

### *Physical Techniques for the Study of Food Biopolymers*

edited by S.B. Ross-Murphy, Blackie, 1994. £99.50 (x + 450 pages) ISBN 0 7514 0179 X

The three classical texts on the physical aspects of biological macromolecules – namely C. Tanford's *Physical Chemistry of Macromolecules*<sup>1</sup> (now out of print), C.R. Cantor and P.R. Schimmel's *Biophysical Chemistry*<sup>2</sup> and K.E. van Holde's *Physical Biochemistry*<sup>3</sup> are now becoming rather dated and there has been a demand for a detailed book covering specifically food macromolecules. It was therefore refreshing to see the appearance of this new volume.

This book covers in detail what the editor considers seven of the most important groups of techniques rel-

evant to the study of food biopolymers and refers to the others (perhaps not to the depth I would have wished) in his introductory chapter. So the following topics are considered in great depth: chiroptical methods, X-ray scattering and diffraction, light scattering, birefringent techniques, electron microscopy, rheological methods and surface force measurements. I found the chapter by W. Burchard on light scattering particularly comprehensive and useful. The only weakness of the book (apart from the price, which is likely to exclude many potential buyers) is that, as with any

edited book, it does not flow from chapter to chapter as well as a single-authored book might have done, but this is largely compensated for by an impressive list of contributors.

On the whole I regard this text as essential for the bookshelves of anybody working on food macromolecules, whether in industry or at a research institute or university.

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#### References

- 1 Tanford, C. (1961) *Physical Chemistry of Macromolecules*, Wiley
- 2 Cantor, C.R. and Schimmel, P.R. (1980) *Biophysical Chemistry*, Freeman
- 3 van Holde, K.E. (1985) *Physical Biochemistry* (2nd edn), Prentice Hall

### *Food Flavors, Ingredients and Composition*

edited by George Charalambous, Elsevier, 1993. Dfl. 575.00 (1087 pages) ISBN 0 444 89523 X

### *Recent Developments in Flavor and Fragrance Chemistry*

edited by Rudolf Hopp and Kenji Mori, VCH, 1993. £65.00 (vii + 304 pages) ISBN 3 527 28535 0

*Food Flavors, Ingredients and Composition* contains 85 individual papers, which were part of the presentations given during the 7th International Flavor Conference held in 1992, in Pythagorean, Sámos, Greece. These papers reflect an international potpourri of research programs and results on subjects of extreme diversity. Indeed, the title accurately describes the contents of this book, while the topics reflect the substantial allocation of resources that are currently being channeled into food flavor and ingredient research. In this book, flavor interaction, generation, performance and stability issues are presented in a series of papers, which are collectively difficult to interpret as to their intended readership. They are for the most part not fundamental in nature, but rather offer some of the more practical aspects of applied research. Several papers on

dairy flavor research are noteworthy. Papers on improved analytical methods for the detection of selected volatile and non-volatile components are few, but are well presented. Numerous results of research on ingredient interactions and performance are included, and again, applied research aspects for ingredient stability and performance predominate. The text appears to represent a wide range of commercially challenging issues, with some obvious attempts to market new approaches or products from a couple of the authors.

*Food Flavors, Ingredients and Composition* was not intended to represent recent developments in the various subject fields, but rather is a collective documentation of research, which presumably represents the activities of food scientists and applied flavor chemists worldwide. One criticism of this book is its length relative to its useful infor-

mation. However, *Food Flavors, Ingredients and Composition* is recommended as a general reference in the fields of food science and flavor development.

*Recent Developments in Flavor and Fragrance Chemistry* comprises the proceedings from the 3rd International Haarmann and Reimer Symposium held in 1992, in Kyoto, Japan. The 16 papers in this book are divided into 8 papers on 'Fragrance chemistry', 4 papers on 'Flavor chemistry' and 4 papers on 'Biochemistry'. The 'Fragrance chemistry' section covers such topics as: enantioselective synthesis of terpenoids, molecular model-guided synthesis of floral fragrance compounds, isolation and olfactory properties of new fragrance chemicals, 'Bio-organic' natural product synthesis, structure elucidation of components found in flowers and essential oils, and two reviews on highlights from Haarmann and Reimer's corporate research during the previous 120 years, including the evolution of perfumery compositions. The papers presented in the section entitled 'Flavor chemistry' emphasize the formation of flavor compounds via the Maillard reaction. Recent progress made by Haarmann and Reimer's research into meat flavors is discussed in some detail. Finally, the papers presented in the section entitled 'Biochemistry' represent the broadest range of subjects, including thujane monoterpene biosynthesis,