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Soggetti	Pharmaceutical technology Biology—Technique Spectroscopy Biomedical engineering Pharmaceutical Sciences/Technology Biological Techniques Spectroscopy/Spectrometry Biomedical Engineering/Biotechnology
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Note generali	Includes index.
Nota di contenuto	UV/Vis spectrophotometry and UV imaging -- Fluorescence spectroscopy: basic foundations and methods -- Mid and Near Infrared Spectroscopy -- Raman Spectroscopy -- Pharmaceutical Terahertz Spectroscopy and Imaging -- Circular Dichroism Spectroscopy for Structural Characterization of Proteins -- Application of Mass Spectrometry in Drug Development Science -- WAXD -- Single Crystal X-Ray Diffraction -- Applications of Small Angle X-Ray Scattering in Pharmaceutical Science -- Thermal Analysis of Pharmaceuticals -- Isothermal Microcalorimetry -- HPLC/UHPLC -- Capillary-based Techniques for Physical-chemical Characterization of Drug Substances and Drug Delivery Systems -- Asymmetrical Flow Field Flow Fractionation: a useful tool for the separation of protein pharmaceuticals and particulate systems -- Light and Electron Microscopy -- Vibrational Spectroscopic Imaging -- Magnetic Resonance Imaging and its Applications to Solid Pharmaceutical Dosage Forms -- Mass Spectrometry Imaging of Pharmaceuticals: From Tablets

to Tissues -- Applications of AFM in Pharmaceutical Sciences -- Particle Size Analysis of Micro- and Nanoparticles -- Particle Size Measurements in Aerosols -- Rheology in Pharmaceutical Sciences -- Evaluating Oral Drug Delivery Systems: Dissolution Models -- Evaluating Oral Drug Delivery Systems: Digestion Models -- Application of Cell Culture and Tissue Models for Assessing Drug Transport.

Sommario/riassunto

The aim of this book is to present a range of analytical methods that can be used in formulation design and development and focus on how these systems can be applied to understand formulation components and the dosage form these build. To effectively design and exploit drug delivery systems, the underlying characteristic of a dosage form must be understood--from the characteristics of the individual formulation components, to how they act and interact within the formulation, and finally, to how this formulation responds in different biological environments. To achieve this, there is a wide range of analytical techniques that can be adopted to understand and elucidate the mechanics of drug delivery and drug formulation. Such methods include e.g. spectroscopic analysis, diffractometric analysis, thermal investigations, surface analytical techniques, particle size analysis, rheological techniques, methods to characterize drug stability and release, and biological analysis in appropriate cell and animal models. Whilst each of these methods can encompass a full research area in their own right, formulation scientists must be able to effectively apply these methods to the delivery system they are considering. The information in this book is designed to support researchers in their ability to fully characterize and analyze a range of delivery systems, using an appropriate selection of analytical techniques. Due to its consideration of regulatory approval, this book will also be suitable for industrial researchers both at early stage up to pre-clinical research.