1. Record Nr. UNINA9910743224503321

Titolo	Computer Aided Pharmaceutics and Drug Delivery : An Application Guide for Students and Researchers of Pharmaceutical Sciences / / edited by Vikas Anand Saharan
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2022
ISBN	981-16-5180-9 981-16-5179-5
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (767 pages)
Disciplina	950.05
Soggetti	Pharmaceutical chemistry Pharmacology Drug delivery systems Biotechnology Pharmaceutics Drug Delivery
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	History and Present Scenario of Computers in Pharmaceutical Research and Development.-Historical Developments on Computer Applications in Pharmaceutics -- Computer Aided Formulation Development -- Quality-by-Design in Pharmaceutical Development -- Teaching Principles of DoE as an Element of QbD for Pharmacy Students -- Computer-Assisted Manufacturing of Medicines -- Computer Aided Biopharmaceutical Characterization: Gastrointestinal Absorption Simulation and In Silico Computational Modeling -- Computer Simulation and Modeling in Pharmacokinetics and Pharmacodynamics -- Physiologicallly Based Pharmacokinetic Modelling -- Computers in Clinical Development -- Artificial Intelligence (AI) -- Robotic Automation of Pharmaceutical and Life Science Industries -- Soft Robots for the Delivery of Drugs -- Use of Computers and Internet in Scholarly Information Retrieval -- Patent Searching -- Computer Aided Drug Design (CADD) -- Quantitative Structure Property Relationship (QSPR) Modeling Applications in Formulation Development -- Modeling

Approaches for Studies of Drug-Polymer Interactions in Drug Delivery Systems -- Computers in Pharmaceutical Analysis -- Telemedicine -- Bioinformatics in Drug-Design and Delivery -- Statistical Modeling Techniques -- Molecular Modelling of Nanoparticles -- Pharmaceutics Informatics: Bio/chemoinformatics in Drug Delivery -- Computer-aided Development and Testing of Human Extra-thoracic Airway Models for Inhalation Drug Delivery.

Sommario/riassunto

This book examines the role of computer-assisted techniques for discovering, designing, optimizing and manufacturing new, effective, and safe pharmaceutical formulations and drug delivery systems. The book discusses computational approaches, statistical modeling and molecular modeling for the development and safe delivery of drugs in humans. The application of concepts of QbD (Quality by Design), DoE (Design of Experiments), artificial intelligence and in silico pharmacokinetic assessment/simulation have been made a lot easier with the help of commercial software and expert systems. This title provides in-depth knowledge of such useful software with illustrations from the latest researches. The book also fills in the gap between pharmaceutics and molecular modeling at micro, meso and maro scale by covering topics such as advancements in computer-aided Drug Design (CADD), drug-polymer interactions in drug delivery systems, molecular modeling of nanoparticles and pharmaceutics/bioinformatics. This book provides abundant applications of computers in formulation designing and characterization are provided as examples, case studies and illustrations. Short reviews of software, databases and expert systems have also been added to culminate the interest of readers for novel applications in formulation development and drug delivery. Computer-aided pharmaceutics and drug delivery is an authoritative reference source for all the latest scholarly update on emerging developments in computed assisted techniques for drug designing and development. The book is ideally designed for pharmacists, medical practitioners, students and researchers. .