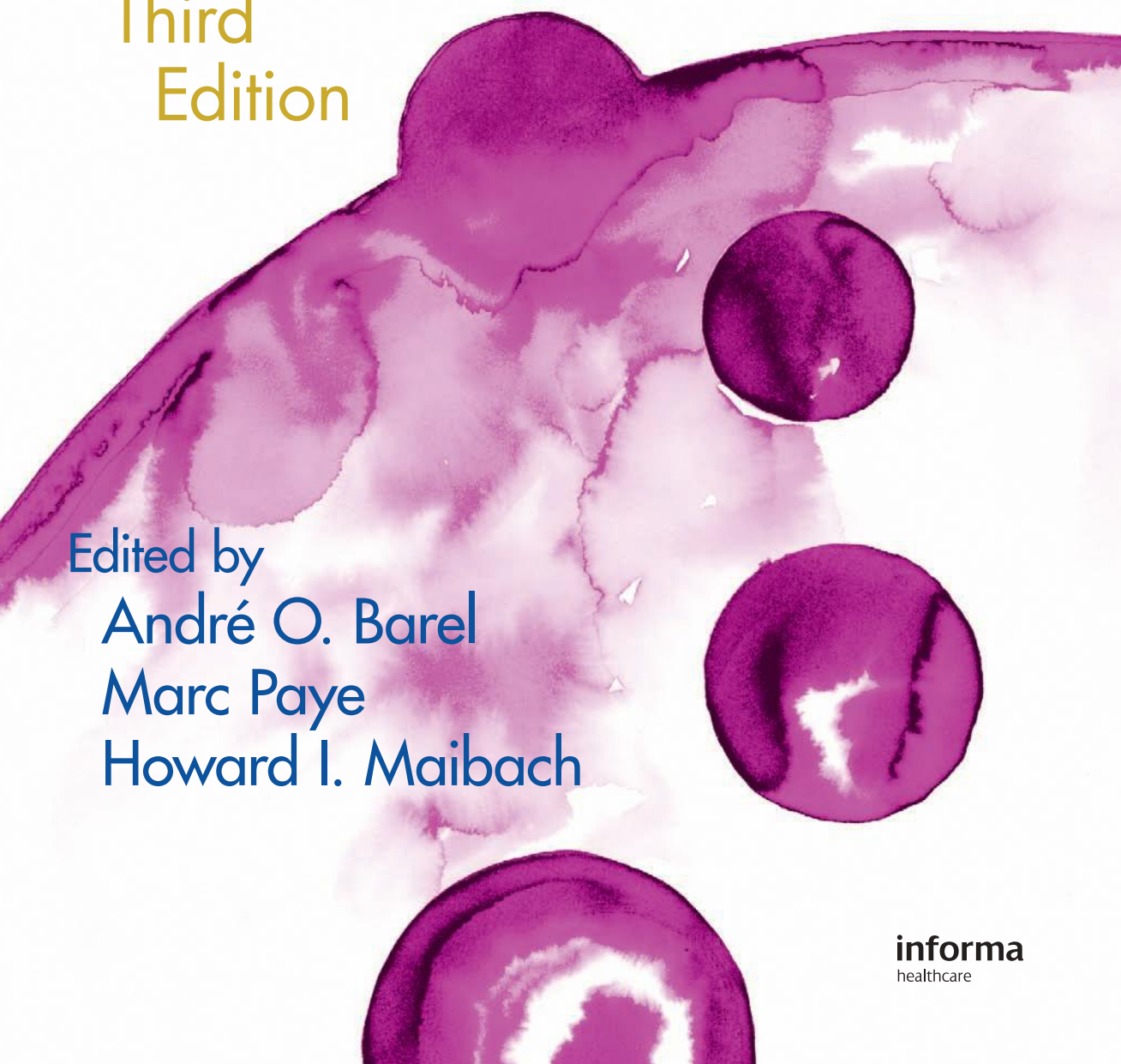


Handbook of Cosmetic Science and Technology

Third
Edition

Edited by
André O. Barel
Marc Paye
Howard I. Maibach

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Preface

Thanks to the contribution of leading experts in cosmetology, the first editions of the *Handbook* were successful and received excellent reviews. The editors appreciate the excellent author contributions.

The first edition, published in 2001, reviewed the multiple facets of the cosmetic field including the physiology of cosmetics targets and the safety, legal and regulatory context worldwide. It gave a broad overview of cosmetic ingredients, vehicles and finished products, and described the main methodologies used for microbiology, safety and efficacy testing. In the second edition (2006), we examined the future of cosmetology by the addition of chapters related to new ingredients, new delivery systems and new testing methodologies, but also by asking the previous authors to update their chapter with their speculation about the future in their field of expertise. To make the information more accessible, chapters were significantly reorganized.

Cosmetic science is a fast moving area. Furthermore, rapid and extensive changes in the worldwide regulatory context of cosmetics, increasing constraints and limitations in the choice of cosmetic ingredients and regular pressure from the media force the cosmetic formulator to think differently about his products. For all those reasons and due to more and more demanding and educated consumers asking for additional benefits from their cosmetic products, we have been asked to initiate the third edition of the *Handbook*.

Several chapters, from previous authors, are key in *Handbook of Cosmetic Science and Technology* and have been updated with the latest developments in the given field. However, it is the intention of the editors to give this version a new and important dimension that will complement the previous editions; a focus on the mechanism of interaction of the products or ingredients with their target.

Today, cosmetic products are of a high quality. If we want to further improve their quality, this will inevitably pass through an even better understanding of how those products or ingredients work to improve the appearance, protect their target or help maintain its natural functions. So, with the outstanding evolution of instruments to investigate in depth the skin or the hair, great progress is made daily in the understanding of the mechanisms of action of cosmetics. This understanding has been extensively covered in the third edition, which concentrates on skin, nail and hair cosmetics.

In the third edition, emphasis has been given to:

- Skin types, their relationship with age, sex, ethnic differences and the concept of sensitive skin.
- New bioengineering techniques for studying hydration of the skin – such as skin capacitance imaging and confocal raman spectroscopy – and for investigating skin friction and wettability.
- New developments in the description of skin aging and anti-aging treatments.
- In vitro skin tests using 3D reconstructed skin models.
- Specifically targeted cosmetics (decorative products, cooling and revulsive ingredients) and new forms such as oral cosmetics.
- An overview of the regulatory context for cosmetic preparations in the USA and in Europe, and of important ethical considerations in human testing.
- Finally, and controversially, the values and limitations of bioengineering measurements for the substantiation of efficacy claims.

The editors are grateful not only to the authors who contributed to previous editions and updated their chapters for the third edition, but also to the new authors who openly shared their “know how” in key areas.

Finally, we would like to invite readers’ comments, criticisms and suggestions for improvements in order to ensure the continuous improvement of the *Handbook of Cosmetic Science and Technology*.

André O. Barel
Marc Paye
Howard I. Maibach

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