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KEY=OUTBOARD - SIENA LANE

Suzuki Outboard Motor, DT2

Service Manual

Suzuki 2-140 HP OB 77-1984

[Haynes Manuals N. America. Incorporated](#) DT2, DT3.5, DT4.5, DT5, DT6, DT7.5, DT8, DT9, DT9.9, DT15, DT16, DT20, DT25, DT30, DT40, DT50/50M, DT60, DT65, DT75, DT85, DT115, DT140

Advances in Hydroinformatics

SimHydro 2017 - Choosing The Right Model in Applied Hydraulics

[Springer](#) This book gathers a collection of extended papers based on presentations given during the SimHydro 2017 conference, held in Sophia Antipolis, Nice, France on June 14-16, 2017. It focuses on how to choose the right model in applied hydraulics and considers various aspects, including the modeling and simulation of fast hydraulic transients, 3D modeling, uncertainties and multiphase flows. The book explores both limitations and performance of current models and presents the latest developments in new numerical schemes, high-performance computing, multiphysics and multiscale methods, and better interaction with field or scale model data. It gathers the latest theoretical and innovative developments in the modeling field and presents some of the most advance applications on various water related topics like uncertainties, flood simulation and complex hydraulic applications. Given its breadth of coverage, it addresses the needs and interests of practitioners, stakeholders, researchers and engineers alike.

Marine Propellers and Propulsion

[Butterworth-Heinemann](#) The early development of the screw propeller. Propeller geometry. The propeller environment. The ship wake field, propeller performance characteristics.

Suzuki 2-140 HP OB 77-1984

[Clymer Repair Manuals](#) DT2, DT3.5, DT4.5, DT5, DT6, DT7.5, DT8, DT9, DT9.9, DT15, DT16, DT20, DT25, DT30, DT40, DT50/50M, DT60, DT65, DT75, DT85, DT115, DT140

Aerodynamics of a Lifting System in Extreme Ground Effect

[Springer Science & Business Media](#) This book is dedicated to the memory of a distinguished Russian engineer, Rostislav E. Alexeyev, who was the first in the world to develop the largest ground effect machine - Ekranoplan. One of Alexeyev's design concepts with the aerodynamic configuration of a flying wing can be seen on the front page. The book presents a description of a mathematical model of flow past a lifting system, performing steady and unsteady motions in close proximity to the underlying solid surface (ground). This case is interesting for practical purposes because both the aerodynamic and the economic efficiency of the system near the ground are most pronounced. Use of the method of matched asymptotic expansions enables closed form solutions for the aerodynamic characteristics of the wings-in-ground effect. These can be used for design, identification, and processing of experimental data in the course of developing ground effect vehicles. The term extreme ground effect, widely used through out the book, is associated with very small relative ground clearances of the order of 10% or less. The theory of a lifting surface, moving in immediate proximity to the ground, represents one of the few limiting cases that can be treated analytically. The author would like to acknowledge that this work has been influenced by the ideas of Professor Sheila E. Widnall, who was the first to apply the matched asymptotics techniques to treat lifting flows with the ground effect. Saint Petersburg, Russia February 2000 Kirill V. Rozhdestvensky Contents 1. Introduction.

Energy Harvesting

Solar, Wind, and Ocean Energy Conversion Systems

[CRC Press](#) Also called energy scavenging, energy harvesting captures, stores, and uses "clean" energy sources by employing interfaces, storage devices, and other units. Unlike conventional electric power generation systems, renewable energy harvesting does not use fossil fuels and the generation units can be decentralized, thereby significantly reducing transmission and distribution losses. But advanced technical methods must be developed to increase the efficiency of devices in harvesting energy from environmentally friendly, "green" resources and converting them into electrical energy. Recognizing this need, Energy Harvesting: Solar, Wind, and Ocean Energy Conversion Systems describes various energy harvesting technologies, different topologies, and many types of power electronic interfaces for stand-alone utilization or grid connection of energy harvesting applications. Along with providing all the necessary concepts and theoretical background, the authors develop simulation models throughout the text to build a practical understanding of system analysis and modeling. With a focus on solar energy, the first chapter discusses the I-V characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, sun tracking systems, maximum power point tracking systems, shading effects, and power electronic interfaces for grid-connected and stand-alone PV systems. It also presents sizing criteria for applications and modern solar energy applications, including residential, vehicular, naval, and space applications. The next chapter reviews different types of wind turbines and electrical machines as well as various power electronic interfaces. After explaining the energy generation technologies, optimal operation principles, and possible utilization techniques of ocean tidal energy harvesting, the book explores near- and offshore

approaches for harvesting the kinetic and potential energy of ocean waves. It also describes the required absorber, turbine, and generator types, along with the power electronic interfaces for grid connection and commercialized ocean wave energy conversion applications. The final chapter deals with closed, open, and hybrid-cycle ocean thermal energy conversion systems.

Ultrafast Nonlinear Optics

Springer Science & Business Media The field of ultrafast nonlinear optics is broad and multidisciplinary, and encompasses areas concerned with both the generation and measurement of ultrashort pulses of light, as well as those concerned with the applications of such pulses. Ultrashort pulses are extreme events - both in terms of their durations, and also the high peak powers which their short durations can facilitate. These extreme properties make them powerful experiment tools. On one hand, their ultrashort durations facilitate the probing and manipulation of matter on incredibly short timescales. On the other, their ultrashort durations can facilitate high peak powers which can drive highly nonlinear light-matter interaction processes. Ultrafast Nonlinear Optics covers a complete range of topics, both applied and fundamental in nature, within the area of ultrafast nonlinear optics. Chapters 1 to 4 are concerned with the generation and measurement of ultrashort pulses. Chapters 5 to 7 are concerned with fundamental applications of ultrashort pulses in metrology and quantum control. Chapters 8 and 9 are concerned with ultrafast nonlinear optics in optical fibres. Chapters 10 to 13 are concerned with the applications of ultrashort pulses in areas such as particle acceleration, microscopy, and micromachining. The chapters are aimed at graduate-student level and are intended to provide the student with an accessible, self-contained and comprehensive gateway into each subject.

Nuclear Fusion

Springer The pursuit of nuclear fusion as an energy source requires a broad knowledge of several disciplines. These include plasma physics, atomic physics, electromagnetics, materials science, computational modeling, superconducting magnet technology, accelerators, lasers, and health physics. Nuclear Fusion distills and combines these disparate subjects to create a concise and coherent foundation to both fusion science and technology. It examines all aspects of physics and technology underlying the major magnetic and inertial confinement approaches to developing nuclear fusion energy. It further chronicles latest developments in the field, and reflects the multi-faceted nature of fusion research, preparing advanced undergraduate and graduate students in physics and engineering to launch into successful and diverse fusion-related research. Nuclear Fusion reflects Dr. Morse's research in both magnetic and inertial confinement fusion, working with the world's top laboratories, and embodies his extensive thirty-five year career in teaching three courses in fusion plasma physics and fusion technology at University of California, Berkeley.

Heusler Alloys

Properties, Growth, Applications

Springer This book gives an overview of the physics of Heusler compounds ranging from fundamental properties of these alloys to their applications. Especially Heusler compounds as half-metallic ferromagnetic and topological insulators are important in condensed matter science due to their potential in magnetism and as materials for energy conversion. The book is written by world-leaders in this field. It offers an ideal reference to researchers at any level.

The Quartz Crystal Microbalance in Soft Matter Research

Fundamentals and Modeling

Springer This book describes the physics of the second-generation quartz crystal microbalance (QCM), a fundamental method of analysis for soft matter at interfaces. From a device for measuring film thickness in vacuum, the quartz crystal microbalance (QCM) has in the past two decades evolved into a versatile instrument for analyzing soft matter at solid/liquid and solid/gas interfaces that found applications in diverse fields including the life sciences, material science, polymer research and electrochemistry. As a consequence of this success, the QCM is now being used by scientists with a wide variety of backgrounds to study an impressive diversity of samples, with intricate data analysis methods being elaborated along the way. It is for these practitioners of the QCM that the book is written. It brings across basic principles behind the technique and the data analysis methods in sufficient detail to be educational and in a format that is accessible to anyone with an undergraduate level knowledge of any of the physical or natural sciences. These principles concern the analysis of acoustic shear waves and build on a number of fundamental physical concepts which many users of the technique do not usually come across. They have counterparts in optical spectroscopy, electrical engineering, quantum mechanics, rheology and mechanics, making this book a useful educational resource beyond the QCM itself. The main focus is the physics of QCM, but as the book describes the behavior of the QCM when exposed to films, droplets, polymer brushes, particles, vesicles, nanobubbles and stick-slip, it also offers insight into the behavior of soft matter at interfaces in a more general sense.

Zero-Carbon Energy Kyoto 2012

Special Edition of the Joint Symposium "Energy Science in the Age of Global Warming" of the Kyoto University Global COE Program and the JGSEE/CEE-KMUTT

Springer Science & Business Media The Global COE is setting out a zero-emission technology roadmap and is promoting socioeconomic studies of energy, studies of new technologies for renewable energies, and research for advanced nuclear energy. It has also established the Global COE Unit for Energy Science Education to support young researchers as they apply their skills and knowledge and a broad international perspective to respond to issues of energy and the environment in our societies. This book follows on the earlier volumes Zero-Carbon Energy Kyoto 2009, 2010, and 2011.

Nanotechnology for Chemical Engineers

Springer The book describes the basic principles of transforming nano-technology into nano-engineering with a particular focus on chemical engineering fundamentals. This book provides vital information about differences between descriptive technology and quantitative engineering for students as well as working professionals in various fields of nanotechnology. Besides chemical engineering principles, the fundamentals of nanotechnology are also covered along with detailed explanation of several specific nanoscale processes from chemical engineering point of view. This information is presented in form of practical examples and case studies that help the engineers and researchers to integrate the processes which can meet the commercial production. It is worth mentioning here that, the main challenge in nanostructure and nanodevices production is nowadays related to the economic point of view. The uniqueness of this book is a balance between important insights into the synthetic methods of nano-structures and nanomaterials and their applications with chemical engineering rules that educates the readers about nanoscale process design, simulation, modelling and optimization. Briefly, the book takes the readers through a journey from fundamentals to frontiers of engineering of nanoscale processes and informs them about industrial perspective research challenges, opportunities and synergism in chemical Engineering and nanotechnology. Utilising this information the readers can make informed decisions on their career and business.

Information Technology and Mobile Communication

International Conference, AIM 2011, Nagpur, Maharashtra, India, April 21-22, 2011, Proceedings

[Springer Science & Business Media](#) This book constitutes the refereed proceedings of the International Conference on Advances in Information Technology and Mobile Communication, AIM 2011, held at Nagpur, India, in April 2011. The 31 revised full papers presented together with 27 short papers and 34 poster papers were carefully reviewed and selected from 313 submissions. The papers cover all current issues in theory, practices, and applications of Information Technology, Computer and Mobile Communication Technology and related topics.

Principles of Vibration and Sound

[Springer Science & Business Media](#) An ideal text for advanced undergraduates, the book provides the foundations needed to understand the acoustics of rooms and musical instruments as well as the basics for scientists and engineers interested in noise and vibration. The new edition contains four new chapters devoted primarily to applications of acoustical principles in everyday life: Microphones and Other Transducers, Sound in Concert Halls and Studios, Sound and Noise Outdoors; and Underwater Sound.

The Interactions between Sediments and Water

Proceedings of the 9th International Symposium on the Interactions between Sediments and Water, held 5–10 May 2002 in Banff, Alberta, Canada

[Springer Science & Business Media](#) This book focuses on sediments as a pollutant in natural freshwater and marine habitats, and as a vector for the transfer of chemicals such as nutrients and contaminants. Sediment-water research is carried out all over the world within a variety of disciplines. The selected papers cover three main topics relating to assessment and/or restoration of disturbed watersheds, sediment-water linkages in terrestrial and aquatic environments and evaluation of sediment and ecological changes in marine and freshwater habitats. Innovative research in both developed and less developed countries is included. Both fundamental research, insight into applied research and system management are covered. The volume will also appeal to readers involved in sediment geochemistry and dynamics, aquatic habitats, water quality, aquatic ecology, river morphology, restoration techniques and catchment management.

Handbook of Weaving

[CRC Press](#) A mixture of science and art, weaving is nearly as old as human history. Despite the many technological advances in the field, however, it is still virtually impossible to control each individual fiber in a woven structure. To help you meet this and other weaving challenges, *Handbook of Weaving* covers every step of the process clearly and systemati

Trauma Biomechanics

Introduction to Accidental Injury

[Springer Science & Business Media](#) The 2004 World Health Day is dedicated to the theme of road safety by the World Health Organization (WHO) due mostly to the enormous socio economic costs attributed to trafik accidents. More than 140,000 people are injured, 3,000 killed, and 15,000 disabled for life everyday on the world's roads. The field of trauma biomechanics, or injury biomechanics, uses the principles of mechanics to study the response and tolerance level of biological tissues under extreme loading conditions. Through an understanding of mechanical factors that influence the function and structure of human tissues, countermeasures can be developed to alleviate or even eliminate such injuries. This book, *Trauma-Biomechanics*, surveys a wide variety of topics in injury biomechanics including anatomy, injury classification, injury mechanism, and injury criteria. It is the first collection I am aware of that lists regional injury reference values, or injury criterion, either currently in use or proposed by both U. S. and European communities. Although the book is meant to be an introduction for medical doctors and engineers who are beginners in the field of injury biomechanics, sufficient references are provided for those who wish to conduct further research, and even established researchers will find it useful as a reference for finding the biomechanical background of each proposed injury mechanism and injury criterion.

Spirals and Vortices

In Culture, Nature, and Science

[Springer](#) This richly illustrated book explores the fascinating and ubiquitous occurrence of spirals and vortices in human culture and in nature. Spiral forms have been used as elements in the arts for thousands of years, whereas their role in nature and science - from DNA and sea shells to galaxies - is still a topic of investigation in numerous fields. Following an introduction to the cultural history of spiral forms, the book presents contributions from leading experts, who describe the origins, mechanisms and dynamics of spirals and vortices in their special fields. As a whole the book provides a valuable source of information, while also taking the reader on an aesthetic and scientific journey through the world of spiral forms.

Data Mining with Decision Trees

Theory and Applications

[World Scientific](#) This is the first comprehensive book dedicated entirely to the field of decision trees in data mining and covers all aspects of this important technique. Decision trees have become one of the most powerful and popular approaches in knowledge discovery and data mining, the science and technology of exploring large and complex bodies of data in order to discover useful patterns. The area is of great importance because it enables modeling and knowledge extraction from the abundance of data available. Both

theoreticians and practitioners are continually seeking techniques to make the process more efficient, cost-effective and accurate. Decision trees, originally implemented in decision theory and statistics, are highly effective tools in other areas such as data mining, text mining, information extraction, machine learning, and pattern recognition. This book invites readers to explore the many benefits in data mining that decision trees offer: Self-explanatory and easy to follow when compacted Able to handle a variety of input data: nominal, numeric and textual Able to process datasets that may have errors or missing values High predictive performance for a relatively small computational effort Available in many data mining packages over a variety of platforms Useful for various tasks, such as classification, regression, clustering and feature selection

Analysis, Retrieval and Delivery of Multimedia Content

[Springer Science & Business Media](#) Covering some of the most cutting-edge research on the delivery and retrieval of interactive multimedia content, this volume of specially chosen contributions provides the most updated perspective on one of the hottest contemporary topics. The material represents extended versions of papers presented at the 11th International Workshop on Image Analysis for Multimedia Interactive Services, a vital international forum on this fast-moving field. Logically organized in discrete sections that approach the subject from its various angles, the content deals in turn with content analysis, motion and activity analysis, high-level descriptors and video retrieval, 3-D and multi-view, and multimedia delivery. The chapters cover the finest detail of emerging techniques such as the use of high-level audio information in improving scene segmentation and the use of subjective logic for forensic visual surveillance. On content delivery, the book examines both images and video, focusing on key subjects including an efficient pre-fetching strategy for JPEG 2000 image sequences. Further contributions look at new methodologies for simultaneous block reconstruction and provide a trellis-based algorithm for faster motion-vector decision making.

Advanced Structural Materials

Properties, Design Optimization, and Applications

[CRC Press](#) A snapshot of the central ideas used to control fracture properties of engineered structural metallic materials, *Advanced Structural Materials: Properties, Design Optimization, and Applications* illustrates the critical role that advanced structural metallic materials play in aerospace, biomedical, automotive, sporting goods, and other industries in the twenty-first century. The book presents an overview of the structure, properties, and applications of these materials, including the basic ideas behind their design. It contains examples and accessible language, elucidating the basic concepts that guide the development of new alloys and composite materials. With in-depth reviews from leading contributors, the text develops an understanding of the breadth and depth of advances in the field. It begins with a broad introduction to advanced structural materials, then examines materials at the frontiers of emerging applications such as biomaterials, MEMS, amorphous materials, and nanotechnology. The chapter authors are experts in their own right and they assume no prior knowledge of a given material system, delineating the fundamental concepts and applications of advanced structural materials. The rich array of carefully selected topics provides useful insights into the structure, properties, and applications of advanced structural materials.

Advances in Condensed-Matter and Materials Physics

Rudimentary Research to Topical Technology

[BoD – Books on Demand](#) This book, *Condensed Matter and Material Physics*, incorporates the work of multiple authors to enhance the theoretical as well as experimental knowledge of materials. The investigation of crystalline solids is a growing need in the electronics industry. Micro and nano transistors require an in-depth understanding of semiconductors of different groups. Amorphous materials, on the other hand, as non-equilibrium materials are widely applied in sensors and other medical and industrial applications. Superconducting magnets, composite materials, lasers, and many more applications are integral parts of our daily lives. Superfluids, liquid crystals, and polymers are undergoing active research throughout the world. Hence profound information on the nature and application of various materials is in demand. This book bestows on the reader a deep knowledge of physics behind the concepts, perspectives, characteristic properties, and prospects. The book was constructed using 10 contributions from experts in diversified fields of condensed matter and material physics and its technology from over 15 research institutes across the globe.

Geologic Hazards

A Field Guide for Geotechnical Engineers

[CRC Press](#) Geologic hazards pose the greatest threat to human safety for any geotechnical undertaking, but it is ultimately the engineer's ability to recognize and cope with these hazards that will determine the safety of life and property. Armed with *Geologic Hazards: A Field Guide for Geotechnical Engineers* you will be able to properly recognize, understand various geologic hazards, and provide safe and economical construction. Eminent expert Roy E. Hunt thoroughly examines the potential for slope failures, earthquakes, ground subsidence, collapse, and expansion. Using a clear conceptual approach, he explains what measures are available to minimize or eliminate the risks associated with each of these geologic hazards. The book sets forth the basis for recognizing, understanding, and treating geologic hazards, using general concepts rather than rigorous mathematical analyses. The author covers the prediction of slope failures through recognition of geologic and other factors that govern failure, the treatment of slopes that are potentially unstable and pose a danger to some existing development, the design and construction of stable cut slopes and sidehill fills, and the stabilization of failed slopes. He provides the foundation for determining the potential for surface movements and for preventing or controlling their effects. A section on earthquakes summarizes and links all of the aspects of earthquakes including their causes, characteristics, and surface effects. It provides a thorough grounding in how to recognize hazard potential and minimize the consequences. There is no field within geotechnical engineering in which the state of the art is changing so rapidly. Providing the latest information, this resource is a useful tool for designing new projects and redesigning old ones.

Soul Stories

How Attachment Shapes Our Lives

[Lulu Press, Inc](#) The case studies in the book illustrate how our earliest relationships affect all future relationships. This book shows that where early attachments have been damaged, people suffer throughout their lives. The stories highlight how therapy can help to understand and heal the damage in order to create fulfilling relationships in the future.

Simulation and Modeling Methodologies, Technologies and Applications

7th International Conference, SIMULTECH 2017 Madrid, Spain, July 26–28, 2017 Revised Selected Papers

Springer This book highlights a set of selected, revised and extended papers from the 7th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH 2017), held in Madrid, Spain, on July 26 to 28, 2017. The conference brought together researchers, engineers and practitioners whose work involves methodologies in and applications of modeling and simulation. The papers showcased here represent the very best papers from the Conference, and report on a broad range of new and innovative solutions.

Proceedings of the 12th International Symposium on Computer Science in Sport (IACSS 2019)

Springer This book provides an overview of current activities in the fascinating area between computer science and sports, presenting the state of the art in utilising the latest developments in computer science to support sports coaches and athletes. It covers a broad range of topics reflecting the diversity of this interdisciplinary field, including concepts in informatics like expert systems, modelling, simulation, machine learning, robotics, and sensor integration. Further, it describes applications of computer science in sports, such as alpine skiing, badminton, football, rowing, and table tennis, as well as interesting applications areas of sport like dementia, physiology, training, and space flights. The appeals to informaticians interested in the application field of sports as well as for sports scientists and practitioners looking for advanced methods in their particular sport.

Handbook of Hydraulic Fluid Technology, Second Edition

CRC Press Detailing the major developments of the last decade, the Handbook of Hydraulic Fluid Technology, Second Edition updates the original and remains the most comprehensive and authoritative book on the subject. With all chapters either revised (in some cases, completely) or expanded to account for new developments, this book sets itself apart by approaching hydraulic fluids as a component of a system and focusing on key technological aspects. Written by experts from around the world, the handbook covers all major classes of hydraulic fluids in detail, delving into chemistry, design, fluid maintenance and selection, and other key concepts. It also offers a rigorous overview of hydraulic fluid technology and evaluates the ecological benefits of water and its use as an important alternative technology. This complete overview discusses pumps and motors, valves, and reservoir design, as well as fluid properties and associated topics. These include air entrainment, modulus, lubrication and wear assessment by bench and pump testing, biodegradability, and fire resistance. Contributors also present particularly important material on biodegradable fluids and the use of water as a hydraulic fluid. As the foremost resource on the design, selection, and testing of hydraulic systems and fluids used in engineering applications, this book contains new illustrations, data tables, and practical examples, all updated with essential information on the latest methods. To streamline presentation, relevant content from the first edition has been integrated into this new version, where appropriate. The result is a reference that helps readers develop an unparalleled understanding of the total hydraulic system, including essential hardware, fluid properties, and hydraulic lubricants.

Conceptions of Cosmos

From Myths to the Accelerating Universe: A History of Cosmology

Oxford University Press This book is a historical account of how natural philosophers and scientists have endeavoured to understand the universe at large, first in a mythical and later in a scientific context. Starting with the creation stories of ancient Egypt and Mesopotamia, the book covers all the major events in theoretical and observational cosmology, from Aristotle's cosmos over the Copernican revolution to the discovery of the accelerating universe in the late 1990s. It presents cosmology as a subject including scientific as well as non-scientific dimensions, and tells the story of how it developed into a true science of the heavens. Contrary to most other books in the history of cosmology, it offers an integrated account of the development with emphasis on the modern Einsteinian and post-Einsteinian period. Starting in the pre-literary era, it carries the story onwards to the early years of the 21st century.

Boating

9th International Symposium on High-Temperature Metallurgical Processing

Springer In recent years, global metallurgical industries have experienced fast and prosperous growth. High-temperature metallurgical technology is the backbone to support the technical, environmental, and economical needs for the growth. This collection features contributions covering the advancements and developments of new high-temperature metallurgical technologies and their applications to the areas of processing of minerals; extraction of metals; preparation of metallic, refractory and ceramic materials; treatment and recycling of slag and wastes; and saving of energy and protection of environment. The volume will have a broad impact on the academics and professionals serving the metallurgical industries around the world.

Introduction to Symmetry Analysis Paperback with CD-ROM

Cambridge University Press An introduction to symmetry analysis for graduate students in science, engineering and applied mathematics.

Databases and Information Systems

14th International Baltic Conference, DB&IS 2020, Tallinn, Estonia, June 16-19, 2020, Proceedings

Springer Nature This book constitutes the refereed proceedings of the 14th International Baltic Conference on Databases and Information Systems, DB & IS 2020, held in Tallinn, Estonia, in June 2020.* The 22 revised papers presented were carefully reviewed and selected from 52 submissions. The papers are centered around topics like architectures and quality of information systems, artificial intelligence in information systems, data and knowledge engineering, enterprise and information systems engineering, security of information systems. *The conference was held virtually due to the COVID-19 pandemic.

Artificial Intelligence and Industrial Applications

Artificial Intelligence Techniques for Cyber-Physical, Digital Twin Systems and Engineering Applications

Springer Nature This book gathers selected papers from Artificial Intelligence and Industrial Applications (A2IA'2020), the first installment of an annual international conference organized by ENSAM-Meknes at Moulay Ismail University, Morocco. The 29 papers presented here were carefully reviewed and selected from 141 submissions by an international scientific committee. They address various aspects of artificial intelligence such as digital twin, multiagent systems, deep learning, image processing and analysis, control, prediction, modeling, optimization and design, as well as AI applications in industry, health, energy, agriculture, and education. The book is intended for AI experts, offering them a valuable overview and global outlook for the future, and highlights a wealth of innovative ideas and recent, important advances in AI applications, both of a foundational and practical nature. It will also appeal to non-experts who are curious about this timely and important subject.

Nanoelectronics, Circuits and Communication Systems

Proceeding of NCCS 2019

Springer This book features selected papers presented at the Fifth International Conference on Nanoelectronics, Circuits and Communication Systems (NCCS 2019). It covers a range of topics, including nanoelectronic devices, microelectronics devices, material science, machine learning, Internet of things, cloud computing, computing systems, wireless communication systems, advances in communication 5G and beyond. Further, it discusses VLSI circuits and systems, MEMS, IC design and testing, electronic system design and manufacturing, speech signal processing, digital signal processing, FPGA-based wireless communication systems and FPGA-based system design, Industry 4.0, e-farming, semiconductor memories, and IC fault detection and correction.

The Razorland Trilogy

Enclave, Outpost, Horde

Feiwel & Friends The Razorland Trilogy: Enclave, Outpost, and Horde The New York Times—bestselling trilogy is the story of two young people in an apocalyptic world—facing dangers, and feelings, unlike any they've ever known. Enclave: Fifteen-year-old Deuce lives in a world below New York City which has been decimated by war and plague. As part of her new role as Huntress, Deuce is paired with Fade, another teenage Hunter. When the pair discovers that the neighboring enclave has been decimated by tunnel monsters, the elders refuse to listen to their warnings. And when Deuce and Fade are exiled from the enclave, the girl born in darkness must survive in daylight in the ruins of a city whose population has dwindled to a few dangerous gangs. Outpost: Deuce's whole world has changed. Down below, she was considered an adult. Now, topside in a town called Salvation, she's a "brat" in need of training in the eyes of the townsfolk. To make matters worse, her Hunter partner, Fade, keeps Deuce at a distance. Her feelings for Fade are still strong, but he seems not to want her around anymore. Things have been changing on the surface, just as they did below ground. The monsters don't intend to let Salvation survive, and it may take a girl like Deuce to turn back the tide. Horde: The survival of Salvation is up to Deuce, Fade, Stalker, and Tegan. Deuce decides the only way to fight an army is to raise one. At first, everyone laughs at the idea of a girl leading humanity's forces against the Freaks, but then she proves herself in combat. Can Deuce render a permanent truce with the Freaks? Who will survive? Includes bonus chapters from Ann Aguirres Mortal Danger!

Microsensors, MEMS, and Smart Devices

Wiley-Blackwell Microsensors and MEMS (micro-electro-mechanical systems) are revolutionising the semiconductor industry. A microsystem or the so-called "system-on-a-chip" combines microelectronic circuitry with microsensors and microactuators. This emergent field has seen the development of applications ranging from the electronic nose and intelligent ear to micro-tweezers and the modern ink-jet nozzle. Providing a complete overview of microsensor technologies, this unique reference addresses vital integration issues for the successful application of microsensors, MEMS and smart devices. Features include: * Review of traditional and emerging fabrication processes including bulk and silicon micromachining, microstereolithography and polymer processing methods. * Focus on the use of IDT (interdigital transducer) microsensors in the development of low energy budget, wireless MEMS or micromachines. * Coverage of the latest applications in smart devices including the electronic nose, tongue and finger, along with smart sensors and structures such as smart skin. * An overview of the development of intelligent sensing devices through the use of sensor arrays, parametric compensation of sensor signals and ASIC technology. * Comprehensive appendices outlining vital MEMS material properties, relevant web sites and a guide to key institutions active in the field. Microsensors, MEMS and Smart Devices presents readers with the means to understand and evaluate microsystems. Advanced students and researchers in microelectronics, engineers and developers of microsensor systems will find this comprehensive treatment essential reading. Detailed coverage of material properties makes this an important reference work for mechanical engineers, physicists and material scientists working in the field.

Handbook of Accelerator Physics and Engineering

World Scientific Edited by internationally recognized authorities in the field, this expanded and updated new edition of the bestselling Handbook, containing more than 100 new articles, is aimed at the design and operation of modern particle accelerators. It is intended as a vade mecum for professional engineers and physicists engaged in these subjects. With a collection of more than 2000 equations, 300 illustrations and 500 graphs and tables, here one will find, in addition to the common formulae of previous compilations, hard-to-find, specialized formulae, recipes and material data pooled from the lifetime experience of many of the world's most able practitioners of the art and science of accelerators. The eight chapters include both theoretical and practical matters as well as an extensive glossary of accelerator types. Chapters on beam dynamics and electromagnetic and nuclear interactions deal with linear and nonlinear single particle and collective effects including spin motion, beam-environment, beam-beam, beam-electron, beam-ion and intrabeam interactions. The impedance concept and related calculations are dealt with at length as are the instabilities associated with the various interactions mentioned. A chapter on operational considerations includes discussions on the assessment and correction of orbit and optics errors, real-time feedbacks, generation of short photon pulses, bunch compression, tuning of normal and superconducting linacs, energy recovery linacs, free electron lasers, cooling, space-charge compensation, brightness of light sources, collider luminosity optimization and collision schemes. Chapters on mechanical and electrical considerations present material data and important aspects of component design including heat transfer and refrigeration. Hardware systems for particle sources, feedback systems, confinement and acceleration (both normal conducting and superconducting) receive detailed treatment in a subsystems chapter, beam measurement techniques and apparatus being treated therein as well. The closing chapter gives data and methods for radiation protection computations as well as much data on radiation damage to various materials and devices. A detailed name and subject index is provided together with reliable references to the literature where the most detailed information available on all subjects treated can be found.

Microsensors

Principles and Applications

Wiley Essential update on the development of new processing, packaging and assembly methodologies for microsensor devices, with new coverage on 'system on a chip' and 'laboratory on a chip' The miniaturisation of sensors has been made possible by advances in the technologies originating in the semiconductor industry, and the emergent field of microsensors has grown rapidly over the past ten years. This book updates the successful first edition (published in 1994) to cover the fundamental principles, developments and applications of microsensors. Two new chapters will be included and will provide coverage of both CMOS device processing technologies and smart sensors, in particular BioMEMS and the system-on-chip, lab-on-a-chip, and noise-on-a-chip. Other new sections will update the treatment of optical and magnetic sensors, MOEMS and smart sensor interfacing. Worked examples will be included to illustrate key processes and applications. The end-of-chapter problems will be revised and updated. This is an increasingly important area of research and development. Microsensors are a growing aspect of Microelectronics courses at final year undergraduate and postgraduate level. A thorough update of the well-received first edition is timely. Provides a timely update of a classic reference on this increasingly important field Presents an introduction to sensors and measurement systems and the processing of materials for microsensor fabrication Comprehensive coverage of thermal, magnetic, optical, mechanical, chemical and biological microsensors Updated sections highlighting the development of new processing, packaging and assembly methodologies for microsensor devices New chapter charting the evolution of the smart sensor and microsystem, with coverage of 'system on a chip' and 'laboratory on a chip'

The Age of Inventions

National Geographic School Publishing Discusses turn-of-the-century inventors and the impact of inventions including electricity in the home, the telephone, automobiles, and airplanes.