Optical Coherence Tomography

Technology and Applications

- Opens the latest developments in OCT to a broad readership, from undergraduates to experts
- Presents the OCT technique from optical, technological, biomedical & clinical points of view
- Incorporates work from top engineering and clinical groups, from research to application
- Provides an accessible introduction to optical coherence tomography technology (OCT)

Optical coherence tomography (OCT) is the optical analog of ultrasound imaging and is a powerful imaging technique that enables non-invasive, in vivo, high resolution, cross-sectional imaging in biological tissue. Between 30 to 40 Million OCT imaging procedures are performed per year in ophthalmology. The overall market is estimated at more than 0.5 Billion USD. A new generation OCT technology was developed, dramatically increasing resolution and speed, achieving in vivo optical biopsy, i.e. the visualization of tissue architectural morphology in situ and in real time. Functional extensions of OCT technology enable non-invasive, depth resolved functional assessment and imaging of tissue. The book introduces OCT technology and applications not only from an optical and technological viewpoint, but also from the biomedical and clinical perspective. This second edition is widely extended and covers significantly more topics than the first edition of this book. The chapters are written by leading international research groups, in a style comprehensible to a broad audience. It will be of interest not only to physicists, scientists and engineers, but also to biomedical and clinical researchers from different medical specialties.

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