

### Design of Controlled Release Drug Delivery Systems (McGraw-Hill Chemical Engineering)

By Xiaoling Li



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The goal of every drug delivery system is to deliver the precise amount of a drug at a pre-programmed rate to the desired location in order to achieve the drug level necessary for the treatment. An essential guide for biomedical engineers and pharmaceutical designers, this resource combines physicochemical principles with physiological processes to facilitate the design of systems that will deliver medication at the time and place it is most needed.



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#### **Editorial Review**

From the Back Cover

### A RIGOROUS EXPLORATION OF THE STATE OF THE ART IN CONTROLLED RELEASE DRUG DELIVERY

Written by an International team of experts, this comprehensive text offers pharmaceutical scientists and engineers working in the field, state-of-the-art design principles for the development and bioengineering of drug delivery systems/technology. Readers will find drug delivery systems presented with a particular emphasis on the design principles and their physiological/pathological basis. For each specific design principle, the contributors briefly introduce the relevant pharmacokinetics (where necessary) and include the challenges of different biological barriers that need to be overcome.

#### This in-depth text features detailed coverage of:

- Physiological and biochemical barriers to drug delivery
- Pharmacokinetics and pharmacodynamics of drug delivery
- Diffusion and dissolution strategies
- Prodrugs
- Bioadhesive and gastric retentive systems
- Physiological and biochemical barriers to drug delivery
- Targeted drug delivery
- Device controlled and programmable drug delivery
- And more

### A COMPREHENSIVE REFERENCE ON THE BIOCHEMICAL, PHYSICAL, AND TECHNICAL ASPECTS OF DRUG DELIVERY SYSTEMS

\* Pharmacokinetics and Pharmacodynamics: Applications in the Design of Controlled Release Drug
Delivery Systems \* Barriers to Drug Delivery: Physiological and Biochemical Aspects \* Prodrugs as
Delivery Systems \* Diffusion Controlled Systems \* Dissolution Controlled Systems \* Osmotic Controlled
Systems \* Biodegradable Polymeric Delivery Systems \* Gastric Retention Retentive Dosage Forms \*
Device Controlled Delivery of Powders \* Physical Targeting of Approaches for Drug Delivery \* Ligand
Based Drug Targeting Approaches for Drug Delivery \* Programmable Drug Delivery Systems \* Carrier and
Vector Mediated Delivery Systems for Biological Macromolecules

#### About the Author

**Xiaoling Li, Ph.D.,** is a Professor and Chair of the Department of Pharmaceutics and Medicinal Chemistry, Thomas J. Long School of Pharmacy & Health Sciences, University of the Pacific, Stockton, California. Professor Li received his Ph.D. degree from the University of Utah and had his post doctoral training at Ciba-Geigy (now Novartis). His research interests are focused on design and synthesis of novel polymers for pharmaceutical and biomedical applications, targeted drug delivery, and transport of drug across biological barriers. He holds two patents, published 38 papers, and had more than 70 presentations at national and international conferences. He serves as a consultant for various pharmaceutical and biotechnology companies.

Bhaskara R. Jasti, Ph.D. is an Associate Professor in the Department of Pharmaceutics and Medicinal

Chemistry, Thomas J. Long School of Pharmacy & Health Sciences, University of the Pacific, Stockton, California. Prior to joining the University of the Pacific, he worked as a Staff Scientist at Cygnus Therapeutics Systems, an Assistant Professor at Wayne State University in the Departments of Pharmacy and Internal Medicine, where he also acted as an Assistant Director of pharmacology core. His current research interests are identifying barriers for drug delivery and the design of targeted and mucosal drug delivery systems. Dr. Jasti has published more than 50 papers at various national and international meetings.

#### **Users Review**

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#### Sadie McBride:

The knowledge that you get from Design of Controlled Release Drug Delivery Systems (McGraw-Hill Chemical Engineering) may be the more deep you digging the information that hide in the words the more you get considering reading it. It does not mean that this book is hard to recognise but Design of Controlled Release Drug Delivery Systems (McGraw-Hill Chemical Engineering) giving you joy feeling of reading. The article writer conveys their point in particular way that can be understood by means of anyone who read it because the author of this guide is well-known enough. This book also makes your own vocabulary increase well. That makes it easy to understand then can go along with you, both in printed or e-book style are available. We advise you for having this Design of Controlled Release Drug Delivery Systems (McGraw-Hill Chemical Engineering) instantly.

#### **Leonel Burton:**

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#### **Tiffany Hernandez:**

Why? Because this Design of Controlled Release Drug Delivery Systems (McGraw-Hill Chemical Engineering) is an unordinary book that the inside of the reserve waiting for you to snap the idea but latter it will jolt you with the secret that inside. Reading this book next to it was fantastic author who also write the book in such wonderful way makes the content interior easier to understand, entertaining way but still convey the meaning completely. So , it is good for you for not hesitating having this ever again or you going to regret it. This amazing book will give you a lot of benefits than the other book have got such as help improving your proficiency and your critical thinking way. So , still want to postpone having that book? If I were you I will go to the book store hurriedly.

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