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Proceedings of the International Conference on Paradigms of Computing, Communication and Data Sciences PCCDS 2020 Springer Nature **This book presents best selected papers presented at the International Conference on Paradigms of Computing, Communication and Data Sciences (PCCDS 2020), organized by National Institute of Technology, Kurukshetra, India, during 1–3 May 2020. It discusses high-quality and cutting-edge research in the areas of advanced computing, communications and data science techniques. The book is a collection of latest research articles in computation algorithm, communication and data sciences, intertwined with each other for efficiency. Enhancing Future Skills and Entrepreneurship 3rd Indo-German Conference on Sustainability in Engineering** Springer Nature **This open access book presents the proceedings of the 3rd Indo-German Conference on Sustainability in Engineering held at Birla Institute of Technology and Science, Pilani, India, on September 16–17, 2019. Intended to foster the synergies between research and education, the conference is one of the joint activities of the BITS Pilani and TU Braunschweig conducted under the auspices of Indo-German Center for Sustainable Manufacturing, established in 2009. The book is divided into three sections: engineering, education and entrepreneurship, covering a range of topics, such as renewable energy forecasting, design & simulation, Industry 4.0, and soft & intelligent sensors for energy efficiency. It also includes case studies on lean and green manufacturing, and life cycle analysis of ceramic products, as well as papers on teaching/learning methods based on the use of learning factories to improve students'problem-solving and personal skills. Moreover, the book discusses high-tech ideas to help the large number of unemployed engineering graduates looking for jobs become tech entrepreneurs. Given its broad scope, it will appeal to academics and industry professionals alike. Agents and Multi-Agent Systems: Technologies and Applications**

2020 14th KES International Conference, KES-AMSTA 2020, June 2020 Proceedings <u>Springer Nature</u> **The book highlights new trends and challenges in research on agents and the new digital and knowledge economy. It includes papers on business process management, agent-based modeling and simulation and anthropic-oriented computing that were originally presented at the 14th International KES Conference on Agents and Multi-Agent Systems: Technologies and Applications (KES-AMSTA 2020), being held as a Virtual Conference in June 17–19, 2020. The respective papers cover topics such as software agents, multi-agent systems, agent modeling, mobile and cloud computing, big data analysis, business intelligence, artificial intelligence, social systems, computer embedded systems and nature inspired manufacturing, all of which contribute to the modern digital economy. Electronic Design Automation for IC System Design, Verification, and Testing** <u>CRC Press</u> **The first of two volumes in the Electronic Design Automation for Integrated Circuits Handbook, Second Edition, Electronic Design Automation for IC System Design, Verification, and Testing thoroughly examines system-level design, microarchitectural design, logic verification, and testing. Chapters contributed by leading experts authoritatively discuss processor modeling and design tools, using performance metrics to select microprocessor cores for integrated circuit (IC) designs, design and verification languages, digital simulation, hardware acceleration and emulation, and much more. New to This Edition: Major updates appearing in the initial phases of the design flow, where the level of abstraction keeps rising to support more functionality with lower non-recurring engineering (NRE) costs Significant revisions reflected in the final phases of the design flow, where the complexity due to smaller and smaller geometries is compounded by the slow progress of shorter wavelength lithography New coverage of cutting-edge applications and approaches realized in the decade since publication of the previous edition—these are illustrated by new chapters on high-level synthesis, system-on-chip (SoC) block-based design, and back-annotating system-level models Offering improved depth and modernity, Electronic Design Automation for IC System Design, Verification, and Testing provides a valuable, state-of-the-art reference for electronic design automation (EDA) students, researchers, and professionals. Principles of Gene Manipulation An Introduction to Genetic Engineering** <u>Univ of California Press</u> **The Psychosocial Implications of Disney Movies** <u>MDPI</u> **In this volume of 15 articles, contributors from a wide range of disciplines present their analyses of Disney movies and Disney music, which are mainstays of popular culture. The power of the Disney brand has heightened the need for academics to question whether Disney's films and music function as a tool of the Western elite that shapes the views of those less empowered. Given its global reach, how the Walt Disney Company handles the role of race, gender, and sexuality in social structural inequality merits serious reflection according to a number of the articles in the volume. On the other hand, other authors argue that Disney productions can help individuals**

cope with difficult situations or embrace progressive thinking. The different approaches to the assessment of Disney films as cultural artifacts also vary according to the theoretical perspectives guiding the interpretation of both overt and latent symbolic meaning in the movies. The authors of the 15 articles encourage readers to engage with the material, showcasing a variety of views about the good, the bad, and the best way forward. Polyelectrolytes Thermodynamics and Rheology Springer This book offers a valuable reference source to graduate and post graduate students, engineering students, research scholars polymer engineers from industry. The book provides the reader with current developments of theoretical models describing the thermodynamics polyelectrolytes as well as experimental findings. A particular emphasis is put on the rheological description of polyelectrolyte solutions and hydrogels. Genetic Engineering Oxford University Press, USA Designed to serve as a textbook for students of biotechnology, life sciences, genetics, microbiology, biochemistry, and other related areas. An Introduction to Genetic Engineering Cambridge University Press The author presents a basic introduction to the world of genetic engineering. Copyright © Libri GmbH. All rights reserved. Communication and Intelligent Systems Proceedings of ICCIS 2019 Springer Nature This book gathers selected research papers presented at the International Conference on Communication and Intelligent Systems (ICCIS 2019), organised by Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jaipur, India and Rajasthan Technical University, Kota, India on 9–10 November 2019. This book presents a collection of state-of-the-art research work involving cutting-edge technologies for communication and intelligent systems. Over the past few years, advances in artificial intelligence and machine learning have sparked new research efforts around the globe, which explore novel ways of developing intelligent systems and smart communication technologies. The book presents single- and multi-disciplinary research on these themes in order to make the latest results available in a single, readily accessible source. Advances in Production Management Systems. Artificial Intelligence for Sustainable and Resilient Production Systems IFIP WG 5.7 International Conference, APMS 2021, Nantes, France, September 5–9, 2021, Proceedings, Part I Springer Nature The five-volume set IFIP AICT 630, 631, 632, 633, and 634 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2021, held in Nantes, France, in September 2021.* The 378 papers presented were carefully reviewed and selected from 529 submissions. They discuss artificial intelligence techniques, decision aid and new and renewed paradigms for sustainable and resilient production systems at four-wall factory and value chain levels. The papers are organized in the following topical sections: Part I: artificial intelligence based optimization techniques for demand-driven manufacturing; hybrid approaches for production planning and scheduling; intelligent systems for manufacturing planning and control in the industry 4.0; learning and

robust decision support systems for agile manufacturing environments; low-code and model-driven engineering for production system; meta-heuristics and optimization techniques for energy-oriented manufacturing systems; metaheuristics for production systems; modern analytics and new AI-based smart techniques for replenishment and production planning under uncertainty; system identification for manufacturing control applications; and the future of lean thinking and practice Part II: digital transformation of SME manufacturers: the crucial role of standard; digital transformations towards supply chain resiliency; engineering of smart-product-service-systems of the future; lean and Six Sigma in services healthcare; new trends and challenges in reconfigurable, flexible or agile production system; production management in food supply chains; and sustainability in production planning and lot-sizing Part III: autonomous robots in delivery logistics; digital transformation approaches in production management; finance-driven supply chain; gastronomic service system design; modern scheduling and applications in industry 4.0; recent advances in sustainable manufacturing; regular session: green production and circularity concepts; regular session: improvement models and methods for green and innovative systems; regular session: supply chain and routing management; regular session: robotics and human aspects; regular session: classification and data management methods; smart supply chain and production in society 5.0 era; and supply chain risk management under coronavirus Part IV: AI for resilience in global supply chain networks in the context of pandemic disruptions; blockchain in the operations and supply chain management; data-based services as key enablers for smart products, manufacturing and assembly; data-driven methods for supply chain optimization; digital twins based on systems engineering and semantic modeling; digital twins in companies first developments and future challenges; human-centered artificial intelligence in smart manufacturing for the operator 4.0; operations management in engineer-to-order manufacturing; product and asset life cycle management for smart and sustainable manufacturing systems; robotics technologies for control, smart manufacturing and logistics; serious games analytics: improving games and learning support; smart and sustainable production and supply chains; smart methods and techniques for sustainable supply chain management; the new digital lean manufacturing paradigm; and the role of emerging technologies in disaster relief operations: lessons from COVID-19 Part V: data-driven platforms and applications in production and logistics: digital twins and AI for sustainability; regular session: new approaches for routing problem solving; regular session: improvement of design and operation of manufacturing systems; regular session: crossdock and transportation issues; regular session: maintenance improvement and lifecycle management; regular session: additive manufacturing and mass customization; regular session: frameworks and conceptual modelling for systems and services efficiency; regular session: optimization of production and transportation systems; regular session: optimization of

supply chain agility and reconfigurability; regular session: advanced modelling approaches; regular session: simulation and optimization of systems performances; regular session: AI-based approaches for quality and performance improvement of production systems; and regular session: risk and performance management of supply chains *The conference was held online. Control in Power Electronics Selected Problems Elsevier The authors were originally brought together to share research and applications through the international Danfoss Professor Programme at Aalborg University in Denmark. Personal computers would be unwieldy and inefficient without power electronic dc supplies. Portable communication devices and computers would also be impractical. High-performance lighting systems, motor controls, and a wide range of industrial controls depend on power electronics. In the near future we can expect strong growth in automotive applications, dc power supplies for communication systems, portable applications, and high-end converters. We are approaching a time when all electrical energy will be processed and controlled through power electronics somewhere in the path from generation to end use. The most up-to-date information available is presented in the text Written by a world renowned leader in the field Nanotechnology Dentistry Applications Hb IOP Publishing Limited This volume presents the applications of Nanotechnology to different fields of dentistry. Recognized dental specialities such as orthodontics, endodontics and prosthodontics have been covered in addition to general dentistry applications of nanotechnology. The book, in a comprehensive fashion, delves into such technologies as drug nanocarriers, nanomaterials, implants and other nanoparticle applications related to dentistry, and shows how these, in turn, will enhance therapeutic effects against dental bacteria and erosion. This book not only presents the current trends in dental therapies but also presents the current research trends and potential applications. A bottom-up approach has been mostly adopted to suit the need of a wide audience including novice researchers and post graduate students. Key Features: Each chapter includes brief review in the initial paragraphs followed by recent trends Content level designed to suit the needs of technicians in addition to novice researchers There is necessary minimum overlap from available literature A number of the chapter authors are highly esteemed researchers in their prospective fields Unique coverage of such topics as nanorobotic local anesthetics, neurotoxticity, nano endodontic sealers, orthodontic nanorobots, nanodiagnostics Proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing ICRCWIP-2014 Springer This volume comprises the proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing. It brings together content from academicians, researchers, and industry experts in areas of Wireless Communication and Image Processing. The volume provides a snapshot of current progress in computational creativity and a glimpse of future possibilities. The

proceedings include two kinds of paper submissions: (i) regular papers addressing foundation issues, describing original research on creative systems development and modeling; and (ii) position papers describing work-in-progress or research directions for computational creativity. This work will be useful to professionals and researchers working in the core areas of wireless communications and image processing. Biosensors for Virus Detection Biosensors have been employed for numerous applications from medical diagnosis, environmental monitoring, pharmaceutical analysis, food quality testing to defence and security purposes. Their development encompasses chemistry, physics, materials science, nanotechnology, and engineering. Being at the intersection of these multiple disciplines, this book is suitable for academic, clinical, and commercial researchers, as well as graduate students. This book reviews the latest studies and developments in the use of a range of biosensor platforms for the analysis of viral infections. Computer Architecture ISCA 2010 International Workshops A4MMC, AMAS-BT, EAMA, WEED, WIOSCA, Saint-Malo, France, June 19-23, 2010, Revised Selected Papers Springer This book constitutes the thoroughly refereed post-conference proceedings of the workshops held at the 37th International Symposium on Computer Architecture, ISCA 2010, in Saint-Malo, France, in June 2010. The 28 revised full papers presented were carefully reviewed and selected from the lectures given at 5 of these workshops. The papers address topics ranging from novel memory architectures to emerging application design and performance analysis and encompassed the following workshops: A4MMC, applications for multi- and many-cores; AMAS-BT, 3rd workshop on architectural and micro-architectural support for binary translation; EAMA, the 3rd Workshop for emerging applications and many-core architectures; WEED, 2nd Workshop on energy efficient design, as well as WIOSCA, the annual workshop on the interaction between operating systems and computer architecture. Advances in Production Management Systems. The Path to Digital Transformation and Innovation of Production Management Systems IFIP WG 5.7 International Conference, APMS 2020, Novi Sad, Serbia, August 30 – September 3, 2020, Proceedings, Part I Springer Nature The two-volume set IFIP AICT 591 and 592 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2020, held in Novi Sad, Serbia, in August/September 2020. The 164 papers presented were carefully reviewed and selected from 199 submissions. They discuss globally pressing issues in smart manufacturing, operations management, supply chain management, and Industry 4.0. The papers are organized in the following topical sections: Part I: advanced modelling, simulation and data analytics in production and supply networks; advanced, digital and smart manufacturing; digital and virtual quality management systems; cloud-manufacturing; cyber-physical production systems and digital twins; IIOT interoperability; supply chain planning and optimization; digital and smart supply chain management; intelligent logistics networks management;

artificial intelligence and blockchain technologies in logistics and DSN; novel production planning and control approaches; machine learning and artificial intelligence; connected, smart factories of the future; manufacturing systems engineering: agile, flexible, reconfigurable; digital assistance systems: augmented reality and virtual reality; circular products design and engineering; circular, green, sustainable manufacturing; environmental and social lifecycle assessments; socio-cultural aspects in production systems; data-driven manufacturing and services operations management; product-service systems in DSN; and collaborative design and engineering Part II: the Operator 4.0: new physical and cognitive evolutionary paths; digital transformation approaches in production management; digital transformation for more sustainable supply chains; data-driven applications in smart manufacturing and logistics systems; data-driven services: characteristics, trends and applications; the future of lean thinking and practice; digital lean manufacturing and its emerging practices; new reconfigurable, flexible or agile production systems in the era of industry 4.0; operations management in engineer-to-order manufacturing; production management in food supply chains; gastronomic service system design; product and asset life cycle management in the circular economy; and production ramp-up strategies for product Hydrological Science (HS) World Scientific This invaluable volume set of Advances in Geosciences continues the excellent tradition of the Asia-Oceania scientific community in providing the most up-to-date research results on a wide range of geosciences and environmental science. This information will be vital to the understanding the effects of climate change, extreme weathers on the most populated region and fastest moving economies in the world. Besides reviews, these volumes contain original papers from many prestigious research institutions which are doing cutting edge study in atmospheric physics, hydrological science and water resource, ocean science and coastal study, planetary exploration and solar system science, seismology, tsunamis, upper atmospheric physics and space science. Biostimulants in Plant Science BoD – Books on Demand Natural-based substances, 'plant biostimulants', have been considered as environmentally friendly alternatives to agrichemicals. Biostimulants may comprise microbial inoculants, humic acids, fulvic acids, seaweed extracts, etc. These biostimulants have biopesticide and biostimulant utilities. Elucidations on direct or microbially mediated functions of biostimulants are presented in this book to illustrate fundamental principles and recent applications underlying this technology. This book has encompassed a cross-section of topics on different concepts to describe effective strategies by using these substances and/or beneficial microorganisms within sustainable agroecosystems. I sincerely hope that the information provided adequately reflects the objectives of this compilation. "One of the first conditions of happiness is that the link between man and nature shall not be broken." Leo Tolstoy Harmony Search and Nature Inspired Optimization Algorithms Theory and

Applications, ICHSA 2018 Springer **The book covers different aspects of real-world applications of optimization algorithms. It provides insights from the Fourth International Conference on Harmony Search, Soft Computing and Applications held at BML Munjal University, Gurgaon, India on February 7–9, 2018. It consists of research articles on novel and newly proposed optimization algorithms; the theoretical study of nature-inspired optimization algorithms; numerically established results of nature-inspired optimization algorithms; and real-world applications of optimization algorithms and synthetic benchmarking of optimization algorithms. Handbook of New Product Development Management** Routledge **Managing new product development is a key area of management, straddling strategy, innovation and entrepreneurship and macro-organizational behaviour. All of the contributorsin the Handbook of New Product Developmentare are well-known and leading exponents to theory of New Product Development and to methods used in practice. They draw upon their experience and work to offer a comprehensive view of the challenges in managing the development of new products. Existing knowledge in the different topics is examined and the key management challenges, and the important gaps in our knowledge are discussed. Most of the chapters draw upon systematic interaction with companies and practice and this is presented in the examples and the case studies cited. The Handbook of New Product Development and Management surveys this area in the context of an overall framework that explains how aspects interact and combine in a successful NPD process. Each chapter outlines open questions and highlights needs for future research. *A comprehensive view of the challenges in managing the development of new products from well-known and leading contributors in the field * The first handbook to fill the gap for a high-level handbook which is valuable to both the academic/practitioner Extended Abstracts Electronic Design Automation for Integrated Circuits Handbook - 2 Volume Set** CRC Press **Electronic design automation (EDA) is among the crown jewels of electrical engineering. Without EDA tools, today's complex integrated circuits (ICs) would be impossible. Doesn't such an important field deserve a comprehensive, in-depth, and authoritative reference? The Electronic Design Automation for Integrated Circuits Handbook is that reference, ranging from system design through physical implementation. Organized for convenient access, this handbook is available as a set of two carefully focused books dedicated to the front- and back-end aspects of EDA, respectively. What's included in the Handbook? EDA for IC System Design, Verification, and Testing This first installment examines logical design, focusing on system-level and micro-architectural design, verification, and testing. It begins with a general overview followed by application-specific tools and methods, specification and modeling languages, high-level synthesis approaches, power estimation methods, simulation techniques, and testing procedures. EDA for IC Implementation, Circuit Design, and Process Technology Devoted to physical design, this second book analyzes the classical RTL to GDS II**

design flow, analog and mixed-signal design, physical verification, analysis and extraction, and technology computer aided design (TCAD). It explores power analysis and optimization, equivalence checking, placement and routing, design closure, design for manufacturability, process simulation, and device modeling. Comprising the work of expert contributors guided by leaders in the field, the Electronic Design Automation for Integrated Circuits Handbook provides a foundation of knowledge based on fundamental concepts and current industrial applications. It is an ideal resource for designers and users of EDA tools as well as a detailed introduction for newcomers to the field. Recent Findings in Intelligent Computing Techniques Proceedings of the 5th ICACNI 2017. Volume 1 This three volume book contains the Proceedings of 5th International Conference on Advanced Computing, Networking and Informatics (ICACNI 2017). The book focuses on the recent advancement of the broad areas of advanced computing, networking and informatics. It also includes novel approaches devised by researchers from across the globe. This book brings together academic scientists, professors, research scholars and students to share and disseminate information on knowledge and scientific research works related to computing, networking, and informatics to discuss the practical challenges encountered and the solutions adopted. The book also promotes translation of basic research into applied investigation and convert applied investigation into practice. Index to IEEE Publications Issues for 1973- cover the entire IEEE technical literature. The Role of Sound Groundwater Resources Management and Governance to Achieve Water Security UNESCO Publishing Encyclopedia of Computer Science and Technology Infobase Publishing Presents an illustrated A-Z encyclopedia containing approximately 600 entries on computer and technology related topics. Data Center Networks Topologies, Architectures and Fault-Tolerance Characteristics Springer Science & Business Media This SpringerBrief presents a survey of data center network designs and topologies and compares several properties in order to highlight their advantages and disadvantages. The brief also explores several routing protocols designed for these topologies and compares the basic algorithms to establish connections, the techniques used to gain better performance, and the mechanisms for fault-tolerance. Readers will be equipped to understand how current research on data center networks enables the design of future architectures that can improve performance and dependability of data centers. This concise brief is designed for researchers and practitioners working on data center networks, comparative topologies, fault tolerance routing, and data center management systems. The context provided and information on future directions will also prove valuable for students interested in these topics. Loss prevention in the process industries hazard identification, assessment and control Going Stealth Transgender Bodies and U.S. Surveillance Practices This dissertation examines the ways various surveillance mechanisms have been deployed in relation to transgender and gender-nonconforming bodies and populations in the

context of Western modernity. Bridging the emerging fields of surveillance studies and transgender studies, I ask how transgender studies might be useful in better understanding surveillance and security practices, and how surveillance studies might further illuminate the regulation of gendered and racialized bodies in the U.S. and at U.S. borders. At its heart, this dissertation aims to show how transgender and gender-nonconforming bodies are inextricably bound up with questions of nationalism, state security, and military and government constructions of safety. The chapters examine surveillance sites ranging from identification documents to biometrics programs, and from medical surveillance of reproduction to airport X-rays. While focusing on surveillance mechanisms that are particularly linked to the global War on Terror, I also contextualize these practices in histories of bodily classification, militarization, and shifting constructions of deviance. Simultaneously, I trace genealogies of gender-nonconforming figures that have served as objects of scrutiny in contexts ranging from medicine and law to immigration checkpoints. Importantly, this dissertation rethinks the very category of transgender, engaging the fact that bodies may be read as gender deviant in relation to racial, religious, and/or national appearance, or through perceived class status, disability or sexual practices. I ask how certain trans-identified bodies, able to comply with dominant standards of dress and behavior (themselves grounded in ideals of whiteness, citizenship, class privilege and compulsory heterosexuality), may be legible to surveillance mechanisms not as transgender, but as properly gendered and non-threatening. At the same time, I consider the ways contemporary surveillance technologies produce and make visible particular understandings of transgender bodies. Finally, I argue that if surveillance practices assume normative bodies, then gender-nonconforming bodies may confound, hamper, or render illegible those practices, offering insight into potential counter-surveillance tactics and forms of resistance. In this way, rather than continuing to position trans and gender-nonconforming bodies as objects of curiosity and scientific scrutiny, I use the critical lens of transgender studies to examine ruptures and inconsistencies in state, medical, media and legal surveillance practices. Heavy Metals in Soils Trace Metals and Metalloids in Soils and their Bioavailability Springer Science & Business Media This third edition of the book has been completely re-written, providing a wider scope and enhanced coverage. It covers the general principles of the natural occurrence, pollution sources, chemical analysis, soil chemical behaviour and soil-plant-animal relationships of heavy metals and metalloids, followed by a detailed coverage of 21 individual elements, including: antimony, arsenic, barium, cadmium, chromium, cobalt, copper, gold, lead, manganese, mercury, molybdenum, nickel, selenium, silver, thallium, tin, tungsten, uranium, vanadium and zinc. The book is highly relevant for those involved in environmental science, soil science, geochemistry, agronomy, environmental health, and environmental engineering, including specialists responsible for the management and

clean-up of contaminated land. Nanotechnology in Endodontics Current and Potential Clinical Applications Springer This book provides detailed information on the emerging applications of nanomaterials and nanoparticles within endodontics, highlighting the exciting potential clinical impact of nanotechnology in the field. The range of applications covered is diverse, encompassing drug and gene delivery, tissue engineering, antibacterial strategies, dentin tissue stabilization, dentin pulp regeneration and use in restorative and endodontic materials. Important scientific background information relating to each application is provided, with clear coverage of basic principles. In addition, potential pitfalls are identified and explained. The cytotoxicity of nanomaterials and nanoparticles is also addressed in a separate chapter. The book will be of value both for endodontic practitioners and for all scientists and graduate students who are interested in the application of nanotechnology in endodontics. Trends in Computer Science, Engineering and Information Technology First International Conference, CCSEIT 2011, Tirunelveli, Tamil Nadu, India, September 23-25, 2011, Proceedings Springer Science & Business Media This book constitutes the refereed proceedings of the First International Conference on Computer Science, Engineering and Information Technology, CCSEIT 2011, held in Tirunelveli, India, in September 2011. The 73 revised full papers were carefully reviewed and selected from more than 400 initial submissions. The papers feature significant contributions to all major fields of the Computer Science and Information Technology in theoretical and practical aspects. Atomic and Nuclear Analytical Methods XRF, Mössbauer, XPS, NAA and Ion-Beam Spectroscopic Techniques Springer Science & Business Media This book compares and offers a comprehensive overview of nine analytical techniques important in material science and many other branches of science. All these methods are already well adapted to applications in diverse fields such as medical, environmental studies, archaeology, and materials science. This clearly presented reference describes and compares the principles of the methods and the various source and detector types. Auditory Prostheses New Horizons Springer Science & Business Media Cochlear implants are currently the standard treatment for profound sensorineural hearing loss. In the last decade, advances in auditory science and technology have not only greatly expanded the utility of electric stimulation to other parts of the auditory nervous system in addition to the cochlea, but have also demonstrated drastic changes in the brain in responses to electric stimulation, including changes in language development and music perception. Volume 20 of SHAR focused on basic science and technology underlying the cochlear implant. However, due to the newness of the ideas and technology, the volume did not cover any emerging applications such as bilateral cochlear implants, combined acoustic-electric stimulation, and other types of auditory prostheses, nor did it review brain plasticity in responses to electric stimulation and its perceptual and language consequences. This proposed volume takes off

from Volume 20, and expands the examination of implants into new and highly exciting areas. This edited book starts with an overview and introduction by Dr. Fan-Gang Zeng. Chapters 2-9 cover technological development and the advances in treating the full spectrum of ear disorders in the last ten years. Chapters 10-15 discuss brain responses to electric stimulation and their perceptual impact. This volume is particularly exciting because there have been quantum leap from the traditional technology discussed in Volume 20. Thus, this volume is timely and will be of real importance to the SHAR audience. Harmony Search Algorithm Proceedings of the 2nd International Conference on Harmony Search Algorithm (ICHSA2015) Springer The Harmony Search Algorithm (HSA) is one of the most well-known techniques in the field of soft computing, an important paradigm in the science and engineering community. This volume, the proceedings of the 2nd International Conference on Harmony Search Algorithm 2015 (ICHSA 2015), brings together contributions describing the latest developments in the field of soft computing with a special focus on HSA techniques. It includes coverage of new methods that have potentially immense application in various fields. Contributed articles cover aspects of the following topics related to the Harmony Search Algorithm: analytical studies; improved, hybrid and multi-objective variants; parameter tuning; and large-scale applications. The book also contains papers discussing recent advances on the following topics: genetic algorithms; evolutionary strategies; the firefly algorithm and cuckoo search; particle swarm optimization and ant colony optimization; simulated annealing; and local search techniques. This book offers a valuable snapshot of the current status of the Harmony Search Algorithm and related techniques, and will be a useful reference for practising researchers and advanced students in computer science and engineering. Design for Manufacture Strategies, Principles, and Techniques Addison Wesley Publishing Company This title covers the strategies, principles and techniques of manufacturing design Frontiers In Orthogonal Polynomials And Q-series World Scientific This volume aims to highlight trends and important directions of research in orthogonal polynomials, q-series, and related topics in number theory, combinatorics, approximation theory, mathematical physics, and computational and applied harmonic analysis. This collection is based on the invited lectures by well-known contributors from the International Conference on Orthogonal Polynomials and q-Series, that was held at the University of Central Florida in Orlando, on May 10–12, 2015. The conference was dedicated to Professor Mourad Ismail on his 70th birthday. The editors strived for a volume that would inspire young researchers and provide a wealth of information in an engaging format. Theoretical, combinatorial and computational/algorithmic aspects are considered, and each chapter contains many references on its topic, when appropriate. Contents: Mourad Ismail (Richard Askey)Binomial Andrews–Gordon–Bressoud Identities (Dennis Stanton)Symmetric Expansions of Very Well-Poised Basic Hypergeometric Series (George E

Andrews)A Sturm–Liouville Theory for Hahn Difference Operator (M H Annaby, A E Hamza and S D Makharesh)Solvability of the Hankel Determinant Problem for Real Sequences (Andrew Bakan and Christian Berg)Convolution and Product Theorems for the Special Affine Fourier Transform (Ayush Bhandari and Ahmed I Zayed)A Further Look at Time-and-Band Limiting for Matrix Orthogonal Polynomials (M Castro, F A Grünbaum, I Pacharoni and I Zurrián)The Orthogonality of Al–Salam–Carlitz Polynomials for Complex Parameters (Howard S Cohl, Roberto S Costas-Santos and Wenqing Xu)Crouching AGM, Hidden Modularity (Shaun Cooper, Jesús Guillera, Armin Straub and Wadim Zudilin)Asymptotics of Orthogonal Polynomials and the Painlevé Transcendents (Dan Dai)From the Gaussian Circle Problem to Multivariate Shannon Sampling (Willi Freeden and M Zuhair Nashed)Weighted Partition Identities and Divisor Sums (F G Garvan)On the Ismail–Letessier–Askey Monotonicity Conjecture for Zeros of Ultraspherical Polynomials (Walter Gautschi)A Discrete Top-Down Markov Problem in Approximation Theory (Walter Gautschi)Supersymmetry of the Quantum Rotor (Vincent X Genest, Luc Vinet, Guo-Fu Yu and Alexei Zhedanov)The Method of Brackets in Experimental Mathematics (Ivan Gonzalez, Karen Kohl, Lin Jiu and Victor H Moll)Balanced Modular Parameterizations (Tim Huber, Danny Lara and Esteban Melendez)Some Smallest Parts Functions from Variations of Bailey's Lemma (Chris Jennings-Shaffer)Dual Addition Formulas Associated with Dual Product Formulas (Tom H Koornwinder)Holonomic Tools for Basic Hypergeometric Functions (Christoph Koutschan and Peter Paule)A Direct Evaluation of an Integral of Ismail and Valent (Alexey Kuznetsov)Algebraic Generating Functions for Gegenbauer Polynomials (Robert S Maier)q-Analogues of Two Product Formulas of Hypergeometric Functions by Bailey (Michael J Schlosser)Summation Formulae for Noncommutative Hypergeometric Series (Michael J Schlosser)Asymptotics of Generalized Hypergeometric Functions (Y Lin and R Wong)Mock Theta-Functions of the Third Order of Ramanujan in Terms of Appell–Lerch Series (Changgui Zhang)On Certain Positive Semidefinite Matrices of Special Functions (Ruiming Zhang) Readership: Graduate students and researchers interested in orthogonal polynomials and B.Sc. Practical Physics S. Chand Publishing B.Sc. Practical Physics Government Reports Announcements & Index