

## Book Review

Dominique Duchêne (Editor), *New Trends in Cyclodextrins and Derivatives*, Editions de Santé, Paris, ISBN 2–86411–049–0–1991, pp. 635.

To quote F. Duisieux of the Université de Paris-Sud who wrote the preface, Professor Duchêne has convened most of the world's specialists on the production, characterisation and applications of cyclodextrins to make contributions to this fine publication. Glancing through the text it is immediately obvious that the editor has achieved an extremely reader-friendly format. Each chapter is introduced by a clearly presented contents listing and is concluded with a comprehensive, author-indexed reference section.

An historical review by H. Bender is followed by detailed chapters spelling out clearly the latest approaches to the commercial production of cyclodextrin, its applications and toxicology. This is followed by chapters on the commercial production of hydroxypropyl- $\beta$ -cyclodextrin, branched cyclodextrin and cyclodextrin-containing polymers.

A chapter on NMR points out the limitations of classic techniques and presents the modern techniques of polarization transfer, two dimensional NMR and double-quantum correlation experiments. This is followed by a chapter clearly demonstrating the application of these techniques to the identification of the inclusion process and to the determination of the kinetic behaviour and stoichiometry of inclusion. It shows how computer-aided, fast data processing techniques, allowing simultaneous observations of host and guest, together with two-dimensional techniques, will undoubtedly lead to a clear understanding of the inclusion process. Typical of this publication, these chapters are excellently presented.

A further chapter on instrumental techniques describes the application of  $^1\text{H}$  NMR, FABMS and GC/MS to the analysis of the substitution pattern of chemically modified CDs, a topic close to the heart of most CD research work.

There are two substantial chapters devoted to parenteral safety and applications of 2-hydroxypropyl- $\beta$ -cyclodextrin, one of which is devoted entirely to pharmaceutical applications.

Applications of CD derivatives to controlled drug release, including hydrophilic and hydrophobic derivatives, are given excellent treatment. The manner in which the unusual properties of CDs, namely the inclusion ability, chirality and solubiliza-

tion effect are exploited in electromigration techniques, is given worthy treatment.

The substantial contribution made by CDs and CD derivatives in liquid chromatography and gas chromatography is covered in some detail.

The final chapter, contributed by J. Szejtli, gives a clear picture of the usefulness of CDs in biotechnological processes mainly arising from their ability to protect the substrate, as well as microbiological cells, against toxic effects in aqueous systems and to ensure solubilization of the hydrophobic substrate.

I strongly recommend this text to researchers and industrial chemists using cyclodextrin technology.

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