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KEY=DENTAL - TORRES WANG

INTRAVITAL MICROSCOPY IMAGING OF LEUKOCYTES

Frontiers Media SA

VIRTUAL SURGICAL PLANNING AND 3D PRINTING IN HEAD AND NECK TUMOR RESECTION AND RECONSTRUCTION

Frontiers Media SA

SYNTHESIS OF NOVEL HYDROGELS WITH UNIQUE MECHANICAL PROPERTIES

Frontiers Media SA

3D PRINTING IN PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY

A GUIDE FOR CLINICAL PRACTICE

Springer Nature This handy volume illustrates the basics of clinical three-dimensional (3D) printing, addressing the practical aspects of establishing a simple and effective 3D printing service in a medical facility. No longer confined to makers and workshops, this very recent technology has been fast developing and rapid prototyping has proven its potential in the clinical field as well, leading to new approaches. The declared aim of this work is enabling medical professionals to create bespoke anatomical models from a series of CT or MRI images, and assisting them in choosing the best suited 3D printers and materials for each specific clinical need. The text includes original, full-color step-by-step photos for better guidance, and a complete review of related publications in literature. Single chapters devoted to specific areas of 3D printing application, such as rhinoplasty, ear reconstruction, oculoplasty, maxillofacial surgery, as well as for surgical simulations. Contents are completed by a review of the

legal aspects and the safety and quality considerations, as well as a thorough examination of the variety of 3D printers, compatible materials as filaments and resins, and including the available online resources. Plastic, Ophthalmologic and Maxillofacial surgeons, and professionals dealing with surgical reconstruction, will find this guide to be a valuable companion for the understanding of 3D printing in clinical practice.

2.5D PRINTING

BRIDGING THE GAP BETWEEN 2D AND 3D APPLICATIONS

John Wiley & Sons A guide that examines the history and current state of 2.5D printing and explores the relationship between two and three dimensions 2.5D Printing: Bridging the Gap Between 2D and 3D Applications examines the relationship between two- and three-dimensional printing and explores the current ideas, methods, and applications. It provides insights about the diversity of our material culture and heritage and how this knowledge can be used to design and develop new methods for texture printing. The authors review the evolving research and interest in working towards developing methods to: capture, measure and model the surface qualities of 3D and 2D objects, represent the appearance of surface, material and textural qualities, and print or reproduce the material and textural qualities. The text reflects information on the topic from a broad range of fields including science, technology, art, design, conservation, perception, and computer modelling. 2.5D Printing: Bridging the Gap Between 2D and 3D Applications provides a survey of traditional methods of capturing 2.5D through painting and sculpture, and how the human perception is able to judge and compare differences. This important text: Bridges the gap between the technical and perceptual domains of 2D and 3D printing Discusses perceptual texture, color, illusion, and visual impact to offer a unique perspective Explores how to print a convincing rendering of texture that integrates the synthesis of texture in fine art paintings, with digital deposition printing Describes contemporary methods for capturing surface qualities and methods for modelling and measuring, and ways that it is currently being used Considers the impact of 2.5D for future technologies 2.5D Printing is a hands-on guide that provides visual inspiration, comparisons between traditional and digital technologies, case studies, and a wealth of references to the world of texture printing. Please visit the companion website at: www.wiley.com/go/bridging2d3d . www.wiley.com/go/bridging2d3d

ADVANCED DENTAL BIOMATERIALS

Woodhead Publishing Advanced Dental Biomaterials is an invaluable reference for researchers and clinicians within the biomedical industry and academia. The book can be used by both an experienced researcher/clinician learning about other biomaterials or applications that

may be applicable to their current research or as a guide for a new entrant into the field who needs to gain an understanding of the primary challenges, opportunities, most relevant biomaterials, and key applications in dentistry. Provides a comprehensive review of the materials science, engineering principles and recent advances in dental biomaterials Reviews the fundamentals of dental biomaterials and examines advanced materials' applications for tissues regeneration and clinical dentistry Written by an international collaborative team of materials scientists, biomedical engineers, oral biologists and dental clinicians in order to provide a balanced perspective on the field

3-DIMENSIONAL MODELING IN CARDIOVASCULAR DISEASE

Elsevier Health Sciences Written by physicians and surgeons, imaging specialists, and medical technology engineers, and edited by Dr. Evan M. Zahn of the renowned Cedars-Sinai Heart Institute, this concise, focused volume covers must-know information in this new and exciting field. Covering everything from the evolution of 3D modeling in cardiac disease to the various roles of 3D modeling in cardiology to cardiac holography and 3D bioprinting, 3-Dimensional Modeling in Cardiovascular Disease is a one-stop resource for physicians, cardiologists, radiologists, and engineers who work with patients, support care providers, and perform research. Provides history and context for the use of 3D printing in cardiology settings, discusses how to use it to plan and evaluate treatment, explains how it can be used as an education resource, and explores its effectiveness with medical interventions. Presents specific uses for 3D modeling of the heart, examines whether it improves outcomes, and explores 3D bioprinting. Consolidates today's available information and guidance into a single, convenient resource.

3D PRINTING FOR THE RADIOLOGIST, E-BOOK

Elsevier Health Sciences Comprehensive, yet concise, 3D Printing for the Radiologist presents an overview of three-dimensional printing at the point of care. Focusing on opportunities and challenges in radiology practice, this up-to-date reference covers computer-aided design principles, quality assurance, training, and guidance for integrating 3D printing across radiology subspecialties. Practicing and trainee radiologists, surgeons, researchers, and imaging specialists will find this an indispensable resource for furthering their understanding of the current state and future outlooks for 3D printing in clinical medicine. Covers a wide range of topics, including basic principles of 3D printing, quality assurance, regulatory perspectives, and practical implementation in medical training and practice. Addresses the challenges associated with 3D printing integration in clinical settings, such as reimbursement, regulatory issues, and training. Features concise chapters from a team of multidisciplinary chapter authors, including practicing radiologists, researchers, and engineers.

Consolidates today’s available information on this timely topic into a single, convenient, resource.

ADDITIVE MANUFACTURING WITH MEDICAL APPLICATIONS

CRC Press This reference text discusses integrated approaches to improve the objectives of additive manufacturing in medical application. The text covers case studies related to product design and development, discuses biomaterials, applications of artificial intelligence and machine learning using additive manufacturing techniques. It covers important topics including 3D printing technology, materials for 3D printing in medicine, rapid prototyping in clinical applications, and use of additive manufacturing in customized bone tissue engineering scaffold. The text- Discusses additive manufacturing techniques and their utilization in medical applications. Covers important applications of additive manufacturing in the fields of medicine, education and space industry. Explores regulatory challenges associated with the emergence of additive manufacturing. Examines the use of rapid prototyping in clinical applications. The text will serve as a useful reference guide for graduate students and academic researchers in the fields of industrial engineering, manufacturing science, mechanical engineering, and aerospace engineering. This book discusses important application areas of additive manufacturing, including medicine, education, and the space industry, this reference text will be a serve as a useful text for graduate students and academic researchers in the fields of industrial engineering, manufacturing science, mechanical engineering, and aerospace engineering.

3D PRINTED MICROFLUIDIC DEVICES

MDPI This book is a printed edition of the Special Issue "3D Printed Microfluidic Devices" that was published in Micromachines

THE BIOMATERIALS: SILVER JUBILEE COMPENDIUM

Elsevier The journal Biomaterials was launched in 1980. The subject of biomaterials science was then in its infancy, being largely cofined to the study of the characteristics of materials used for medical devices. Twenty-five years on, we can truly say that biomaterials science has matured at an incredible rate and now represents a formidable sector that bridges the materials sciences, advanced medical therapies, and molecular and cell sciences. This Silver Jubilee Compendium consists of reprinted versions of the top 25 papers, published during these 25 years, as judged by an international panel of biomaterials scientists. This book is published as a landmark in biomaterials science and it is to be hoped that it will serve as a stimulus to young biomaterials scientists of the early twenty-first century for their pioneering work of the future.

DEFINITIONS IN BIOMATERIALS

PROCEEDINGS OF A CONSENSUS CONFERENCE OF THE EUROPEAN SOCIETY FOR BIOMATERIALS, CHESTER, ENGLAND, MARCH 3-5, 1986

Elsevier Science Limited

GUIDED ENDODONTICS

Springer Nature This superbly illustrated book provides a comprehensive overview of guided endodontics, a technology-driven, contemporary treatment approach that represents a paradigm shift in endodontics. Guided endodontics is now the proven, safe, predictable and, clinically, the most effective method for management of calcified root canals and root-end resection surgeries. This book covers detailed step-by-step digital treatment planning and the clinical application of static guides and dynamic navigation systems for, both, surgical and non-surgical endodontic treatment. In essence, this novel technology utilizes preoperative CBCT scans and intra-oral 3D scans as well as uniquely developed special software, for virtual planning of the endodontic treatment. This book delineates 3D printing, CBCT, digital impression systems, static guide designing with different software and clinical application of static and dynamic navigation in endodontics and much more. The concluding chapter addresses the future trends in 3D guidance in endodontics, in particular, and dentistry in general.

STEREOLITHOGRAPHY

MATERIALS, PROCESSES AND APPLICATIONS

Springer Science & Business Media Stereolithography: Materials, Processes and Applications will focus on recent advances in stereolithography covering aspects related to the most recent advances in the field, in terms of fabrication processes (two-photon polymerization, micro-stereolithography, infrared stereolithography and stereo-thermal-lithography), materials (novel resins, hydrogels for medical applications and highly reinforced resins with ceramics and metals), computer simulation and applications.

HONEST TO GREATNESS

HOW TODAY'S GREATEST LEADERS USE BRUTAL HONESTY TO ACHIEVE MASSIVE SUCCESS

BenBella Books In today's hyper-transparent world, consumers have enormous power to decide which brands are worth their time and money—so how do you make sure they choose yours? Unfortunately, most leaders and organizations are stuck following archaic, detrimental business practices. Meanwhile, savvy consumers and employees across every

generation are making their stance perfectly clear: They are not interested in supporting organizations that seem inauthentic, soulless, or untrustworthy. In this environment, only the honest will survive. In Honest to Greatness, serial Inc. 5000 entrepreneur Peter Kozodoy shows how today's greatest business leaders use honesty—not as a touchy-feely core value, but as a business strategy that produces game-changing, industry-dominating success. Through case studies and interviews with leaders at Bridgewater Associates, Sprint, Quicken Loans, Domino's, The Ritz-Carlton, and more, Kozodoy presents fresh business concepts that anyone in the workplace can implement in order to: • Reach, engage, and retain your best customers • Attract and inspire the best talent in any industry • Create an unbeatable culture of innovation that dominates your competitors • Earn your team's respect and loyalty • Unlock deep personal fulfillment by setting the "right" goals Filled with powerful lessons for current and future leaders, this timely book demonstrates how to use honesty at both the organizational and individual level to achieve true greatness in business and in life.

3D PRINTING IN MEDICINE

A PRACTICAL GUIDE FOR MEDICAL PROFESSIONALS

Springer This book describes the fundamentals of three-dimensional (3D) printing, addresses the practical aspects of establishing a 3D printing service in a medical facility, and explains the enormous potential value of rendering images as 3D printed models capable of providing tactile feedback and tangible information on both anatomic and pathologic states. Individual chapters also focus on selected areas of applications for 3D printing, including musculoskeletal, craniomaxillofacial, cardiovascular, and neurosurgery applications. Challenges and opportunities related to training, materials and equipment, and guidelines are addressed, and the overall costs of a 3D printing lab and the balancing of these costs against clinical benefits are discussed. Radiologists, surgeons, and other physicians will find this book to be a rich source of information on the practicalities and expanding medical applications of 3D printing.

MATERIALS FOR DESIGN

Quercus Publishing Over the last ten years there has been a huge growth in the area of materials for design, but most books on this subject deal with advanced, semi-formed materials (that is, materials sold as sheet, rod, tube, etc.). This book provides much-needed information on the raw materials, and the low-down on how these can be used. Organized into three sections embracing grown, oil-based and mined materials, each entry includes information on key features, typical applications, production processes and sustainability issues. This fact-packed book will allow professional designers and students from a range of disciplines to

understand in simple, exciting, visual terms the different qualities and features of materials.

PLASTIC PART DESIGN FOR INJECTION MOLDING

AN INTRODUCTION

Carl Hanser Verlag GmbH Co KG The goal of the book is to assist the designer in the development of parts that are functional, reliable, manufacturable, and aesthetically pleasing. Since injection molding is the most widely used manufacturing process for the production of plastic parts, a full understanding of the integrated design process presented is essential to achieving economic and functional design goals. Features over 425 drawings and photographs. Contents: Introduction to Materials. Manufacturing Considerations for Injection Molded Parts. The Design Process and Material Selection. Structural Design Considerations. Prototyping and Experimental Stress Analysis. Assembly of Injection Molded Plastic Parts. Conversion Constants.

WORLD CONGRESS ON MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING 2018

JUNE 3-8, 2018, PRAGUE, CZECH REPUBLIC (VOL.1)

Springer This book (vol. 1) presents the proceedings of the IUPESM World Congress on Biomedical Engineering and Medical Physics, a triennially organized joint meeting of medical physicists, biomedical engineers and adjoining health care professionals. Besides the purely scientific and technological topics, the 2018 Congress will also focus on other aspects of professional involvement in health care, such as education and training, accreditation and certification, health technology assessment and patient safety. The IUPESM meeting is an important forum for medical physicists and biomedical engineers in medicine and healthcare learn and share knowledge, and discuss the latest research outcomes and technological advancements as well as new ideas in both medical physics and biomedical engineering field.

DIGITAL TRANSFORMATION AND EMERGING TECHNOLOGIES FOR FIGHTING COVID-19 PANDEMIC: INNOVATIVE APPROACHES

Springer Nature This book is one of the first books that deal with the COVID-19 pandemic. COVID-19 pandemic has affected countries all over the world and has made a significant impact on daily life and healthcare facilities and treatment systems. The book covers the main recent emerging technologies that are related to the COVID-19 crisis. The technologies that are included in this book play a significant role in tackling COVID-19 in the future. The scope of this book is to cover all advanced emerging technologies and artificial intelligence techniques to

fight against COVID-19 pandemic.

ADVANCED 3D-PRINTED SYSTEMS AND NANOSYSTEMS FOR DRUG DELIVERY AND TISSUE ENGINEERING

Elsevier Advanced 3D-Printed Systems and Nanosystems for Drug Delivery and Tissue Engineering explores the intricacies of nanostructures and 3D printed systems in terms of their design as drug delivery or tissue engineering devices, their further evaluations and diverse applications. The book highlights the most recent advances in both nanosystems and 3D-printed systems for both drug delivery and tissue engineering applications. It discusses the convergence of biofabrication with nanotechnology, constructing a directional customizable biomaterial arrangement for promoting tissue regeneration, combined with the potential for controlled bioactive delivery. These discussions provide a new viewpoint for both biomaterials scientists and pharmaceutical scientists. Shows how nanotechnology and 3D printing are being used to create systems which are intelligent, biomimetic and customizable to the patient Explores the current generation of nanostructured 3D printed medical devices Assesses the major challenges of using 3D printed nanosystems for the manufacture of new pharmaceuticals

21ST CENTURY SPORTS

HOW TECHNOLOGIES WILL CHANGE SPORTS IN THE DIGITAL AGE

Springer Nature This book outlines the effects that technology-induced change will have on sport within the next five to ten years, and provides food for thought concerning what lies further ahead. Presented as a collection of essays, the authors are leading academics from renowned institutions such as Massachusetts Institute of Technology, Queensland University of Technology, and the University of Cambridge, and practitioners with extensive technological expertise. In their essays, the authors examine the impacts of emerging technologies like artificial intelligence, the Internet of Things, and robotics on sports and assess how they will change sport itself, consumer behavior, and existing business models. The book will help athletes, entrepreneurs, and innovators working in the sports industry to spot trendsetting technologies, gain deeper insights into how they will affect their activities, and identify the most effective responses to stay ahead of the competition both on and off the pitch.

ADDITIVE AND SUBTRACTIVE MANUFACTURING

EMERGENT TECHNOLOGIES

Walter de Gruyter GmbH & Co KG Additive manufacturing (AM) and subtractive manufacturing (SM) offer numerous advantages in the

production of single and multiple components. They provide incomparable design independence and are used to fabricate products in several industries, e.g.: aeronautic, automotive, biomedical, etc. The book presents recent results of processes including 3D printing, SLS (selective laser sintering), EBM (electron beam melting) and Precise Cutting and Drilling.

INNOVATIVE PRODUCT DESIGN AND INTELLIGENT MANUFACTURING SYSTEMS

SELECT PROCEEDINGS OF ICIPDIMS 2019

Springer Nature This book gathers selected research articles from the International Conference on Innovative Product Design and Intelligent Manufacturing System (ICIPDIMS 2019), held at the National Institute of Technology, Rourkela, India. The book discusses latest methods and advanced tools from different areas of design and manufacturing technology. The main topics covered include design methodologies, industry 4.0, smart manufacturing, and advances in robotics among others. The contents of this book are useful for academics as well as professionals working in industrial design, mechatronics, robotics, and automation.

EMERGING TECHNOLOGIES IN BRACHYTHERAPY

CRC Press Brachytherapy is continuously advancing. Years of accumulated experience have led to clinical evidence of its benefit in numerous clinical sites such as gynecological, prostate, breast, rectum, ocular, and many other cancers. Brachytherapy continues to expand in its scope of practice and complexity, driven by strong academic and commercial research, by advances in competing modalities, and due to the diversity in the political and economic landscape. It is a true challenge for practicing professionals and students to readily grasp the overarching trends of the field, especially of those technologies and innovative practices that are not yet established but are certainly on the rise. Addressing this challenge, Emerging Technologies in Brachytherapy presents a comprehensive collection of chapters on the latest trending/emerging technologies and expert opinions. It is divided into five broad sections: Section I: Physics of Brachytherapy Section II: Imaging for Brachytherapy Guidance Section III: Brachytherapy Suites Section IV: Is Brachytherapy a Competitive Modality? Section V: Vision 20/20: Industry Perspective Each section has a carefully selected collection of chapters, which covers the spectrum of topics in comprehensive detail. By drawing on recognized experts and key opinion leaders from academia and commercial sectors worldwide (100+ contributors), Emerging Technologies in Brachytherapy provides readers with a wealth of relevant information needed to comprehend the rapidly advancing technologies and trends of today and the prospects for the future.

MAXILLOFACIAL CONE BEAM COMPUTED TOMOGRAPHY

PRINCIPLES, TECHNIQUES AND CLINICAL APPLICATIONS

Springer The book provides a comprehensive description of the fundamental operational principles, technical details of acquiring and specific clinical applications of dental and maxillofacial cone beam computed tomography (CBCT). It covers all clinical considerations necessary for optimal performance in a dental setting. In addition overall and region specific correlative imaging anatomy of the maxillofacial region is described in detail with emphasis on relevant disease. Finally imaging interpretation of CBCT images is presented related to specific clinical applications. This book is the definitive resource for all who refer, perform, interpret or use dental and maxillofacial CBCT including dental clinicians and specialists, radiographers, ENT physicians, head and neck, and oral and maxillofacial radiologists.

ADDITIVE MANUFACTURING TECHNOLOGIES

3D PRINTING, RAPID PROTOTYPING, AND DIRECT DIGITAL MANUFACTURING

Springer This book covers in detail the various aspects of joining materials to form parts. A conceptual overview of rapid prototyping and layered manufacturing is given, beginning with the fundamentals so that readers can get up to speed quickly. Unusual and emerging applications such as micro-scale manufacturing, medical applications, aerospace, and rapid manufacturing are also discussed. This book provides a comprehensive overview of rapid prototyping technologies as well as support technologies such as software systems, vacuum casting, investment casting, plating, infiltration and other systems. This book also: Reflects recent developments and trends and adheres to the ASTM, SI, and other standards Includes chapters on automotive technology, aerospace technology and low-cost AM technologies Provides a broad range of technical questions to ensure comprehensive understanding of the concepts covered

ENGINEERING OF SCINTILLATION MATERIALS AND RADIATION TECHNOLOGIES

SELECTED ARTICLES OF ISMART2018

Springer Nature This proceedings book presents dual approaches to examining new theoretical models and their applicability in the search for new scintillation materials and, ultimately, the development of industrial technologies. The ISMART conferences bring together the radiation detector community, from fundamental research scientists to applied physics experts, engineers, and experts on the implementation of

advanced solutions. This scientific forum builds a bridge between the different parts of the community and is the basis for multidisciplinary, cooperative research and development efforts. The main goals of the conference series are to review the latest results in scintillator development, from theory to applications, and to arrive at a deeper understanding of fundamental processes, as well as to discover components for the production of new generations of scintillation materials. The book highlights recent findings and hypotheses, key advances, as well as exotic detector designs and solutions, and includes papers on the microtheory of scintillation and the initial phase of luminescence development, applications of the various materials, as well as the development and characterization of ionizing radiation detection equipment. It also touches on the increased demand for cryogenic scintillators, the renaissance of garnet materials for scintillator applications, nano-structuring in scintillator development, trends in and applications for security, and exploration of hydrocarbons and ecological monitoring.

HIGH-PERFORMANCE COMPOSITE STRUCTURES

ADDITIVE MANUFACTURING AND PROCESSING

Springer Nature This book covers advanced 3D printing processes and the latest developments in novel composite-based printing materials, thus enabling the reader to understand and benefit from the advantages of this groundbreaking technology. The rise in ecological anxieties has forced scientists and researchers from all over the world to find novel lightweight materials. Therefore, it is necessary to expand knowledge about the processing, applications, and challenges of 3D printing of composite materials to expanding the range of their application. This book presents an extensive survey on recent improvements in the research and development of additive manufacturing technologies that are used to make composite structures for various applications such as electronic, aerospace, construction, and biomedical applications. Advanced printing techniques including fused deposition modeling (FDM), selective laser sintering (SLS), selective laser melting (SLM), electron beam melting (EBM), inkjet 3D printing (3DP), stereolithography (SLA), and 3D plotting will be covered and discussed thoroughly in this book. This book also focuses the recent advances and challenges in polymer nanocomposite and introduces potential applications of these materials in various sectors.

AUTOTRANSPLANTATION OF TEETH

Quintessence Publishing (IL) When performed under the proper indications, autotransplantation of teeth is a predictable technique that usually results in a good prognosis. This clinical atlas details the various procedures involved in autotransplantation. Readers are introduced to concepts such

as wound healing associated with autotransplantation, clinical indications, surgical procedures, and prognoses for various situations, and they can see the outcome of specific cases over extended periods of time. The book should be a useful resource for oral surgeons, orthodontists, and pedodontists wanting to integrate this procedure into their practice.

FUNCTIONAL 3D TISSUE ENGINEERING SCAFFOLDS

MATERIALS, TECHNOLOGIES, AND APPLICATIONS

Woodhead Publishing In order to grow replacement tissues, 3D scaffolds are widely used as a template for tissue engineering and regeneration. These scaffolds, which are typically 'seeded' with cells, support the growth of new tissues. However, in order to achieve successful tissue growth, the scaffold must meet specific requirements and are often 'functionalized' to accentuate particular properties. Functional 3D tissue engineering scaffolds: materials, technologies, and applications, is a comprehensive review of functional 3D scaffolds, providing information on the fundamentals, technologies, and applications. Part 1 focuses on the fundamentals of 3D tissue scaffolds, examining information on materials, properties, and trends. Part 2 discusses a wide range of conventional technologies for engineering functional 3D scaffolds, leading the way to a discussion on CAD and advanced technologies for functional 3D scaffold engineering. Chapters in part 3 study methods for functionalizing scaffolds to support a variety of in vivo functions whilst the final set of chapters provides an important review of the most significant applications of functional 3D scaffolds within tissue engineering. This book is a valuable resource for biomaterial scientists and biomedical engineers in academia and industry, with interests in tissue engineering and regenerative medicine. Provides a self-contained work for the field of biomaterials and tissue engineering Discusses all the requirements a scaffold must meet and a wide range of strategies to create them Highlights significant and successful applications of functional 3D scaffolds

ADVANCES IN DENTAL IMPLANTOLOGY USING NANOMATERIALS AND ALLIED TECHNOLOGY APPLICATIONS

Springer Nature As the name suggests this book discusses how nanotechnology has influenced the provision of implant treatment from surgery to prosthetic reconstruction and post treatment biological complications. This book is a sequel to the earlier book "Dental Applications of Nanotechnology" published by Springer. It aims to present both the nanotechnology and allied research along with the clinical concepts of almost every different aspect of implantology in one volume. These two fraternities promote the translation of the research ideas and product development into fruitful practicalities. The first section covers nanobiomaterials in implant applications, in bone regeneration, prosthetic

rehabilitation, to control biofilm and peri-implantitis, bone grafting and tissue engineering. The second section explores applications of such new technologies in the field of implantology that gives this book a unique feature by bringing science and technology into clinical application. It covers implant stability, peri-implantitis, lasers, CAD/CAM technology, impressions, 3D printing, reconstruction with bone grafts and zygomatic implants. Comprehensive coverage includes both simple and complicated clinical cases, with practical guidance on how to apply the latest research, diagnostic tools, treatment planning, implant designs, materials, and techniques to provide superior patient outcomes. The book is well written and structured making it easy for experienced clinicians and those new to dental implantology as well as students, researchers, scientists and faculties of dental universities

MINIMALLY INVASIVE DENTAL IMPLANT SURGERY

John Wiley & Sons Minimally Invasive Dental Implant Surgery presents a new clinical text and atlas focused on cutting edge and rapidly developing, minimally invasive treatment modalities and their applications to implant dentistry. Centered on progress in imaging, instrumentation, biomaterials and techniques, this book discusses both the “how to” as well as the “why” behind the concept of minimally invasive applications in implant surgery. Drawing together key specialists for each topic, the book provides readers with guidance for a broad spectrum of procedures, and coalesces information on the available technologies into one useful resource. Minimally Invasive Dental Implant Surgery will be a useful new guide to implant specialists and restorative dentists seeking to refine their clinical expertise and minimize risk for their patients.

INDUSTRIALIZING ADDITIVE MANUFACTURING - PROCEEDINGS OF ADDITIVE MANUFACTURING IN PRODUCTS AND APPLICATIONS - AMPA2017

Springer These proceedings exchange ideas and knowledge among engineers, designers and managers on how to support real-world value chains by developing additive manufactured series products. The papers from the conference show a holistic, multidisciplinary view.

BIOREACTOR SYSTEMS FOR TISSUE ENGINEERING

Springer Science & Business Media The editors of this special volume would first like to thank all authors for their excellent contributions. We would also like to thank Prof. Dr. Thomas Scheper, Dr. Marion Hertel and Ulrike Kreusel for providing the opportunity to compose this volume and Springer for organizational and technical support. Tissue engineering represents one of the major emerging fields in modern b- technology; it combines different subjects ranging from biological and material sciences to engineering and clinical disciplines. The aim of tissue engineering is the

development of therapeutic approaches to substitute diseased organs or tissues or improve their function. Therefore, three dimensional biocompatible materials are seeded with cells and cultivated in suitable systems to generate functional tissues. Many different aspects play a role in the formation of 3D tissue structures. In the first place the source of the used cells is of the utmost importance. To prevent tissue rejection or immune response, preferentially autologous cells are now used. In particular, stem cells from different sources are gaining exceptional importance as they can be differentiated into different tissues by using special media and supplements. In the field of biomaterials, numerous scaffold materials already exist but new composites are also being developed based on polymeric, natural or xenogenic sources. Moreover, a very important issue in tissue en- neering is the formation of tissues under well defined, controlled and reprod- ible conditions. Therefore, a substantial number of new bioreactors have been developed.

PERMEABILITY BARRIER

METHODS AND PROTOCOLS

Humana Press The significant biological subject, the permeability barrier, is incredibly diverse and vital for a vast assortment of crucial functions in the body. In Permeability Barrier: Methods and Protocols, a variety of experienced researchers contribute techniques to study this complex system in its many forms. Written in the highly successful Methods in Molecular BiologyTM series format, chapters include brief introductions to their respective topics, detailed lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, Permeability Barrier: Methods and Protocols serves as an ideal guide for all scientists seeking to further our understanding of this vital area of research.

MATERIALS DESIGN AND APPLICATIONS II

Springer This book highlights fundamental research on the design and application of engineering materials, and predominantly mechanical engineering applications. This area includes a wide range of technologies and materials, including metals, polymers, composites, and ceramics. Advanced applications include manufacturing cutting-edge materials, testing methods, and multi-scale experimental and computational aspects. The book introduces readers to a wealth of engineering applications in transport, civil, packaging and power generation.

ENDODONTIC MICROSURGERY

Quintessence Publishing Company The key factors to successful endodontic surgery--vision and precision--are now readily attainable, thanks to the

advent of the operating microscope. As always, however, the success or failure of treatment ultimately depends on the skill and knowledge of the clinician. Drawing on more than 15 years of experience, the author of this step-by-step approach to endodontic microsurgery patiently guides the reader through each phase of treatment: anesthesia, flap design and execution, osteotomy window creation, curettage, hemostasis, apicoectomy, ultrasonic retrocavity preparation, drying, obturation, and suturing. He also offers an in-depth explanation of the features, parts, and accessories of the operating microscope for effective use in the dental office, along with discussions of presurgical and postsurgical considerations, periodontal regeneration techniques, endo-perio relationships, and placement of immediate implants when the tooth cannot be saved.

THE ODONTOBLAST

HANDBOOK OF ORTHOGNATHIC TREATMENT

A TEAM APPROACH

John Wiley & Sons This handbook provides a short, contemporary text on the management of dentofacial deformities. The importance of a well organised, inter-disciplinary approach is emphasised throughout and the following key areas are presented: A detailed account of the role of the psychologist, from initial assessment through to post-operative support. A systematic approach to dentofacial assessment, including a section on diagnostic records and an overview of cephalometry. A logical step-by-step approach to treatment planning, emphasising the interactive thought process required when setting orthodontic and surgical objectives. The fundamentals of surgical orthodontics, with the scope and limitations of orthodontic appliances clearly explained for each phase of treatment. A description of orthognathic technical procedures and how potential errors can be minimised in order to improve the accuracy of model surgery. An account of how to carry out photo-cephalometric profile prediction planning, including a critique of the method. A detailed description of the full range of mandibular and maxillary orthognathic surgical procedures, including indications and complications. A chapter on higher-level osteotomies for the treatment of more severe craniofacial abnormalities is included for completeness. A series of six contrasting case studies. There is an emphasis on the technological advances that are rapidly enabling the global paradigm shift from 2D to 3D planning.