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Handbook of Optical Sensors provides a comprehensive and integrated view of optical sensors, addressing the fundamentals, structures, technologies, applications, and future perspectives. Featuring chapters authored by recognized experts and major contributors to the field, this essential reference: Explains the basic aspects of optical sensors and the principles of optical metrology, presenting a brief historical review Explores the role of optical waveguides in sensing and discusses sensor technologies based on intensity and phase modulation, fluorescence, and plasmonic waves Describes wavefront sensing, multiphoton microscopy, and imaging based on optical coherence tomography Covers optical fiber sensing, from light guiding in standard and microstructured optical fibers to sensor multiplexing, distributed sensing, and fiber Bragg grating Offers a broad perspective of the field and identifies trends that could shape the future, such as metamaterials and entangled quantum states of light Handbook of Optical Sensors is an ideal resource for practitioners and those seeking optical solutions for their specific needs, as well as for students and investigators who are the intellectual driving force of optical sensing.

In this fourth edition of the popular Flexible Bronchoscopy, which has been revised and updated throughout, the world's leading specialists discuss the technical and procedural aspects of performing diagnostic and therapeutic bronchoscopy. Four new chapters have been added, taking into account new developments in EBUS and electromagnetic navigation.

This Atlas of Inherited Retinal Disorders provides a thorough overview of various inherited retinal dystrophies with emphasis on phenotype characteristics and how they relate to the most fre-

quently encountered genes. It also meets the previously unmet needs of PhD students who will benefit from seeing the phenotypes of genes they work on and study. Further, because genetic-testing costs are quite high and spiraling higher, this Atlas will help geneticists familiarize themselves with the candidate gene approach to test patients' genomes, enabling more cost-efficient testing. This invaluable atlas is organized into eight sections starting with an introduction to the basic knowledge on retinal imaging, followed by diseases listed according to inheritance pattern and disorders with extraocular manifestations grouped by defining features. This structure will be intuitive to clinicians and students studying inherited retinal disorders.

This book gives a clinical context to optical coherence tomography (OCT) findings, while considering the differential diagnosis and providing patient management guidance. Relevant anatomical and technical aspects are discussed, followed by a pragmatic illustration of the use of OCT for the clinical spectrum of multiple sclerosis and optic neuritis, and finishing with information on monitoring ocular side effects of recently approved disease-modifying treatments in multiple sclerosis. Optical Coherence Tomography in Multiple Sclerosis: Clinical Applications is aimed at clinical neurologists working with patients suffering from MS and general neurologists who see patients with visual symptoms in their daily practice. Ophthalmologists sharing clinical responsibilities with neurologists for patients under disease-modifying treatments will also find the book of interest.

This book focuses on the practical aspects of Optical Coherence Tomography (OCT) in glaucoma diagnostics offering important theoretical information along with many original cases. OCT is a non-invasive imaging technique that acquires high-resolution images of the ocular structures. It enables clinicians to detect glaucoma in the early stages and efficiently monitor the disease. Optical Coherence Tomography in Glaucoma features updated information on technical applications of OCT in glaucoma, reviews recently published literature and provides clinical cases based on Cirrus and Spectralis OCT platforms. In addition, newer techniques like event and trend analyses for progression, macular ganglion cell analysis, and OCT angiography are discussed. This book will serve as a reference for ophthalmologists and optometrists worldwide with a special interest in OCT imaging providing essential guidance on the application of OCT in glaucoma.

This contemporary reference presents a comprehensive review of the most recent applications of optical coherence tomography (OCT) in biology, medicine, engineering, and applied physics-summarizing technological advances that led to the availability of viable imaging tools and modern methods of OCT for optical biopsy, surgical guidance, and quality control of advanced composites in situ.

High-speed anterior segment optical coherence tomography (OCT) offers a non-contact method for high resolution cross-sectional and three-dimensional imaging of the cornea and the anterior segment of the eye. As the first text completely devoted to this topic, Anterior Segment Optical Coherence Tomography comprehensively explains both the scientific principles and the clinical applications of this exciting and advancing technology. Anterior Segment Optical Coherence Tomography enhances surgical planning and postoperative care for a variety of anterior segment applications

by expertly explaining how abnormalities in the anterior chamber angle, cornea, iris, and lens can be identified and evaluated using the Visante OCT(TM). Inside Anterior Segment Optical Coherence Tomography, Dr. Roger Steinert and Dr. David Huang, along with 22 of the field's leading professionals, provide a wealth of useful clinical and physiological material about this new diagnostic imaging technique. Valuable images are included to assist in the pre- and postoperative assessment of various anterior segment disorders. Additionally, this unique resource contains detailed information on biometric measurements to enhance diagnostic capability. On the leading edge of anterior segment imaging: Mapping of corneal thickness and keratoconus evaluation Measurement of LASIK flap and stromal bed thickness Visualization and measurement of anterior chamber angle and diagnosis of narrow angle glaucoma Measuring the dimensions of the anterior chamber and assessing the fit of intraocular lens implants Visualizing and measuring the results of corneal implants and lamellar procedures Imaging through corneal opacity to see internal eye structures With the increase in popularity of anterior chamber imaging, and anterior segment OCT proving to be the best tool for high resolution biometry, Anterior Segment Optical Coherence Tomography is a must-have for anterior segment, refractive, cornea, and glaucoma surgeons.

This book includes different exciting topics in the OCT fields, written by experts from all over the world. Technological developments, as well as clinical and industrial applications are covered. Some interesting topics like the ultrahigh resolution OCT, the functional extension of OCT and the full field OCT are reviewed, and the applications of OCT in ophthalmology, cardiology and dentistry are also addressed. I believe that a broad range of readers, such as students, researchers and physicians will benefit from this book.

Arguably the most important ancillary test available to ophthalmologists worldwide, optical coherence tomography (OCT) has revolutionized the field, and now includes angiographic evaluations (OCTA) that provide vascular flow data without eye injection. Handbook of Retinal OCT is an easy-to-use, high-yield guide to both OCT and OCTA imaging for practitioners at any stage of their career. Highly templated, concise, and portable, this revised edition helps you master the latest imaging methods used to evaluate retinal disease, uveitis, and optic nerve disorders. Helps all health professionals with an interest in OCT to better and more quickly interpret OCT imaging, offering quick, highly visual guidance for evaluating age-related macular degeneration, diabetic retinopathy, retinal vein occlusion, and much more. Provides quick answers with bulleted, templated chapters, each focused on one specific diagnosis or group of diagnoses with a particular OCT appearance. Demonstrates how the full spectrum of diseases presents through approximately 400 illustrations, including the highest-quality spectral-domain OCT images available and more than 50 new OCTA images. Includes five new chapters covering optic nerve disease with retinal findings, pachychoroid diseases, paracentral acute middle maculopathy (PAMM), auto-immune retinopathies, and primary uveal lymphoma. Offers clear visual guidance on image patterns with multiple arrows and labels throughout to highlight key details of each disease.

Optical coherence tomography (OCT) angiography is an impor-

tant new imaging modality that is already being used by ophthalmologists in retina centers worldwide. It uses motion as intrinsic contrast, thus obviating the need to inject any intravenous dye. It uses infrared light that is invisible to the patient, and only requires few seconds per scan. This makes it both easier to use and much better tolerated by patients than traditional dye-based fluorescein angiography (FA) and indocyanine green (ICG) angiography. Inside Optical Coherence Tomography Angiography of the Eye Drs. David Huang, Bruno Lumbroso, Yali Jia, and Nadia Waheed include detailed information on clinical applications and fundamental principles needed to understand and use this new technology. This includes information on high-speed OCT systems, algorithms to extract flow contrast, the appearance of the normal eye, the findings in myriad diseases, and tips on how to deal with artifact and pitfalls. The 3-dimensional nature of OCT angiography provides visualization that was not possible before with either FA or ICG and readers will come to appreciate how this enables the visualization of previously difficult to image vascular beds such as the 4 retinal vascular plexuses (radial peripapillary, superficial, intermediate, and deep), the choriocapillaris, and the deeper choroidal vessels. Given its noninvasive nature and ease of use, OCT angiography imaging is rapidly taking an important place in everyday ophthalmology and may soon replace fluorescein angiography in everyday practice. Optical Coherence Tomography Angiography of the Eye is designed to be the definitive text on this cutting-edge technology for the retina specialist and comprehensive ophthalmologist.

The fourth edition of this atlas has been completely updated to provide the latest thinking and technology developments in the use of OCT with macular diseases and glaucoma. Beginning with an introduction to OCT, the following section discusses its use with a range of conditions and disorders associated with macular diseases such as macular hole, foveal haemorrhage and retinal trauma. The final section examines the use of OCT for diagnosis and management of glaucoma. This new edition features more than 1300 illustrations including fundus photographs, fluorescein angiography and OCT images. Brief case studies are described and a new chapter on multimodal imaging has been included in this new edition. The bestselling previous edition published in 2010.

Optical Coherence Tomography (OCT) plays a vital role in pediatric retina diagnosis, often revealing unrecognized retinal disorders and connections to brain injury, disease, and delayed neurodevelopment. Handbook of Pediatric Retinal OCT and the Eye--Brain Connection provides authoritative, up-to-date guidance in this promising area, showing how to optimize imaging in young children and infants, how to accurately interpret these images, and how to identify links between these images and brain and developmental disorders. Illustrates optimal methods of OCT imaging of children and infants, how to avoid pitfalls, and how to recognize and avoid artifacts Explains how the OCT image may relate to brain disease and delayed neurodevelopment Features more than 200 high-quality images and scans that depict the full range of disease in infants and young children Provides guidance in identifying retinal layers and important abnormalities. Covers the structural features of the retina and optic nerve head in developmental, acquired, or inherited conditions that affect the eye and visual pathways Offers practical ways to set up imaging programs

in the clinic, operating room, or neonatal nursery

This book guides the reading in the steps in interpreting optical coherence tomography (OCT) images of the retina and macula, using simple color-coded guides with clear and concise explanations. The color-coded images will enable the user to become a pro at OCT interpretation.

This book covers the results of the creation of methods for ophthalmologists support in OCT images automated analysis. These methods, like the application developed on their basis, are used during routine examinations carried out in hospital. The monograph comprises proposals of new and also of known algorithms, modified by authors, for image analysis and processing, presented on the basis of example of Matlab environment with Image Processing tools. The results are not only obtained fully automatically, but also repeatable, providing doctors with quantitative information on the degree of pathology occurring in the patient. In this case the anterior and posterior eye segment is analysed, e.g. the measurement of the filtration angle or individual layers thickness. To introduce the Readers to subtleties related to the implementation of selected fragments of algorithms, the notation of some of them in the Matlab environment has been given. The presented source code is shown only in the form of example of implementable selected algorithm. In no way we impose here the method of resolution on the Reader and we only provide the confirmation of a possibility of its practical implementation.

Optical Coherence Tomography gives a broad treatment of the subject which will include 1)the optics, science, and physics needed to understand the technology 2) a description of applications with a critical look at how the technology will successfully address actual clinical need, and 3) a discussion of delivery of OCT to the patient, FDA approval and comparisons with available competing technologies. The required mathematical rigor will be present where needed but be presented in such a way that it will not prevent non-scientists and non-engineers from gaining a basic understanding of OCT and the applications as well as the issues of bringing the technology to the market. Optical Coherence Tomography is a new medical high-resolution imaging technology which offers distinct advantages over current medical imaging technologies and is attracting a large number of researchers. Provides non-scientists and non-engineers basic understanding of Optical Coherence Tomography applications and issues.

This atlas presents an overview of Swept Source Optical Coherence Tomography (OCT) and its implications on diagnostics of vitreous, retina and choroid. As the sensitivity of OCT imaging devices has increased, updated technologies have become available for engineers, scientists and medical specialists to adopt, and recent developments have led to the creation of a new generation of devices. The aim of this resource is to explain this new technology and its advantages over previous imaging devices and to illustrate how it may be used in to define eye diseases, aid in their treatment and facilitate treatment options.

Part of the Essentials in Ophthalmology series, this atlas is designed to comprehensively cover optical coherence tomography of the anterior segment of the eye. The aim is to improve knowledge of the fundamentals of OCT technology for anterior segment, clarify the differences with posterior segment OCT and em-

phasize the immense relevance and usefulness that anterior segment OCT study has for diagnosis, therapeutic orientation, surgical guidance, and improvement in patient management. Atlas of Anterior Segment Optical Coherence Tomography is organized into comprehensive chapters on the following topics: fundamentals, technologies and technological differences among platforms, application of OCT, corneal OCT angiography, as well as case-based chapters. Numerous highly-detailed figures, illustrations and photographs make this an ideal resource for the corneal specialist seeking further instruction on this cutting-edge technology. The case-based chapters include such conditions as bowman dystrophies, trauma, cataract, glaucoma, sclera, refractive surgery, ocular infections, and are structured to facilitate the consultant surgeon by providing practical information applicable to practical cases in their practice.

In den letzten Jahren hat sich der Workshop "Bildverarbeitung für die Medizin" durch erfolgreiche Veranstaltungen etabliert. Ziel ist auch 2019 wieder die Darstellung aktueller Forschungsergebnisse und die Vertiefung der Gespräche zwischen Wissenschaftlern, Industrie und Anwendern. Die Beiträge dieses Bandes - einige davon in englischer Sprache - umfassen alle Bereiche der medizinischen Bildverarbeitung, insbesondere Bildgebung und -akquisition, Maschinelles Lernen, Bildsegmentierung und Bildanalyse, Visualisierung und Animation, Zeitreihenanalyse, Computerunterstützte Diagnose, Biomechanische Modellierung, Validierung und Qualitätssicherung, Bildverarbeitung in der Telemedizin u.v.m.

OCT provided a great advantage over other diagnostic modalities, as it could noninvasively provide tomographic images of the retina of a living eye. As a result, a number of new findings in retinal diseases were made using the time-domain OCT. OCT has now become an essential medical equipment OCT has now become an essential medical equipment in ophthalmic care and quality textbooks describing the functionality of OCT are very important in the education of young ophthalmologists and eye care personnel. In this book are chosen high quality OCT images of rather common diseases as well as images of several rare diseases.

Optical coherence tomography (OCT) is the optical analog of ultrasound imaging and is emerging as a powerful imaging technique that enables non-invasive, in vivo, high resolution, cross-sectional imaging in biological tissue. This book introduces OCT technology and applications not only from an optical and technological viewpoint, but also from biomedical and clinical perspectives. The chapters are written by leading research groups, in a style comprehensible to a broad audience.

This book covers the state-of-the-art techniques of fundus imaging for the diagnosis of retinal diseases. It is part of a three-volume work that describes the latest imaging techniques in which to bring optical coherence tomography (OCT), fundus Imaging and optical coherence tomography angiography (OCTA) to accurately facilitate the diagnosis of retinal diseases. Clinical disorders of the retina have been attracting the attention of researchers, aiming at reducing the blindness rate. This includes uveitis, diabetic retinopathy, macular edema, endophthalmitis, proliferative retinopathy, age-related macular degeneration and glaucoma. Treatment is significantly dependent on having early and accurate diagnosis, which can be significantly improved by employ-

ing the techniques described in the book. Key Features Provides a comprehensive overview of all pertinent topics related to fundus imaging techniques, applicable to diagnosis of eye disorders Offers a unique coverage of Neural Networks in distinguishing eye diseases Machine learning techniques are presented in detail throughout Many of the chapter contributors are world-class researchers Extensive references will be provided at the end of each chapter to enhance further study

This open access book provides a comprehensive overview of the application of the newest laser and microscope/ophthalmoscope technology in the field of high resolution imaging in microscopy and ophthalmology. Starting by describing High-Resolution 3D Light Microscopy with STED and RESOLFT, the book goes on to cover retinal and anterior segment imaging and image-guided treatment and also discusses the development of adaptive optics in vision science and ophthalmology. Using an interdisciplinary approach, the reader will learn about the latest developments and most up to date technology in the field and how these translate to a medical setting. High Resolution Imaging in Microscopy and Ophthalmology – New Frontiers in Biomedical Optics has been written by leading experts in the field and offers insights on engineering, biology, and medicine, thus being a valuable addition for scientists, engineers, and clinicians with technical and medical interest who would like to understand the equipment, the applications and the medical/biological background. Lastly, this book is dedicated to the memory of Dr. Gerhard Zinser, co-founder of Heidelberg Engineering GmbH, a scientist, a husband, a brother, a colleague, and a friend.

Optical coherence tomography (OCT) is a promising non-invasive non-contact 3D imaging technique that can be used to evaluate and inspect material surfaces, multilayer polymer films, fiber coils, and coatings. OCT can be used for the examination of cultural heritage objects and 3D imaging of microstructures. With subsurface 3D fingerprint imaging capability, OCT could be a valuable tool for enhancing security in biometric applications. OCT can also be used for the evaluation of fastener flushness for improving aerodynamic performance of high-speed aircraft. More and more OCT non-medical applications are emerging. In this book, we present some recent advancements in OCT technology and non-medical applications.

This open access book gives a complete and comprehensive introduction to the fields of medical imaging systems, as designed for a broad range of applications. The authors of the book first explain the foundations of system theory and image processing, before highlighting several modalities in a dedicated chapter. The initial focus is on modalities that are closely related to traditional camera systems such as endoscopy and microscopy. This is followed by more complex image formation processes: magnetic resonance imaging, X-ray projection imaging, computed tomography, X-ray phase-contrast imaging, nuclear imaging, ultrasound, and optical coherence tomography.

"The recent introduction of optical coherence tomography angiography (OCTA) has remarkably expanded our knowledge of different retinal, chorioretinal, and optic disc disorders. OCTA is nowadays often introduced as a routine exam in clinical practice, granting the opportunity to non-invasively investigate retinal and choroidal circulation. In this book, many major experts in posteri-

or eye imaging share their experiences and their latest images and ideas about OCTA"--

I am very proud and excited to introduce to you this book, which provides many interesting indications on how to better understand and handle the world of opticalcoherence tomography (OCT). Reading the chapters, you will be aware that this device is extremely important not just in the clinical practice of retinal diseases, but is also very useful as a surgical tool. Moreover, application of OCT has crossed the borders of the retina and is currently being applied to corneal diseases and glaucoma. I amconfident you will find enough useful information to improve your practice using OCT and to provide a better quality of care for your patients.

Provides the latest information on imaging technologies and transdermal delivery in skin disorders This important, timely book covers the latest understanding about today's major skin disorders, the development of imaging technologies for skin diagnosis, and the applications of micro/nano-technologies for the treatment of skin complications. It also places great emphasis on the critical role that interdisciplinary science occupies to achieve the requisite level of understanding of skin conditions and their management, which is essential to creating technologies that work. Imaging Technologies and Transdermal Delivery in Skin Disorders starts by outlining the structural characteristics of skin and skin appendages. It then discusses the key pathways involved in skin growth and development. Clinical presentations, pathophysiological mechanisms, and current clinical practices used to treat diseases affecting the skin are then introduced. Common preclinical models used for studying the mechanisms of diverse skin diseases, validation of novel therapeutic targets, and screening of new drugs to treat these diseases are also covered. The book examines the latest imaging technologies for understanding in vivo skin changes, as well as technologies such as high-resolution ultrasound imaging, quantitative Magnetic Resonance Imaging, high-resolution Optical Coherence Tomography, and emerging hybrid-imaging modalities. It concludes with chapters introducing emerging drug delivery technologies and potential future innovative developments. * Presents up-to-date knowledge of the skin biology and pathologies * Introduces advancements in the topic of imaging technology for tracing the drug delivery process, which is rarely systematically reported by other counterparts * Covers the latest development in three inter-related directions of drug delivery, imaging, and skin disease intersect for skin research * Provides an overview of the latest development of diagnostic and therapeutic technologies for skin diseases Imaging Technologies and Transdermal Delivery in Skin Disorders will be of great interest to analytical chemists, materials scientists, pharmaceutical chemists, clinical chemists, biotechnologists, bioengineers, cosmetics industry, and dermatologists.

This book aims to build concepts and create a solid foundation in the field of optical coherence tomography (OCT) for the general ophthalmologists as well as for the resident trainees and fellows. The chapters are written by leading international authorities in a style comprehensible to a broad audience. Numerous clinical pictures and SD-OCT scans help elucidate various clinical entities.OCT is the optical analog of ultrasound imaging and has emerged as a powerful imaging technique that enables non-invasive, in-vivo, high-resolution, cross-sectional imaging in retinal tissue. A new generation spectral domain optical coherence tomog-

raphy (SD-OCT) technology has now been developed, representing a quantum leap in resolution and speed, achieving in vivo optical biopsy. i.e. the visualization of tissue architectural morphology in situ and in real time. This book encompasses the role of SD-OCT in both medical and surgical macular disorders. The book is meant coherent and comprehensive for both vitreoretinal specialists as well as general ophthalmologists.

This book is to help optical coherence tomography (OCT) users interpret images that, at the beginning, may look very complex and bewildering. We use a logical method for interpreting OCT images. The first phase of analysis subdivides each image into its smallest components. The second phase combines these fine details to arrive at a synthesis; from then, to an accurate diagnosis and decide an appropriate therapy. This manual features detailed schematic illustrations as well as actual scans, and is a step-by-step guide for interpreting images acquired by spectral domain OCT. It gives information on technical and clinical possibilities in the study of glaucoma and on three-dimensional images. This book help the readers reach logical interpretations of the OCT scans and assist OCT users in the difficult task of sifting through the mass of data to extract useful information.

Diabetes and Fundus OCT brings together a stellar cast of authors who review the computer-aided diagnostic (CAD) systems developed to diagnose non-proliferative diabetic retinopathy in an automated fashion using Fundus and OCTA images. Academic researchers, bioengineers, new investigators and students interested in diabetes and retinopathy need an authoritative reference to bring this multidisciplinary field together to help reduce the amount of time spent on source-searching and instead focus on actual research and the clinical application. This reference depicts the current clinical understanding of diabetic retinopathy, along with the many scientific advances in understanding this condition. As the role of optical coherence tomography (OCT) in the assessment and management of diabetic retinopathy has become significant in understanding the vireo retinal relationships and the internal architecture of the retina, this information is more critical than ever. Includes unique information for academic clinicians, researchers and bioengineers Provides insights needed to understand the imaging modalities involved, the unmet clinical need that is being addressed, and the engineering and technical approaches applied Brings together details on the retinal vasculature in diabetics as imaged by optical coherence tomography angiography and automated detection of retinal disease

In den letzten Jahren hat sich der Workshop "Bildverarbeitung für die Medizin" durch erfolgreiche Veranstaltungen etabliert. Ziel ist auch 2020 wieder die Darstellung aktueller Forschungsergebnisse und die Vertiefung der Gespräche zwischen Wissenschaftlern, Industrie und Anwendern. Die Beiträge dieses Bandes - einige davon in englischer Sprache - umfassen alle Bereiche der medizinischen Bildverarbeitung, insbesondere Bildgebung und -akquisition, Maschinelles Lernen, Bildsegmentierung und Bildanalyse, Visualisierung und Animation, Zeitreihenanalyse, Computerunterstützte Diagnose, Biomechanische Modellierung, Validierung und Qualitätssicherung, Bildverarbeitung in der Telemedizin u.v.m.

Pathologic Myopia is a major cause of severe vision loss worldwide. The mechanisms for vision loss include cataract, glaucoma,

retinal detachment, and above all, myopic maculopathy within the posterior staphyloma. The first edition of Pathologic Myopia is one of the only current books to specifically address this disease and discusses recent developments in imaging technologies and various approaches to treatments, such as laser photocoagulation, photodynamic therapy, pharmaco-therapeutic injections in the vitreous, and surgery. This new edition is a timely update to the standard reference in the field, with new chapters on advanced refractive error correction, genetics, developing a classification system, and special surgical approaches for pathologic myopia. Complete with even more high-quality color images and informative tables, this book is written and edited by leaders in the field and is geared towards ophthalmologists, including residents and fellows in training, glaucoma and cataract specialists, and vitreoretinal macula experts.

This atlas offers a truly comprehensive update on the use of imaging technologies for the diagnosis and follow-up of glaucoma. In addition to standard automated perimetry, gonioscopy, fundus photography, and stereophotography, other advanced, high-resolution methods for imaging the eye in glaucoma are explained in detail, including ultrasound biomicroscopy, confocal scanning laser ophthalmoscopy, scanning laser polarimetry, and spectral domain optical coherence tomography. The role of the various tests and the keys to optimizing their use in clinical practice are detailed with the aid of high-quality figures in order to enable the reader to achieve the best possible performance when applying these tools. The risk of developing visual disability and blindness as a consequence of glaucoma varies widely among affected individuals. Personalized testing strategies and tailored therapeutic interventions are required to effectively reduce visual impairment due to glaucoma. Glaucoma Imaging will assist residents, researchers, and clinicians in improving their ability to understand and integrate the information obtained using traditional techniques with the reports provided by computer-assisted image instruments.

OCT is a relatively new imaging technique that is becoming increasingly popular among ophthalmologists in both private and academic settings. Imaging has been a slow moving area in ophthalmology for some time, but now OCT is providing another, more detailed source of demonstrable change in the eye, in diagnostic, therapeutic or post-surgical setting. OCT and ultrasound both measure advancing disease states and post surgical healing. The difference is that OCT shows more subtle changes, particularly post-surgically.

OCT Angiography by David R. Chow and a cadre of renowned authors is an authoritative, richly illustrated guide on a groundbreaking new ophthalmic imaging technique. Optical coherence tomography angiography is revolutionizing ophthalmologic diagnosis and management of retinal disease. The technology is transforming the ocular disease diagnostic paradigm - from the retina to the choroid - enabling precision-tailored patient management. Noninvasive and more sophisticated than fluorescein angiography, OCTA obviates the need for dye and yields an unprecedented level of detail. The layered visualization of the retina and choroid vasculature delivers greater understanding of retinal disease. From sight-robbing eye diseases affecting millions such as age-related macular degeneration, diabetic retinopathy, and glau-

coma - to rare conditions like adult-onset vitelliform macular dystrophy, readers will glean insights on the capabilities of this remarkable innovation. Key Features Hands-on pearls from trailblazers who have pioneered and implemented the use of OCTA in clinical practice Dedicated chapters on AMD, diabetic retinopathy, retinal venous occlusions, arterial occlusions, central serous chorioretinopathy, macular telangiectasia type 2, adult-onset vitelliform macular dystrophy, and high myopia Expanding indications for uveitis, ocular oncology, radiation retinopathy, glaucoma, the anterior segment, as well as future applications Grand Rounds cases include a wealth of multimodal images and highly informative learning points This exceptional resource is a must-have for every ophthalmology resident and practitioner. The comprehensive text coupled with high quality illustrations will enable ophthalmologists to leverage the full potential of this technique in daily practice.

"Optical Coherence Tomography of Ocular Diseases, Fourth Edition covers a range of subjects, from principles and operation techniques to clinical interpretation and the latest innovations in OCT. This book is an essential text for imaging technology. OCT now occupies a dominant role as a diagnostic tool for retinal conditions and glaucoma. At the same time, the technology continues to show potential for emerging clinical and research applications across all the ophthalmological subspecialties. To reflect these rapid advances, this new edition of Optical Coherence Tomography of Ocular Diseases features a complete and thorough revision of the existing text as well as the addition of cutting-edge content to bring this classic resource completely up to date"--

This book provides a collection of optical coherence tomographic (OCT) images of various diseases of posterior and anterior segments. It covers the details and issues of diagnostic tests based on OCT findings which are crucial for ophthalmologists to understand in their clinical practice. Throughout the chapters all aspects of this non-invasive, popular imaging technique, known for ingenuity and accuracy, is clearly illustrated. Atlas of Ocular Optical Coherence Tomography has been categorized into eleven sections, discussing and illustrating distinct OCT features, as well as showing other image modalities such as fluorescein angiography, fundus autofluorescence, perimetry and laboratory examination. This book also covers choroidal pathologies and vitreous abnormalities. The last section has been allocated to anterior segment disease, including cornea, angle, iris and conjunctival abnormalities. Above all, the numerous images, and detailed descriptions of diseases, make this book an essential guide for general ophthalmologists and ophthalmology residences.

Written by an expert in the field, this book is a comprehensive and up-to-date guide to the evaluation and management of lacrimal drainage disorders. Lacrimal disorders are one of the most common conditions encountered not only by oculoplastic surgeons and general ophthalmologists, but also by otorhinolaryngologists in their daily practice. Consisting of 77 chapters, it addresses the basic anatomy and underlying pathology, patient evaluation, and the surgical procedures currently performed in managing various lacrimal disorders. Surgical modalities including the endoscopic approaches are thoroughly and succinctly captured in pictures with detailed legends to aid understanding and offer a visual treat. Since familiarity with a surgical technique is incom-

plete without the knowledge of risk factors and red flags, the book discusses in detail how to deal with surgical complications and failure. The Atlas of Lacrimal Drainage Disorders is an essential companion to the a uthor's previous work "Principles and Practice of Lacrimal Surgery"..

Atlas of Optical Coherence Tomography for Glaucoma is a case-based atlas intended to teach the reader how to interpret the results of OCT in glaucoma patients and glaucoma suspects. After a brief description of how OCT is used in particular situations, chapters depict actual case presentations from authors' practices with legends that describe the case and how OCT is used to make the diagnosis of glaucoma or glaucoma progression. Emphasis is placed on where OCT can lead the clinician astray by providing false positive or false negative results resulting in misdiagnosis. The intention of the format is to make it easily digestible in a weekend read and make the practitioner comfortable with OCT interpretation. Examples are presented from all of the available OCT manufacturers.