. Session themes included Information and Knowledge Management; Organizational Change and Impact of ICT; IS Quality, Metrics and Impact; E-Justice and Ethics of Information Systems; Information Systems

Development and Design Methodo- gies; E-Services in Public and Private Sectors; Innovation Transfer of IT Research Projects; the Strategic Role of Information Systems; Accounting Management and Information Systems; Human Computer Interaction; and Emerging Issues in a Globalized and Interconnected World. The majority of attendees were from Italy, which would be expected for a meeting of the Italian Chapter of AIS. However, as much as 30% of participants came from elsewhere, from other parts of Europe to be sure, but also from as far away as Nigeria, Mexico and Australia. That the conference was so decidedly international provides support for the 2009 con- rence theme, "Achieving Fusion in the Interconnected World. " Amid lively d- cussion and intellectual exchanges, professional networks were extended well beyond the Costa Smeralda and new connections and friendships were made.

Introducing the reader to the mathematics beyond complex networked systems, these lecture notes investigate graph theory, graphical models, and methods from statistical physics. Complex networked systems play a fundamental role in our society, both in everyday life and in scientific research, with applications ranging from physics and biology to economics and finance. The book is self-contained, and requires only an undergraduate mathematical background. Dante (1265-1321) is the greatest of Italian poets and his DIVINE COMEDY is the finest of all Christian allegories. To the consternation of his more academic admirers, who

believed Latin to be the only proper language for dignified verse, Dante wrote his COMEDY in colloquial Italian, wanting it to be a poem for the common reader. This edition is translated by, and includes an Introduction by, Dorothy L. Sayers.

This practical introductory guide to injection molding simulation is aimed at both practicing engineers and students. It will help the reader to innovate and improve part design and molding processes, essential for efficient manufacturing. A user-friendly, case-study-based approach is applied, enhanced by many illustrations in full color. The book is conceptually divided into three parts: Chapters 1–5 introduce the fundamentals of injection molding, focusing the factors governing molding quality and how molding simulation methodology is developed. As they are essential to molding quality, the rheological, thermodynamic, thermal, mechanical, kinetic properties of plastics are fully elaborated in this part, as well as curing kinetics for thermoset plastics. Chapters 6–11 introduce CAE verification of design, a valuable tool for both part and mold designers toward avoiding molding problems in the design stage and to solve issues encountered in injection molding. This part covers design guidelines of part, gating, runner, and cooling channel systems. Temperature control in hot runner systems, prediction and control of warpage, and fiber orientation are also discussed. Chapters 12–17 introduce research and development in innovative molding, illustrating how CAE is applied to advanced molding techniques, including co-/bi-Injection molding, gas-/water-assisted injection molding, foam injection molding, powder injection molding, resin transfer molding, and integrated circuit packaging. The authors come from the creative simulation team at CoreTech System (Moldex3D), winner of the PPS James L. White Innovation Award 2015. Several CAE case study exercises for execution

in the Moldex3D software are included to allow readers to practice what they have learned and test their understanding. From an award-winning anthropologist, a lively, accessible, and irreverent introduction to the field What is anthropology? What can it tell us about the world? Why, in short, does it matter? For well over a century, cultural anthropologists have circled the globe, from Papua New Guinea to California, uncovering surprising insights about how humans organize their lives and articulate their values. In the process, anthropology has done more than any other discipline to reveal what culture means and why it matters. By weaving together examples and theories from around the world, Matthew Engelke provides a lively, accessible, and at times irreverent introduction to anthropology, covering a wide range of classic and contemporary approaches, subjects, and anthropologists. Presenting memorable cases, he encourages readers to think deeply about key concepts that anthropologists use to make sense of the world. Along the way, he shows how anthropology helps us understand other cultures and points of view—but also how, in doing so, it reveals something about ourselves and our own cultures, too. This open access book offers a selection of research papers and case studies presented at the 3rd international conference "Smart and Sustainable Planning for Cities and Regions", held in December 2019 in Bolzano, Italy, and explores the concept of smart and sustainable planning, including top contributions from academics, policy makers, consultants and other professionals. Innovation processes such as co-design and co-creation help establish collaborations that engage with stakeholders in a trustworthy and transparent environment while answering the need for new value propositions. The importance of an integrated, holistic approach is widely recognized to break down silos in local government, in particular, when aimed at achieving a

better integration of climate-energy planning. Despite the ongoing urbanization and polarization processes, new synergies between urban and rural areas emerge, linking development opportunities to intrinsic cultural, natural and man-made landscape values. The increasing availability of big, real-time urban data and advanced ICT facilitates frequent assessment and continuous monitoring of performances, while allowing fine-tuning as needed. This is valid not only for individual projects but also on a wider scale. In addition, and circling back to the first point, (big) urban data and ICT can be of enormous help in facilitating engagement and co-creation by raising awareness and by providing insight into the local consequences of specific plans. However, this potential is not yet fully exploited in standard processes and procedures, which can therefore lack the agility and flexibility to keep up with the pulse of the city and dynamics of society. The book provides a multi-disciplinary outlook based on experience to orient the reader in the giant galaxy of smart and sustainable planning, support the transposition of research into practice, scale up visionary approaches and design groundbreaking planning policies and tools. Sound System Engineering Third Edition is a complete revision and expansion of the former work. Written by two leading authorities in the field of audio engineering, this highly respected guide covers the fundamentals necessary for the understanding of today's systems as well as for those systems yet to come. The space formerly occupied by outdated photographs of manufacturers' product and of older system installations has now been filled with new measurements and discussions of the measurement process. The "Mathematics for Audio chapter has been expanded to include the mathematics of phasors. The "Interfacing Electrical and Acoustic Systems chapter has a completely new section covering the analysis of alternating current

circuits. Additionally, system gain structure is now treated by both the available input power method and the voltage only method, complete with illustrations of each. All chapters dealing with loudspeaker directivity and coverage, the acoustic environment, room acoustics, speech intelligibility, and acoustic gain appear in up to date versions. In addition there is new material on signal delay and synchronization and equalization. There are completely new chapters on microphones, loudspeakers and loudspeaker arrays including line arrays with steering and beam-width control, and signal processing, both analog and digital. The book runs the gamut of sound system design from the simplest all-analog paging system to the largest multipurpose digital systems. In writing this third edition, the authors kept in mind the needs of sound system installers, sound system service technicians, and sound system designers. All three groups will find the material to be useful for everyday work as well as beneficial in the furtherance of their overall audio education.

Fluid flows are characterized by uncertain inputs such as random initial data, material and flux coefficients, and boundary conditions. The current volume addresses the pertinent issue of efficiently computing the flow uncertainty, given this initial randomness. It collects seven original review articles that cover improved versions of the Monte Carlo method (the so-called multi-level Monte Carlo method (MLMC)), moment-based stochastic Galerkin methods and modified versions of the stochastic collocation methods that use adaptive stencil selection of the ENO-WENO type in both physical and stochastic space. The methods are also complemented by concrete applications such as flows around aerofoils and rockets, problems of aeroelasticity (fluid-structure interactions), and shallow water flows for propagating water waves. The wealth of numerical examples provide evidence on the suitability of each proposed method

as well as comparisons of different approaches.
This book contains the papers presented at the
International Joint Conference on Mechanics, Design
Engineering and Advanced Manufacturing (JCM
2018), held on 20-22 June 2018 in Cartagena,
Spain. It reports on cutting-edge topics in product
design and manufacturing, such as industrial
methods for integrated product and process design;
innovative design; and computer-aided design.
Further topics covered include virtual simulation and
reverse engineering; additive manufacturing; product
manufacturing; engineering methods in medicine
and education; representation techniques; and
nautical, aeronautics and aerospace design and
modeling. The book is divided into six main sections,
reflecting the focus and primary themes of the
conference. The contributions presented here will
not only provide researchers, engineers and experts
in a range of industrial engineering subfields with
extensive information to support their daily work;
they are also intended to stimulate new research
directions, advanced applications of the methods
discussed, and future interdisciplinary collaborations.
Questo libro vuole essere un ausilio didattico per gli
studenti dei corsi di Ricerca Operativa e di
Ottimizzazione per le Facoltà Scientifiche. Vengono
considerate alcune delle tematiche di base della
Ricerca Operativa e dell'Ottimizzazione:
Programmazione Lineare, Programmazione Lineare

Intera, Teoria della Complessità Computazionale e Teoria dei Grafi. Particolare rilievo viene dato alla Programmazione Lineare Intera, con un'esposizione delle più recenti tecniche di risoluzione ed in particolare del metodo branch-and-cut. Il lavoro è corredato da numerosi esempi ed esercizi svolti. As an essential component for economic growth, energy has a significant impact on the global economy. The need to meet growing energy demand has prompted cutting-edge innovation in clean technology in an attempt to realise environmental and cost objectives, whilst ensuring the security of energy supply. This Handbook offers a comprehensive review of the economics of energy, including contributions from a distinguished array of international specialists. It provides a thorough discussion of the major research issues in this topical field of economics. Themes addressed include the theory of energy supply, demand and policy, empirical modelling of energy demand, holistic energy models, an analysis of coal, gas, electricity, oil and the markets within which they operate, and a discussion of the current key energy policy issues. The topics of pricing, transmission, regulation, security, energy efficiency, new technologies and climate change are also discussed. The International Handbook on the Economics of Energy presents a comprehensive overview of the state-of-the-art research making it an indispensable

reference for researchers, advanced students, practitioners and policy-makers alike.

In this much needed resource, Maryellen Weimer-one of the nation's most highly regarded authorities on effective college teaching-offers a comprehensive work on the topic of learner-centered teaching in the college and university classroom. As the author explains, learner-centered teaching focuses attention on what the student is learning, how the student is learning, the conditions under which the student is learning, whether the student is retaining and applying the learning, and how current learning positions the student for future learning. To help educators accomplish the goals of learner-centered teaching, this important book presents the meaning, practice, and ramifications of the learner-centered approach, and how this approach transforms the college classroom environment. Learner-Centered Teaching shows how to tie teaching and curriculum to the process and objectives of learning rather than to the content delivery alone.

It is 1804, the year that Meriwether Lewis, William Clark, and the Corps of Discovery set out for their now-legendary exploration of the Louisiana Purchase, departing St. Louis to travel across the continent to the Pacific Ocean and back. This fictionalized biography of Lewis and Clark's journey introduces Seaman, a 150-pound Newfoundland dog and unheralded member of the Corps, to young

historians. Seaman travels the long journey with the
Corps, playing a key role in the expedition's success
by catching and retrieving game, and protecting the
team from wild animals and hostile Native
Americans. Gail Langer Karwoski's thrilling account
of Lewis and Clark's expedition with the Corps of
Discovery, Seaman, and eventually Sacagawea, full
of accurate details drawn from Lewis's own diary
entries, will draw readers into one of the most
exciting chapters in American history.
This book introduces readers to theories that play a
crucial role in modern mathematics, such as
integration and functional analysis, employing a
unifying approach that views these two subjects as
being deeply intertwined. This feature is particularly
evident in the broad range of problems examined,
the solutions of which are often supported by
generous hints. If the material is split into two
courses, it can be supplemented by additional topics
from the third part of the book, such as functions of
bounded variation, absolutely continuous functions,
and signed measures. This textbook addresses the
needs of graduate students in mathematics, who will
find the basic material they will need in their future
careers, as well as those of researchers, who will
appreciate the self-contained exposition which
requires no other preliminaries than basic calculus
and linear algebra.
This textbook employs a technical and quantitative

approach to explain subsurface hydrology and hydrogeology, and to offer a comprehensive overview of groundwater-related topics such as flow in porous media, aquifer characterization, contaminant description and transport, risk assessment, and groundwater remediation. It describes the characterization of subsurface flow of pristine and polluted water and provides readers with easily applicable tools for the design of water supply systems, drinking-water source protection, and remediation interventions. Specific applications range from groundwater exploitation as a drinking water supply to the remediation of contaminated aquifers, from the definition and safeguarding of drinking-water sources to the assessment of human health risks in connection with groundwater contamination events. The book represents an ideal learning resource for upper-undergraduate and graduate students of civil engineering, environmental engineering, and geology, as well as practitioners in the fields of water resource management and environmental protection who are interested in groundwater engineering and technical hydrogeology.

Special topic volume with invited peer reviewed papers only

Field-coupled nanocomputing (FCN) paradigms offer fundamentally new approaches to digital information processing that do not utilize transistors or require

charge transport. Information transfer and computation are achieved in FCN via local field interactions between nanoscale building blocks that are organized in patterned arrays. Several FCN paradigms are currently under active investigation, including quantum-dot cellular automata (QCA), molecular quantum cellular automata (MQCA), nanomagnetic logic (NML), and atomic quantum cellular automata (AQCA). Each of these paradigms has a number of unique features that make it attractive as a candidate for post-CMOS nanocomputing, and each faces critical challenges to realization. This State-of-the-Art-Survey provides a snapshot of the current developments and novel research directions in the area of FCN. The book is divided into five sections. The first part, Field-Coupled Nanocomputing Paradigms, provides valuable background information and perspectives on the QDCA, MQCA, NML, and AQCA paradigms and their evolution. The second section, Circuits and Architectures, addresses a wide variety of current research on FCN clocking strategies, logic synthesis, circuit design and test, logic-in-memory, hardware security, and architecture. The third section, Modeling and Simulation, considers the theoretical modeling and computer simulation of large FCN circuits, as well as the use of simulations for gleaning physical insight into elementary FCN building blocks. The fourth section, Irreversibility and Dissipation, considers the dissipative consequences of irreversible information loss in FCN circuits, their quantification, and their connection to circuit structure. The fifth section, The Road Ahead: Opportunities and Challenges, includes an edited

transcript of the panel discussion that concluded the FCN 13 workshop.

Modelling the genesis and propagation of electrical activity in the heart in quantitative terms is one of the most important recent applications of mathematical modelling in biology. The main research direction, and the most important for biological and medical applications, is the development of realistic models of electrical activity in cardiac tissue and the whole mammalian heart. Recent progress in nonlinear dynamics, advances in computer technology and experiments on cardiac tissue have made feasible the construction of such models. Computational Biology of the Heart is the first book to provide a comprehensive survey of recent research together with a systematic overview of the subject. The contributions, all written by experts in the different areas of the subject, cover all main aspects of whole heart modelling: from excitation in single cells, to two and three dimensional models of cardiac tissue and the whole heart. Various computational models and techniques are described and then applied to reconstruct and visualise modelled activity in both normal and pathological heart tissues. The models are nonlinear and use techniques of ordinary differential equations, partial differential equations and eikonal equations. The book also provides a review of modelling cardiac contraction, mapping electrical activity from electrocardiograms, and recent experimental observations of wave propagation in the whole heart. Graduate students and researchers in such areas as applied mathematical biology, clinical physiology and

cardiology will find this book to be an invaluable resource for their work.

Over the past 20 years, software architectures have significantly contributed to the development of complex and distributed systems. Nowadays, it is recognized that one of the critical problems in the design and development of any complex software system is its architecture, i.e. the organization of its architectural elements. Software Architecture presents the software architecture paradigms based on objects, components, services and models, as well as the various architectural techniques and methods, the analysis of architectural qualities, models of representation of architectural templates and styles, their formalization, validation and testing and finally the engineering approach in which these consistent and autonomous elements can be tackled.

Preface to the First Edition This textbook is an introduction to Scienti?c Computing. We will illustrate several numerical methods for the computer solution of c- tain classes of mathematical problems that cannot be faced by paper and pencil. We will show how to compute the zeros or the integrals of continuous functions, solve linear systems, approximate functions by polynomials and construct accurate approximations for the solution of di?erential equations. With this aim, in Chapter 1 we will illustrate the rules of the game thatcomputersadoptwhenstoringandoperatingwith realandcomplex numbers, vectors and matrices. In order to make our presentation concrete and appealing we will 1 adopt the programming environment MATLAB as a

faithful c- panion. We will gradually discover its principal commands, statements and constructs. We will show how to execute all the algorithms that we introduce throughout the book. This will enable us to furnish an - mediate quantitative assessment of their theoretical properties such as stability, accuracy and complexity. We will solve several problems that will be raisedthrough exercises and examples, often stemming from s- ci?c applications.

Le Corbusier's Modulor—a fundamental work in the history of architecture—as a beautiful facsimile edition. The book begins by introducing signals and systems, and then discusses Time-Domain analysis and Frequency-Domain analysis for Continuous-Time systems. It also covers Z-transform, state-space analysis and system synthesis. The author provides abundant examples and exercises to facilitate learning, preparing students for subsequent courses on circuit analysis and communication theory.

Nanostructured Zinc Oxide covers the various routes for the synthesis of different types of nanostructured zinc oxide including; 1D (nanorods, nanowires etc.), 2D and 3D (nanosheets, nanoparticles, nanospheres etc.). This comprehensive overview provides readers with a clear understanding of the various parameters controlling morphologies. The book also reviews key properties of ZnO including optical, electronic, thermal, piezoelectric and surface properties and techniques in order to tailor key properties. There is a large emphasis in the book on ZnO nanostructures and their role in optoelectronics. ZnO is very interesting and widely investigated material for a number of applications. This book presents up-to-date information about

the ZnO nanostructures-based applications such as gas sensing, pH sensing, photocatalysis, antibacterial activity, drug delivery, and electrodes for optoelectronics. Reviews methods to synthesize, tailor, and characterize 1D, 2D, and 3D zinc oxide nanostructured materials Discusses key properties of zinc oxide nanostructured materials including optical, electronic, thermal, piezoelectric, and surface properties Addresses most relevant zinc oxide applications in optoelectronics such as light-emitting diodes, solar cells, and sensors

If you are a Java developer who is new to computer vision and would like to learn through application development, then this book is for you. You are expected to have a mobile device running Android 2.2 (Froyo) or greater, including a camera. Experience in Java is a must.

This book comprises a selection of the top contributions presented at the second international conference "Smart and Sustainable Planning for Cities and Regions 2017", held in March 2017 in Bolzano, Italy. Featuring forty-six papers by policy-makers, academics and consultants, it discusses current groundbreaking research in smart and sustainable planning, including the progress made in overcoming cities' challenges towards improving the quality of life. Climate change adaptation and mitigation of global warming, generally identified as drivers of global policies, are just the "tip of the iceberg" when it comes to smart energy transition. Indeed, equally relevant towards this current transformation – and key topics in this volume – are ICTs, public spaces and society; next economy for the city; strategies and actions for good governance; urban-rural innovation; rethinking mobility. The book's depth in understanding and insightfulness in re-thinking demonstrate the breaking of new ground in smart and sustainable planning. A new ground that policy-makers, academics and consultants may build upon as a bedrock for

smart and sustainable planning.
Thoroughly classroom-tested and proven to be a valuable self-study companion, Linear Control System Analysis and Design: Sixth Edition provides an intensive overview of modern control theory and conventional control system design using in-depth explanations, diagrams, calculations, and tables. Keeping mathematics to a minimum, the book is designed with the undergraduate in mind, first building a foundation, then bridging the gap between control theory and its real-world application. Computer-aided design accuracy checks (CADAC) are used throughout the text to enhance computer literacy. Each CADAC uses fundamental concepts to ensure the viability of a computer solution. Completely updated and packed with student-friendly features, the sixth edition presents a range of updated examples using MATLAB®, as well as an appendix listing MATLAB functions for optimizing control system analysis and design. Over 75 percent of the problems presented in the previous edition have been revised or replaced.
Developments in Geographic Information Technology have raised the expectations of users. A static map is no longer enough; there is now demand for a dynamic representation. Time is of great importance when operating on real world geographical phenomena, especially when these are dynamic. Researchers in the field of Temporal Geographical Information Systems (TGIS) have been developing methods of incorporating time into geographical information systems. Spatio-temporal analysis embodies spatial modelling, spatio-temporal modelling and spatial reasoning and data mining. Advances in Spatio-Temporal Analysis contributes to the field of spatio-temporal analysis, presenting innovative ideas and examples that reflect current progress and achievements. 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

An energy expert shows why hydrogen can fight climate change and become the fuel of the future We're constantly told that our planet is in crisis; that to save it, we must stop traveling, stop eating meat, even stop having children. But in The Hydrogen Revolution, Marco Alverà argues that we don't need to upend our lives. We just need a new kind of fuel: hydrogen. From transportation and infrastructure to heating and electricity, hydrogen could eliminate fossil fuels, boost economic growth, and encourage global action on climate change. It could also solve the most bedeviling aspects of today's renewable energy—from transporting and storing wind and solar energy and their vulnerability to weather changes to

the inefficiency and limited utility of heavy, short-lasting batteries. The Hydrogen Revolution isn't just a manifesto for a powerful new technology. It's a hopeful reminder that despite the gloomy headlines about the fate of our planet, there's still an opportunity to turn things around.