HANDBOOK OF FOOD BIOENGINEERING
VOLUME 13

FOOD QUALITY: BALANCING HEALTH AND DISEASE

Edited by
Alina Maria Holban
Alexandru Mihai Grumezescu

Food Quality: Balancing Health and Disease

Handbook of Food Bioengineering, Volume 13

Edited by

Alina Maria Holban
Alexandru Mihai Grumezescu

ACADEMIC PRESS
An imprint of Elsevier

Academic Press is an imprint of Elsevier
125 London Wall, London EC2Y 5AS, United Kingdom
525 B Street, Suite 1800, San Diego, CA 92101-4495, United States
50 Hampshire Street, 5th Floor, Cambridge, MA 02139, United States
The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom

Notices

Knowledge and best practice in this field are constantly changing. As new research and experience broaden our understanding, changes in research methods, professional practices, or medical treatment may become necessary.

Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds, or experiments described herein. In using such information or methods they should be mindful of their own safety and the safety of others, including parties for whom they have a professional responsibility.

To the fullest extent of the law, neither the Publisher nor the authors, contributors, or editors, assume any liability for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions, or ideas contained in the material herein.

Library of Congress Cataloging-in-Publication Data
A catalog record for this book is available from the Library of Congress

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-0-12-811442-1

Publisher: Andre Wolff
Acquisition Editor: Nina Bandeira
Editorial Project Manager: Jaclyn Truesdell
Production Project Manager: Paul Prasad Chandramohan
Designer: Matthew Limbert

Typeset by Thomson Digital

Contents

HANDBOOK OF FOOD BIOENGINEERING
VOLUME 13

FOOD QUALITY: BALANCING HEALTH AND DISEASE

Edited by
Alina Maria Holban and **Alexandru Mihai Grumezescu**

Food Quality: Balancing Health and Disease, a volume in the *Handbook of Food Bioengineering* series, provides essential information for researchers, scientists, and students about the relationship between the quality of foods and disease at the biological level. It presents different technological approaches to detect food properties and their capabilities to balance health and disease to deliver high quality food products to consumers. This book explores the dynamic potential of how food bioengineering can improve traditional foods through modern methods to make a positive impact on human's health and fostering innovation.

Key Features

- Provides information on how bioavailability of nutrients and food formulation can be used to prevent or treat disease
- Includes the most recent research methods of food engineering, metabolomics and genomics to detect best outcomes
- Includes innovative applications for anti-aging effects and curative properties in foods
- Presents research examples on how both human gut microbiota and food components control the way our organisms develop and react in different environmental conditions

About the Editors

Dr. Alina Maria Holban holds a Phd in Biology and is Lecturer in Microbiology. She is conducting research in applied microbiology, molecular biology and nano-delivery at the Department of Microbiology and Immunology, Faculty of Biology, University of Bucharest. Her contribution on these research fields is supported by 71 international papers, 14 book chapters, 2 monographs and 20 edited books. She also serves as Editor and Reviewer for several notable journals in the fields of nanobiomedicine and alternative antimicrobial strategies. Her current research focus is on the design of efficient antimicrobial and virulence-modulating nanoshuttles with implications in medicine, pharmacology and food and beverage industry. Other details are available at https://alina.amgtranscend.org/.

Dr. Alexandru Mihai Grumezescu is Lecturer at the Department of Science and Engineering of Oxide Materials and Nanomaterials, in the Faculty of Applied Chemistry and Materials Science at the Politehnica University of Bucharest in Romania. He is an experienced and oft-published researcher and editor in the field of nano and biostructures, and he is the Editor-in-Chief of four journals: *Biointerface Research in Applied Chemistry*, *Letters and Applied NanoBioScience*, *Biomaterials and Tissue Engineering Bulletin* and *Journal of Food Bioengineering and Nanoprocessing*. He also serves as editor or guest editor for several notable journals. Dr. Grumezescu has published 170 peer-reviewed papers, 20 book chapters, 9 co-authored books and 30 edited books. Other details are available at http://grumezescu.com/.

Food Engineering

ISBN 978-0-12-811442-1

ACADEMIC PRESS
An imprint of Elsevier
elsevier.com/books-and-journals