

Confocal Scanning Optical Microscopy and Related Imaging Systems
by Timothy R Corle & Gordon S Kino

This book provides a comprehensive introduction to the field of scanning optical microscopy for scientists and engineers. The book concentrates mainly on two instruments: the Confocal Scanning Optical Microscope (CSOM) and the Optical Interference Microscope (OIM). A comprehensive discussion of the theory and design of the Near-Field Scanning Optical Microscope (NSOM) is also included.

Key Features

- Explains many practical applications of scanning optical and interference microscopy in such diverse fields as biology and semiconductor metrology
- Discusses in theoretical terms the origin of the improved depth and transverse resolution of scanning optical and interference microscopes
- Considers the practical aspects of building a confocal scanning or interference microscope and explores some of the design tradeoffs
- Discusses the theory and design of near-field optical microscopes
- Explains phase imaging in the scanning optical and interference microscopes

B329 Confocal Scanning Optical Microscopes and related imaging systems 360pp

Handbook of Biological Confocal Microscopy - Second Edition
edited by James B Pawley

This extremely useful reference work gives a detailed survey of the latest developments in the instrumentation and application of confocal microscopy to biological research. Each of the 36 chapters covers one aspect of the field comprehensively. Highlights of the second edition include a comprehensive index and over 475 high quality colour plates, halftones, and line drawings that reinforce material covered in the text.

Practical and user friendly, the *Handbook* is extensively cross-referenced, includes an annotated bibliography and features a unique tutorial chapter showing novice researchers how to locate the information they need within the book.

B309 Handbook of Biological Confocal Microscopy 2nd Edition 656pp

Other Microscopies

Advances in Acoustic Microscopy edited by Andrew Briggs

Volume 1. Leading international researchers focus on techniques and methods of analysis for quantitative measurement. The discussions cover interior imaging of materials and electronic devices, short fatigue cracks, surface wave measurements, and applications of acoustic microscopy to problems in biology. Other contributions describe the extension of surface wave measurements to 20Ghz by Brillouin spectroscopy and near-field scanning probe acoustic microscopy.

B306 Advances in Acoustic Microscopy Volume 1 382pp

Volume 2 of this multivolume work continues to plot the remarkable strides being made worldwide in application and techniques of high resolution acoustic imaging. Like its predecessor, Volume 2 examines testing of acoustic microscopes for imaging both biological and inert materials to exceptionally resolutions, exploiting the latest proven techniques both in industry and development.

Contents; Characterisation of electronic components by acoustic microscopy; Principles and applications of high-frequency medical imaging; Interaction of acoustic waves with solid surfaces; Scanning acoustic microscopy with phase contrast; Ultrasonic focusing with time reversal mirrors; Each chapter contains references & index.

B318 Advances in Acoustic Microscopy Vol 2 288pp, 275 illustrations

Light Spectroscopy by D A Harris

Spectrometry and spectrofluorimetry are core techniques used throughout the life sciences and medicine. These techniques evolve continuously and this book provides information on the latest advances in spectroscopic methods. *Light Spectroscopy* begins by describing the basic principles and then provides practical guidance on the wide range of current techniques for their application and analysis of the results obtained.

Contents:

Principles; What to look for in spectrophotometer design; Geometry, light paths and beam splitting; Measuring absorbance and fluorescence; Measuring an absorption spectrum and a fluorescence spectrum; Measuring at a fixed wavelength; Probing the environment; Glossary; Suppliers; Further reading;

Suitable for advanced undergrads. in bio sciences, postgrads, researchers & hospital staff. 192pp

B282 Light Spectroscopy

Modern Microscopies - Techniques and Applications Edited by P J Duke & A G Michette

Modern Microscopies introduces a number of new imaging techniques to supplement and expand the information that can be obtained from traditional electron microscopy. Particular emphasis is given to an extended discussion of X-ray microscopy, including the electron synchrotron storage ring, the high power laser plasma and new methods of aberration-free X-ray.

Cryo-electron microscopy, X-ray holography, scanning tunnelling microscopy, NMR imaging, and many other contemporary techniques are also detailed.

Contents: Electron microscopy of biological macromolecules; Frozen hydrated methods and computer imaging; Radiation sources for X-ray microscopy; Amplitude and phase contrast in X-ray microscopy; Scanning X-ray microscopy; X-ray microradiography and shadow projection X-ray microscopy; Progress and prospects in soft X-ray holographic microscopy; Prospects for NMR microscopy; NMR microscopy of plants; Confocal optical microscopy; Acoustic microscopy; Scanning tunnelling microscopy in biology; Resolution: A biological perspective; Index.

B321 Modern Microscopies 266pp

Raman Microscopy Developments & Applications edited by G Turrell & J Corset

One of the first books devoted entirely to the subject of Raman microscopy, this volume addresses the issues of interest to researchers in this area of science. The book is written by several world recognised experts who summarise the Raman effect before discussing the hardware and software involved in today's instruments. All important applications including those in materials and earth science are covered in depth.

- Includes extensive description of the instrumentation, the Raman microspectrograph, the treatment of data and micro Raman imaging
- Summarises the Raman effect
- Discusses new uses for this technology

B330 Raman Microscopy