Two short contributions conclude the book, first about the FDA regulations which researchers should be aware of. Finally, seven pages cover pharmacodynamic and pharmacokinetic considerations. Even though some aspects of controlled release would exceed the scope of the book, this fundamental subject ought to be presented on a central stage, not at the very end and on an insufficient level.

Scientifically all chapters are well founded. Being a multi-author effort, it is sometimes difficult to gather related information which is split up into several chapters without cross-references. Furthermore, you find repetition (the index is handy and helps). The editor's claim to present an overview on 'the next generation of controlled release' cannot free itself from introducing the current status as a basis, for example on pharmacokinetics and polymers. It also has to be mentioned that some of the chapters are similar to reviews published in other books, for example chapter 15 on protein delivery by microencapsulated cells is very much identical to a chapter in 'Microparticulate systems for the delivery of proteins and vaccines' edited by Cohen and Bernstein.

Overall, the book can serve as an introduction for individual industrial and academic scientists who are starting to work in the field. Covering numerous subjects, which have become extensive fields themselves, an interested or experienced reader is referred to more detailed books on microparticulate systems, drug targeting, colloidal drug carriers or protein and peptide delivery. You have to decide whether you want to update your department library with general reviews and introductions. Due to the price, US$ 145, it cannot be recommended as a reference book for students as the editor also intended.

Dr. Wolfgang Frieß
Department of Pharmaceutical Technology,
Friedrich-Alexander University of Erlangen-Nürnberg,
Cauerstrasse 4, 91058 Erlangen, Germany

PII: S0939-6411(98)00049-6

Mechanisms of Transdermal Drug Delivery (Drugs and the Pharmaceutical Sciences, Vol. 83)
Russel O. Potts, Richard H. Guy (Eds.), Marcel Dekker Inc. New York, 1997, ISBN 0-8247-9863-5

Turner and Nonato describe the visualization of the stratum corneum and of the transdermal permeation pathways by autoradiography, light and electron microscopy and the relatively new laser scanning contocal microscopy. Furthermore, they discuss the scanning electrochemical microscopy and the vibrating probe electrode technique as methods to follow the flux of electrochemically active substances (40 pp.). However, the reader should bear in mind that visualization of a drug in a distinct region of the skin is not identical to the identification of the respective permeation pathway. Binding of the drug to special components of the skin may obstruct a definite conclusion.

The chapter on (small angle) X-ray analysis of the stratum corneum and its lipids (44 pp.) is written by experts in this field: Bouwstra, Gooris and White. They comprehensively review the respective literature. Obviously, the stratum corneum of different species have different lamellar structures.

Naik and Guy give an excellent review on IR-spectroscopic and DSC investigations of the stratum corneum barrier function (75 pp.). ATR-FTIR provides a tool to look for non-uniform distribution of lipids as a function of stratum corneum depth and to study transport kinetics. Both methods offer insight into enhancer action and hydration phenomena.

The application of broad-line ^{2}H-NMR for the study of the membrane structures or phases and membrane dynamics is explored by Abraham, Kitson, Bloom and Thewalt (35 pp.). To obtain an unambiguous picture of the organization of the membranes it is necessary to combine the respective results with techniques giving insight into the long range order of the stratum corneum.

Pechthold, Abraham and Potts give a short introduction to the application of fluorescence spectroscopy and Burnette and DeNuzzo to the use of impedance spectroscopy. Small-angle neutron scattering (SANS) and neutron reflectometry mainly applied on monolayers are described by Watkinson, Hadgraft, Street and Richards (p. 34).

Peck and Higuchi review the concept of the porous/polar permeation pathway (23 pp.), discussing their own studies and results from the literature. Not attempting to localize this pathway they focus on its physico-chemical aspects. The iontophoretic transport, most useful for solutes of low molecular weight, and the respective models to describe its dependencies are discussed in the last chapter (58 pp.), written by Roberts, Lai, Cross and Yoshida.

All in all, this book is a perfect guide to different biophysical techniques used to study the nature of the stratum corneum, the permeability barrier of the skin. Special emphasis is put on penetration enhancer-treated stratum corneum. However, the discussed methods are complementary and only the composite of information can yield an adequate view of the stratum corneum as a barrier and the mechanisms of transdermal drug delivery. Although, the title of the book is promising, the reader has to draw his own conclusions after studying the book. To use the rich source of information the index is unfortunately rather small (about 400 entries).

Summary: highly recommended to all researchers interested in biophysical studies of the stratum corneum.

Prof. B.C. Lippold
Institut für Pharmazeutische Technologie,
40225 Düsseldorf, Germany

PII: S0939-6411(98)00050-2