

# Book Review

## Chemistry and technology of flavors and fragrances

Edited by David Rowe

Blackwell Publishing, Oxford, UK, 2004

336 pp, ISBN 0-8493-2372-X

Unlike many books on flavors, which are mostly written for the academic community, *Chemistry and Technology of Flavors and Fragrances* is, as stated in the Preface, specifically written for newcomers to the industry. Thus, the contributors to this book are industry scientists actively involved in research in the flavor and fragrance industry, which gives the book a more application-driven character. The 13 chapters of the book are divided into three parts. Part 1 (Chapters 1–3) gives an overview of the history, analytical approaches, and generation of flavors in foods. Part 2 (Chapters 4–8) introduces the various chemical classes and some specific important flavor and fragrance chemicals that constitute the world of aroma compounds. In Part 3 (Chapters 9–13), the emphasis is on applications of flavors, which includes summaries of flavor perception, stability of aroma compounds, and forms of usage of aroma chemicals in the flavor and fragrance industry.

All chapters are concisely written and include up-to-date information. The approach of using ‘cases’ instead of comprehensive reviews is extremely useful as they are considerably more illustrative than the more common theoretical approach of scientific writing. The editor is upfront with addressing issues that could be raised by readers, such as omission of topics (for example, essential oils), the inclusion of which would have made the book much more voluminous and, thus, less likely to be read. In fact, when reading the book, it was obvious that readability was a major objective of this book. The wittiness of some comments in the introductory Chapter 1 and the high-quality photographs in Chapter 2, ‘Identification of aroma chemicals’, made reading these chapters pleasurable. As an exhaustive discussion of how flavor chemicals are generated in foods would far surpass the scope of the book, Chapter 3 covers the topic by using two examples: meat flavor and cheese flavor. Considering that these can be considered some of the most complex flavors, the chapter does the topic sufficient justice. Chapter 4 is an overview of aroma compounds containing carbon, hydrogen and oxygen with the exclusion of heterocyclics, which are covered in Chapter 5, while Chapter 6 is reserved specifically for the important class of sulfur-containing compounds. While it is obvious that complete coverage of these chemical classes in less than the 100 pages dedicated to them is impossible, it is amazing how much information the

contributors were able to deliver. This included structural and synthesis diagrams of important chemicals. Chapter 7 covers the important fragrance class of the musks, again in considerably more detail than what one might expect of a book with a mere 336 pages. Chapter 8 is dedicated not to a chemical class but to natural flavor compounds, and it is to the credit of the editor and the contributors that the chapter reads more like a continuation of Chapters 3–6 rather than a repetition of previously covered information, although I personally would have placed that chapter right after Chapter 3 on biogenesis of flavor chemicals. No introductory book for a newcomer would be complete without the chemicals responsible for taste sensations, but in addition, Chapter 9 also briefly covers the physiology of taste sensation, which makes the reader aware that the counterpart, i.e., a description of the olfactory system, is missing from the book. The important issues relating to stability of aroma chemicals are adequately covered in Chapter 10 and include a couple of important examples of degradation reactions, as well as approaches to stabilize flavors. Again, the case study approach is highly beneficial to a good understanding of degradation reactions. Chapter 11 is probably the most unique chapter as it addresses the mechanisms of finding, identifying, and synthesizing aroma chemicals by following a logical approach based on what we know of what constitutes an aroma chemical and the make-up of our olfactory system—very interesting to read! Chapter 12 is focused on the numerous delivery systems of aroma chemicals, while Chapter 13 gives an overview of the numerous applications of fragrances in modern consumer products, including unique applications, such as depilatories. The index is probably the weakest part of this otherwise superb book. However, a brief search seemed to reveal that some chapters are very well indexed, while others are lacking.

The editor certainly achieved what he set out to do, which was to create ‘a work that could be given to a new chemist or technologist joining the industry with the statement “read this and you’ll know what the industry is about”’. I only disagree slightly (smilingly) with the statement in the very first paragraph of Chapter 1, ‘Yet, it is a . . . global industry that impacts on everyone’s life in the developed world’, because over 20 years ago, seeing that our water container at a safari in Tanzania was a used barrel of my hometown’s Haarmann & Reimer (now Symrise) was solid evidence for me that this industry impacts not just the developed world. Overall, the book fills a niche and is truly a ‘must read’, and not only for newcomers to the industry: it should also be required reading for any student interested in flavor and fragrance research. I wish it had been around 10 years ago.

Ingolf Gruen

[DOI: 10.1002/jsfa.2345]

Chemistry and Technology of Flavors and Fragrances. Edited by David J. Rowe De Monchy Aromatics Ltd Poole, UK. © 2005 by Blackwell Publishing Ltd Editorial Offices: Blackwell Publishing Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK Tel: +44 (0)1865 776868 Blackwell Publishing Asia Pty Ltd, 550 Swanston Street, Carlton, Victoria 3053, Australia Tel: +61 (0)3 8359 1011 ISBN 1 4051 1450 9 Published in the USA and Canada (only) by CRC Press LLC, 2000 Corporate Blvd., N.W., Boca Raton, FL 33431, USA Orders from the USA and Canada (only) to CRC Press LLC USA and Canada only: ISBN 0 8493 2372 X The r -Chemistry and Technology of Flavour and Fragrance, Hardcover by Rowe, David, £139.67. Free postage. About this product. Product Information. Modern flavours and fragrances are complex formulated products, containing blends of aroma compounds with auxiliary materials, enabling desirable flavours or fragrances to be added to a huge range of products. This book offers an overview of the synthesis, chemistry and application technology of the major classes aroma compounds. Product Identifiers. Publisher. John Wiley & Sons AND Sons LTD. ISBN-10. 1405114509. ISBN-13. 9781405114509. eBay Prod... Edited by Dr. David Rowedavid Rowe Is Technical Manager at De Monchy Aromatics Ltd., Poole UK. Country of Publication. United Kingdom.