



BMSystems, Paris

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## The first reference book on Computational Biophysics of the Skin is now available

BMSystems is proud to announce that the first reference book on Computational Biophysics of the Skin is now available for pre-order\* . The table of contents is at the end to this message.

BMSystems' team and Prof. Bernard Querleux (l'Oréal Research & Innovation, ISBS\*\*) wrote the chapter "*Heuristic Modeling Applied to Epidermal Homeostasis of the Skin*", based on CADI™ modeling and joint research program outputs.

With this scientific contribution, BMSystems confirms its scientific & business leadership in systems biology applied to skin physiology, a strategic domain in terms of business and R&D investments, as demonstrated by our R&D alliance with Persistent Systems (India) to propose the first integrated alternative to animal testing for contact allergy, addressing complex formulas (natural plant extracts) and low-level allergens issues.

*What key Scientists already said about the book?*

- *"This book presents an excellent overview of the state of the art in computational modeling of the skin. All chapters are written by internationally well-known researchers in the field, each of them supplying a comprehensive reference list for each chapter. It is an excellent read for anyone starting in the field and also a very good source of information for experts."* Prof. Cees W. J. Oomens Eindhoven University of Technology, the Netherlands.
- *"This book offers a fantastic approach to non-invasive research of the skin. It will be a valuable reference for not only students but also experts in skin research."* Prof. Chil Hwan Oh Korea University, South Korea.
- *"This volume will serve as the standard textbook for undergraduates, masters, and PhD students wishing to utilize the computer and programs to understand the complexity of human cutaneous biology".* Howard I. Maibach, M.D. The University of California School of Medicine Department of Dermatology

*We hope it will be of some interest to you. It is an excellent roadmap for anyone starting in the field and also a very useful reference source for experts. We warmly invite you to share this information with your network.*

*Do not hesitate to contact us for feedback and comments to improve our ongoing work.*

*Do not hesitate to visit [our website](#) to discover our latest news in other therapeutic areas and [download our company's presentation](#)*

BMSystems contributed to the reference book "[Biomarkers for psychiatric Disorders](#)" edited by Prof. Chris. Turk (Max Planck in Munich).

Best regards

Manuel GEA  
Co-founder & CEO Bio-Modeling Systems

About the Editor:

Prof. Bernard Querleux is senior research associate at the Worldwide Advanced Research center of

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L'Oreal Research & Innovation, France. He obtained his doctorate in electronic engineering and signal processing from the University of Grenoble, France, in 1987 and his habilitation in biophysics from Paris-Sud University, France, in 1995. Since 2005, Prof. Querleux is serving as scientific chairperson of the International Society for Biophysics and Imaging of the Skin. Apart from being an expert in functional brain imaging for the objective assessment of sensory perception, his main research interests concern the development of new non-invasive methods, including numerical modeling for skin and hair characterization.

About Bio-Modeling Systems:

BIO-MODELING SYSTEMS, a disruptive innovative company founded in 2004, is the first and, to date, the only company to successfully create in-silico heuristic models validated in-vivo. BMSystems' heuristic models, built by its biologists using an integrated IT solution called CADI™ (Computer Assisted Deductive Integration), have led to discoveries, patents, and operational businesses in the fields of infectious diseases, immunology, neurology, psychiatry, oncology, dermatology cosmetics and innovative bioprocesses for industrial biotech. BMSystems' models describe the biological phenomena involved in pathological states and provide new mechanisms to explain the cause of certain diseases, identify and select predictive biomarkers, offer new combinations of molecules and new therapeutic strategies contributing to the development of Mechanism-Based Medicine. For more information, please visit <http://www.bmsystems.net>.

CADI Applications: • Multiple-Systems Multiple-Scale Mechanisms understanding • Discovery of Causal disease mechanisms • New therapeutic strategies • New associations / combinations of existing molecules • Identification of pertinent Biomarkers • R&D project evaluation: Next phase GO / NOGO decisions. • Drug re-positioning / re-profiling / rescue • New industrial biotech processes discovery

Latest news • New approach to the analysis and understanding of autoimmunity. • R&D aging programs: skin, neurology, & a novel Parkinson therapy ready for human validation • BMSystems contributes to the "Computational Biophysics of the Skin" book • R&D Project with Persistent Systems (India) to reduce the Use of Animals in Contact Allergy Testing for cosmetics • BMSystems proposes a new oncology therapeutic paradigm to address the cancer resistance issues • BMSystems becomes a global player in the digital health business with Persistent Systems. • BMSystems & Aepodia collaborates in Fibromyalgia & Facial pain.

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\* This book is available from both [CRC Press](#) and [Amazon](#)

## Computational Biophysics of the Skin: To pre-order the book [CRC Press](#) or [Amazon](#)

### Features

- Covers, for the first time, state-of-the-art research in numerical modeling of some skin properties and functions
- Gathers numerical models from the molecular scale to the tissular scale, as well as some multiscale models and even prospective works based on the systems biology approach
- Presents numerical models related to availability of data as far as possible
- Contains an extensive bibliography associated with each chapter

### Summary

- Taking advantage of the accessibility of the skin *in vivo*, non-invasive methods were developed about 40 years ago, which have now developed as accurate sources to measure skin properties and structures at the microscopic and macroscopic levels. However, even at the dawn of the twenty-first century, the mechanisms involved in these properties are still only partly understood. As in many domains, including biomedical engineering, numerical modeling has appeared as a complementary key actor for improving our knowledge on skin physiology.
- This book gathers, for the first time, chapters describing scientific computing and numerical modeling for a deeper understanding of mechanisms involved in skin physiology. The book is

structured around some skin properties and functions, including optical and biomechanical properties, skin barrier function, and homeostasis, covered through several chapters describing either biological or physical models at different scales.

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Bernard Querleux is currently a senior research associate in the Worldwide Advanced Research center of L'Oreal Research & Innovation. His main research interests concern the development of new non-invasive methods including numerical modeling for skin and hair characterization. He is also an expert in functional brain imaging for the objective assessment of sensory perception. Since 2005, he has also served as scientific chairman of the International Society for Biophysics and Imaging of the Skin.