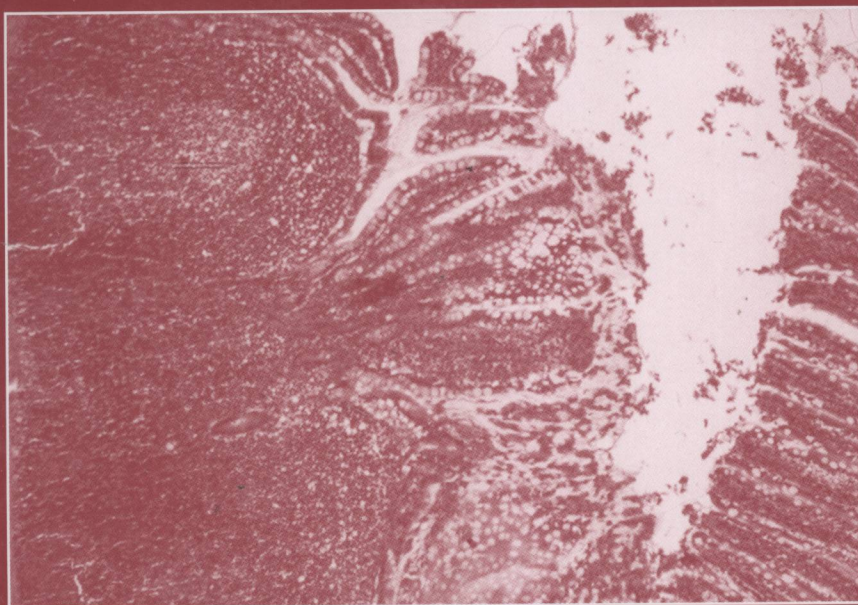


FIFTH EDITION

Modern Pharmaceutics

Volume 1

Basic Principles and Systems



edited by

Alexander T. Florence
Juergen Siepmann

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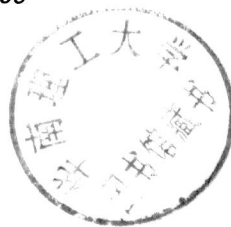
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A Series of Textbooks and Monographs

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Preface

Modern Pharmaceutics edited by Gilbert Banker and Christopher Rhodes has become a classic in the field. It is well known and has been well received on an international basis, necessitating the publication of this fifth edition. The present editors took on the difficult task of following in the footsteps of the founding editors and their associates with some trepidation. It has been several years since the last edition, and on realizing that Dr. Banker and Dr. Rhodes wanted to pass on the editorship, we accepted the mantle.

Given the passage of time and the growth and change in the field, the book has been divided into two volumes: *Basic Principles and Systems* and *Applications and Advances*. There have been so many exciting developments which impinge on pharmaceutics that it was time to reconsider the content of the book.

Basic Principles and Systems is principally a textbook and advanced reference source of pharmaceutics, which focus on the core of the subject that is key to pharmacy. We define pharmaceutics as encompassing the design, formulation, manufacture, assessment and determination of the quality of pharmaceutical products, and also the quality of effect in patients as the guiding principles. We have therefore continued only with chapters that fall within these criteria.

We have added chapters on in vivo imaging of dosage forms, surfactant systems, and the solid state. In each of these fields there have been significant advances. In vivo imaging is a powerful adjunct to biopharmaceutical studies, providing evidence of the spatial distribution of dose forms, which is vital in site-specific therapies. Surfactant systems, aspects of nanotechnology before this became a vogue, are now used with more sophistication than in the past and provide a wide variety of means of administration of drugs. Techniques for investigating the solid state have become more abundant and shed more light on crystal forms, key to the optimal design of delivery systems and choice of drug salt or form.

This volume opens with an essay on new challenges and paradigms in pharmaceutics and follows with updated chapters on drug absorption, pharmacokinetics, bioavailability, and route of administration, the starting points for the design of systems. Chemical kinetics and drug stability, excipient design and characterization as well as preformulation along with a chapter on optimization techniques further treat these fundamentals of pharmaceutics. Chapters on disperse systems, tablets, hard and soft capsules, and parenteral products complete *Basic Principles and Systems*.

Many of these chapters are written by their original authors. We are grateful for their enterprise, enthusiasm, and time and also thank those authors who wished to stand down. They have allowed the new authors to draw heavily on their original material,

which has eased the process and has allowed us to retain the essence of the earlier volumes.

We thank Sandra Beberman of Informa Healthcare USA for her patience with new editors and her encouragement, and all the staff at Informa Healthcare USA who have nursed these two volumes through to press. We also thank of course all who have devoted time in preparing material for this new edition of *Modern Pharmaceutics*.

We trust that *Basic Principles and Systems* and its companion *Applications and Advances* will satisfy the needs of a wide range of colleagues who have an interest or indeed passion for pharmaceutics. If there are lacunae, perhaps this will lead readers to research these areas.

Alexander T. Florence
Juergen Siepmann

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