

**Food Science**

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Fundamental questions  
Elemental answers

# New books

## from the Royal Society of Chemistry

With contributions from international authors and editors that cover all of chemistry and related fields, our books programme is relevant globally and provides support to scientists, researchers, students and teachers. We are excited about what we have to share with you this year.

### Books to drive progress

In 2020, you can look forward to more titles that cover emerging areas like biomaterials science and inorganic materials, and more additions to our new *Food Chemistry, Function and Analysis* series. The core disciplines are represented by works focusing on significant developments in analytical science, green chemistry, catalysis and detection science.

Continuing our collaboration with IUPAC, we will also be publishing the fourth edition of the *Compendium of Terminology in Analytical Science*, an abridged version of *Quantities, Units and Symbols in Physical Chemistry*, and the *Glossary of Terms Used in Molecular Toxicology*.

### Books to enlighten

We are here to help everyone in the chemical sciences to do their best work and drive scientific progress. 2020 textbook topics include *Microfluidics and Lab-on-a-Chip*, *Controlled Drug Analysis* and *Conservation Science*.

In *Good Chemistry*, we provide a textbook that goes beyond experimental procedure, to help practising scientists develop the skills to recognise the ethical and social dimensions of their own work and act appropriately.

### Books to inspire

Chemistry is at the centre of everything you can see, smell, touch and taste, so we will be adding to the books that show the chemistry in our lives. *Sticking Together*, *Discovering Cosmetic Science* and *Perfume in the Bible* are just a few examples of books to broaden your chemistry horizons that you can look forward to in 2020.

If you have any queries, contact [books@rsc.org](mailto:books@rsc.org)  to talk to the team.

For a list of books published prior to 2020, visit [rsc.li/backlist](https://www.rsc.li/backlist)

Happy reading



**Serin Dabb** Head of books

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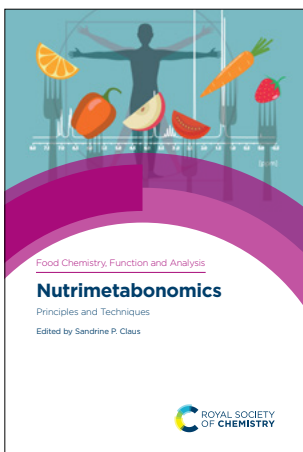
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## About the series

ISSN: 2398-0656

Series editors

**Gary Williamson** Monash University, Australia  
| **Alejandro G Marangoni** University of Guelph, Canada

Food Chemistry, Function and Analysis provides a suite of reference books focusing on food chemistry, the functions of food in relation to health and the analytical methods and approaches used by scientists in the area. Providing comprehensive coverage of important topics such as the biochemistry of food, physical properties and structure, efficacy and mechanisms of bioactives in the body including biomarkers, nutrient physiology/metabolism and interactions and the role of nutrition and diet in disease. The series is aimed at academic and industrial researchers and graduate students in food science and chemistry as well as for physicists, biochemists, nutritionists and others who work at the interface of the chemistry, physics and biology of food.

## Chemistry and Nutritional Effects of Capsicum

**Valdir Florêncio da Veiga, Jr** Military Institute of Engineering, Brazil | **Larissa Silveira Moreira Wiedemann** Universidade Federal do Amazonas, Brazil | **Claudio Pereira de Araújo, Jr** Military Institute of Engineering, Brazil | **Ananda da Silva Antônio** Federal University of Amazonas, Brazil

This book identifies and provides, in one comprehensive source, the diversity of beneficial properties provided by capsicum peppers and their application in the food industry as food, as additives, as colorants and also as a non-lethal weapon. The substances that gives peppers their pungency is a set of related compounds collectively called capsaicinoids. Each of these compounds has a different effect on the mouth and its different proportions are responsible for the different sensations produced by the different varieties. The Capsicum pepper is often classified as a functional food based on its antioxidant, anti-inflammatory, antimutagenic and chemopreventive substances, such as carotenes and capsaicinoids. The diversity of beneficial properties of peppers and their wide application indicate the importance of this plant and its chemistry and nutritional effects.

**Hardback | 300 pages | 9781788017503 | 2021 | £149.00 | \$205.00**



## Health Claims and Food Labelling

**Sian Astley** EUROFIN, UK

Increasing numbers of foods carry nutrition and/or health claims on their packaging. These need to be regulated in order to protect consumers from false claims, and to promote foods with proven health benefits. This title explores the use of nutrition and health claims around the world, the impact of legislation on consumers especially understanding of the terminology used, and likely developments in the future. It is a valuable reference for those in the food industry, as well as in the regulatory environment.

**Hardback | 224 pages | 9781788010733 | 2020 | £149.00 | \$205.00**



## Metabolism of Nutrients by Gut Microbiota

**Joseph F Pierre** University of Tennessee Health Science Center, USA

This book highlights emerging functional and mechanistic research findings that illustrate the inner workings of the dietary-microbial-host relationship to metabolic regulation. Discussing how diet regulates microbial function with metabolic implications for human health, the chapters are designed to cover the broad concepts of microbial-host interactions under the dietary influences of specific macronutrients, micronutrient, small molecule generation, bile acid circulation, with inclusion of later clinical chapters encompassing topics like bariatric surgery and current understanding of probiotics, prebiotics, and synbiotics. In a nutshell - different micronutrients affect the gut and are absorbed in different ways – a better understanding of this relationship is one of the most exciting parts of functional food research.

**Hardback | 320 pages | 9781788017480 | 2020 | £149.00 | \$205.00**



## Nutraceuticals and Human Health

The Food-to-supplement Paradigm

**Paul A Spagnuolo** University of Guelph, Canada

Nutraceuticals is a broad umbrella term used to describe any product derived from food sources with extra health benefits in addition to the basic nutritional value found in foods. This book is a comprehensive look at two themes in the area: technical considerations and biological considerations. It is the first book to examine comprehensively the entire process of nutraceutical development from food to supplement creation and all the important considerations in between. This serves as an excellent and up-to-date reference for food scientists, food chemists, researchers in human nutrition.

**Hardback | 256 pages | 9781788014168 | 2020 | £149.00 | \$205.00**



## Nutritional Signalling Pathway Activities in Obesity and Diabetes

**Zhiyong Cheng** The University of Florida, USA

Nutrients act as signalling molecules initiating and mediating signalling transduction that regulates cell function and homeostasis. As such, nutrient status has been linked to altered profiles of transcripts and protein expression, which affect mitochondrial function, autophagy, inflammation, and metabolism. This book disseminates the cutting-edge knowledge pertaining to nutritional signalling activities in obesity and diabetes, including the regulatory mechanisms and perspectives of nutritional interventions for disease prevention. It brings the reader in-depth understanding of the nutritional aspects, cellular and molecular biology, as well as pathophysiology of obesity and diabetes. In addition, each chapter of the book includes a component of future direction or intervention perspective based on the pathways discussed in the chapter, making the new knowledge transformative and translational. Aimed at researchers and professionals in nutrition, diet, diabetes, and obesity, this book should also appeal to health science researchers.

**Hardback | 320 pages | 9781788015578 | 2021 | £159.00 | \$220.00**



## Oral Processing and Consumer Perception

Biophysics, Food Microstructures and Health

**Bettina Wolf** University of Nottingham, UK | **Serafim Bakalis** The University of Birmingham, UK

This book provides a comprehensive overview of food oral processing. It will be of interest to postgraduate students and researchers in academia and industry who may be from a very diverse background ranging from food process engineers to functional food developers and professionals concerned with swallowing and taste disorders. Hence, the book will include some fundamental chapters at the beginning of each sections to aid the understanding of the later more specific oral processing chapters.

**Hardback | 450 pages | 9781788017152 | 2021 | £179.00 | \$250.00**



## The Chemistry and Bioactive Components of Turmeric

**Sreeraj Gopi** Aurea Biolabs Private Limited, India | **Sabu Thomas** Mahatma Gandhi University, India | **Ajaikumar B Kunnumakkara** Indian Institute of Technology Guwahati, India | **Bharat B Aggarwal** Anti-inflammation Research Institute, USA | **Augustine Amalraj** Aurea Biolabs Private Limited, India

Turmeric is cultivated in tropical and sub-tropical regions around the world and used extensively as a colouring and flavouring agent. It is also one of the most popular medicinal herbs, with a wide range of pharmacological activities attributed mainly to curcuminoids and two related compounds, demethoxycurcumin and bisdemethoxycurcumin. This book brings together the research carried out in the area of the constituents obtained from turmeric such as curcuminoid, volatile oil, proteins and carbohydrates and their medicinal, nutraceutical and cosmetic applications. It starts from the isolation of components from turmeric and summarizes the chemistry of isolated compounds, the synthetic methodology to prepare them, various formulations of important components of turmeric to enhance the bioavailability and their biological activity. It is a comprehensive treatment of this important spice appealing to researchers and professionals in natural products and nutraceuticals and food chemists.

**Hardback | 450 pages | 9781788015554 | 2020 | £179.00 | \$250.00**



## The Maillard Reaction



2nd Edition

**Justine Cottam** University of Canterbury, New Zealand | **Sian E Fayle** | **Juliet A Gerrard**  
University of Auckland, New Zealand

It is a little over 100 years since the Maillard reaction was first described. Despite decades of research since then, the products of the reaction and the mechanistic pathways leading to their formation are being gradually unravelled. It combines comprehensive information regarding the various methods that are employed in the analysis of Maillard products with a discussion of the advantages and limitations of those methods. This fully updated, revised and expanded version of the original volume includes a greater focus on the impact of the Maillard reaction on food, including flavour, texture, nutritional quality and aspects of food safety. It will be useful for both new and experienced researchers who are involved in solving the mysteries and complexities of Maillard chemistry.

**Hardback | 200 pages | 9781782629108 | 2021 | £123.00 | \$170.00**

ISBN 978-1-78262-910-8



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## Saltmarsh's Essential Guide to Food Additives

5th Edition

**Mike Saltmarsh** Inglehurst Foods Limited, UK

Food additives have played and still play an essential role in the food industry. Additives span a great range from simple materials like sodium bicarbonate, essential in the kitchen for making cakes, to mono- and diglycerides of fatty acids, essential emulsifiers in low fat spreads and in bread. It has been popular to criticise food additives, and in so doing, to lump them all together, but this approach ignores their diversity of history, source and use. While the pace of change in legislation and application of food additives has slowed, there have been a number of changes since the fourth edition was published in 2013.

The book will include food additives and why they are used, safety of food additives in Europe, additive legislation within the EU and outside Europe and the complete listing of all additives permitted in the EU. Bringing the literature up to date, it will include a new chapter on clean labelling and comment on the impact of the departure of the UK from the EU. Providing an invaluable resource for food and drink manufacturers, this book is the only work covering in detail every additive, its sources and uses.

**Hardback | 320 pages | 9781839161032 | 2021 | £75.00 | \$105.00**



ISBN 978-1-83916-103-2





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