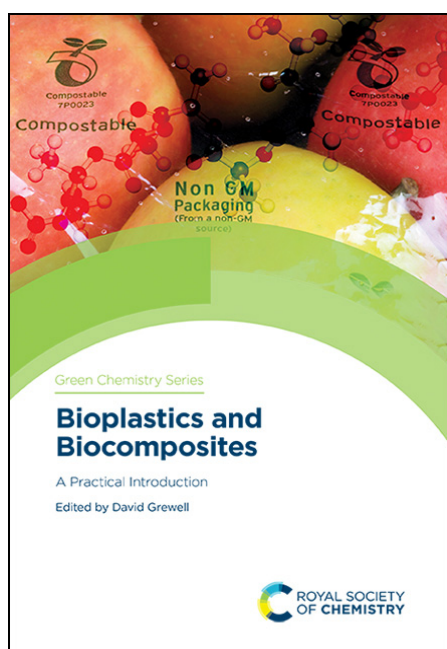


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**BIC:** PNNP, RNU, TDCP

**THEMA:** PNNP, RNU, TDCP

**BISAC:** SCI013060, TEC010000

## Bioplastics and Biocomposites A Practical Introduction

David Grewell Northern Illinois University, USA

### Synopsis

**Bioplastics and Biocomposites** provides readers with a fundamental understanding of plastics and polymer processing by examining bioplastics and biocomposites. Concepts covered include bioplastic processing, formulations, biocomposites, properties of biobased materials, economic evaluations of biobased materials, end of life treatment as well as the environmental impact of biobased materials. Researchers new to this field will find this book a useful aid for grasping a solid understanding in the materials science, processing and social and economic impacts of bioplastics.

### Brief Contents

- Plastics and Bioplastics Overview
- Polymerization and Synthesis from Bio-based Feedstocks
- Overview of Bioplastics
- Polymer Processing Principles
- Biocomposites
- Fermentation of Polyesters (PHA and PLA)
- Bio-based Polyesters
- Protein-based Plastics
- Starch-based Biopolymer Films
- Bio-based Polymers and Resins in Paints and Coatings
- End-of-life of Plastics/Bioplastics

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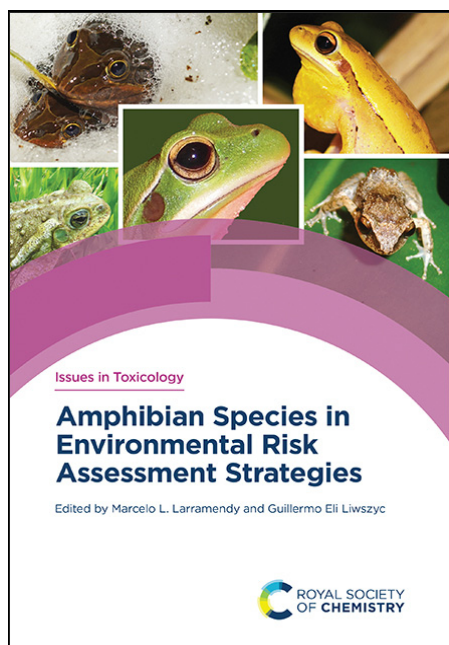
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**Series:** Issues in Toxicology

**ISSN:** 1757-7179

**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-83767-152-6

**Price:** £159.00 | \$220.00

**Publishing date:** 18/12/2023

**Target Audience:** Professional and scholarly

**Format:** Hardback

**Size:** 234 x 156 (Royal 8vo) mm

**Pages:** 270

**BIC:** PSAF, PSAK, PSB, PSVW3

**THEMA:** PSAF, PSAK, PSB, PSVF

**BISAC:** SCI013090, SCI020000, SCI029000, SCI070010

## Amphibian Species in Environmental Risk Assessment Strategies

**Marcelo L Larramendy** National University of La Plata, Argentina

**Guillermo Eli Liwszyc** University of Helsinki, Finland

### Synopsis

This book focuses specifically on environmental risk assessment in premetamorphic stages and adults of amphibians. Amphibian ecotoxicology is not totally understood in scientific research and as such environmental risk assessment in these vertebrates is an area of rapidly growing interest. An ideal companion, the book is attractive to toxicologists and ecologists investigating risk assessment in the environments of amphibians whilst also of interest to those working in conservation biology, biological invasion, biocontrol and habitat management.

### Brief Contents

- General Aspects – Current and Further Perspectives
- Considerations of Amphibian Models and Testing Paradigms for Ecological Risk Assessment
- Risk Assessment Studies in Amphibians
- Evaluation of Genotoxicity and Mutagenicity in Amphibian Species That Inhabit Agroecosystem Environments
- Ecotoxicity and Risk Assessment Characterization of Veterinary Pharmaceuticals on Anuran Amphibian Larvae
- Adult African Toads as Bioindicators of Environmental Xenobiotics-induced DNA Damage
- Development of Massive Molecular Biomarker Analysis ('Biomarkomics') in Non-model Species
- Genotoxic Risk of Solar Ultraviolet Radiation in Amphibians
- Mortality Induced by Mixtures of Pesticides in Tadpoles from the Pampasic Region of Argentina
- The Direct-developing Frog *Eleutherodactylus johnstonei*
- Morphological Responses as a New Tool to Evaluate the Effects of Agrochemicals and Other Emerging Contaminants in Neotropical Frogs
- Genotoxic, Biochemical and Physiological Biomarkers Triggered by Agrochemicals in Neotropical Anuran Species
- Epilogue and Final Remarks

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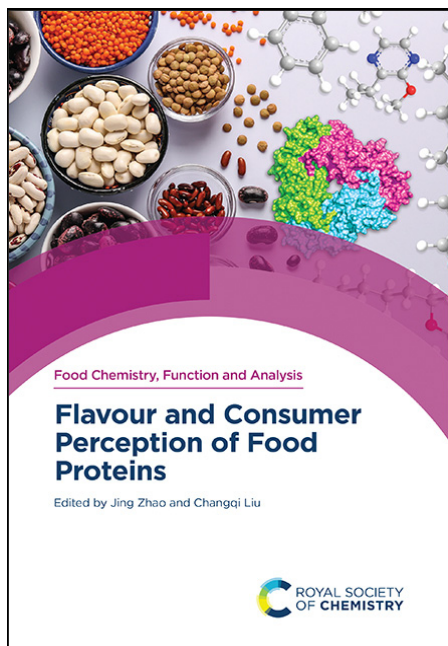
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**Series:** Food Chemistry, Function and Analysis  
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**Publisher:** Royal Society of Chemistry

**ISBN:** 978-1-78801-758-9

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**Format:** Hardback

**Size:** 234 x 156 (Royal 8vo) mm

**Pages:** 196

**BIC:** MBNH3, PNF, PSBC

**THEMA:** MBNH3, PNF, PSB

**BISAC:** MED060000, SCIO07000, SCIO13010

## Flavour and Consumer Perception of Food Proteins

Jing Zhao California State University, Los Angeles, USA  
Changqi Liu San Diego State University, USA

### Synopsis

Proteins are an important nutrient and ingredient in food as well as in nutritional supplements. The application and take up of food proteins, especially plant proteins, has been limited due to their undesirable sensory properties such as taste, odour and chalky mouth feel. This will need to change if the availability of meat protein becomes scarcer. Documenting the latest research, this book is the first overview of the recent advances in flavour research of food proteins, with an emphasis on the major plant proteins, for example, soy and pulse proteins. Summarising research advances in consumer studies and flavour chemistry that focus on food proteins, the book discusses the flavour properties and problems in each major and novel food protein source for the academic and industry market.

### Brief Contents

- Overview of Protein Flavours
- Consumer Perceptions of Food Proteins and Protein-enriched Foods
- Chemical and Instrumental Characterization of Protein-flavor Interactions
- Flavor: Protein Binding on Flavor Delivery
- Flavour of Dairy Proteins
- Flavor of Fish and Fish Proteins
- Soy Protein Flavours
- Pulse Protein Flavour
- Flavour of Cereal and Pseudocereal Proteins
- Flavour of Novel Food Proteins

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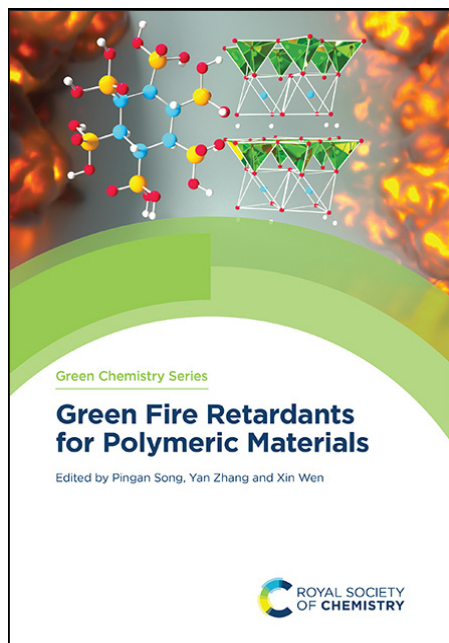
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**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 477  
**BIC:** PNK, PNNP, RNU, TGM  
**THEMA:** PNK, PNNP, RNU, TGM  
**BISAC:** SC1013030, SC1013060, TEC021000

## Green Fire Retardants for Polymeric Materials

**Pingan Song** University of Southern Queensland, Australia

**Yan Zhang** NingboTech University, China

**Xin Wen** West Pomeranian University of Technology, Poland

### Synopsis

Many of the polymers we use every day are highly flammable. Historically, a large number of home fires were caused by ignited polymeric materials until legislation was introduced requiring fire retardants to be added to these materials. Fire retardants increase the time it takes for materials to ignite, providing valuable time to prevent a fire or escape. However, it has become apparent that many of the traditional treatments used as fire retardants are harmful to human health and highly persistent in the environment. **Green Fire Retardants for Polymeric Materials** looks at both the choice of different materials and treatments for improving the flame retardancy of polymeric materials as well as improvements in the green synthesis of these materials.

### Brief Contents

- Introduction
- Plant-derived Fire Retardants
- Animal Product-derived Flame Retardants
- Mineral-derived fire retardants
- Green Synthesis of Organic Fire Retardant
- Green Synthesis of Inorganic Fire Retardants
- Green Synthesis of Organic-Inorganic Hybrid Fire Retardants
- Applications and Safety Assessment of Green Fire Retardants
- Conclusions

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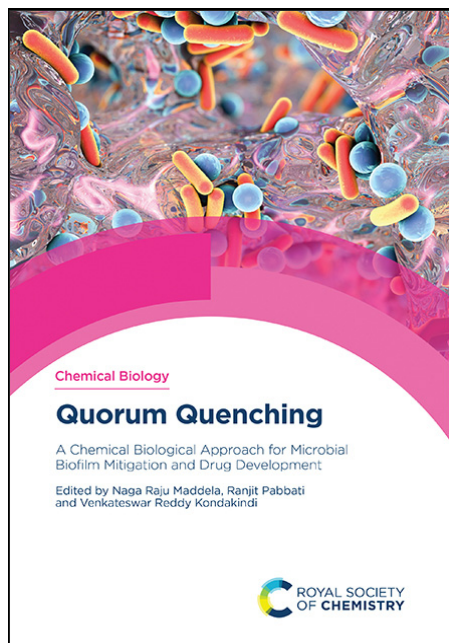
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**Target Audience:** Professional and scholarly,  
College/higher education

**Format:** Hardback

**Size:** 234 x 156 (Royal 8vo) mm

**Pages:** 451

**BIC:** PNN, PSB, PSGD

**THEMA:** PNN, PSB, PSE, PSG

**BISAC:** SCI006000, SCI007000, SCI013040

## Quorum Quenching A Chemical Biological Approach for Microbial Biofilm Mitigation and Drug Development

**Naga Raju Maddela** Universidad Técnica de Manabí,  
Ecuador

**Venkateswar Reddy Kondakindi** Jawaharlal Nehru  
Technological University, India

**Ranjit Pabbati** Jawaharlal Nehru Technological  
University, India

### Synopsis

This book covers the biology of quorum sensing and quenching, potential sources of QQ enzymes, and an overview of their mechanism and applications. An ideal companion to researchers in chemical biology and medicinal chemistry.

### Brief Contents

- Chemical Formation of Biofilms in Drug Development
- Anti-quorum Sensing Therapies' Issues and Limitations
- Antipseudomonal Therapy and Quorum Quenching: A Prospective Mark
- Trends in Quorum Sensing and Quorum Quenching
- Natural QSIs for Biofilm Control in Pathogenic Bacteria
- Inhibitors for Biofilm Control in Drug Resistant *Staphylococcus aureus*
- Antibiotic Resistance in Pathogens – A Global Concern
- Antibiotic Resistance in Microorganisms – Current Status
- Antibiotic Resistance in Aquatic Environmental Systems
- Role of Quorum Quenching in Pathogen Control in Aquaculture
- Quorum Sensing: A New Target for Anti-infective Drug Therapy
- Molecular Identification and Detection of Pathogenic Microorganisms
- Isolation of Quorum Quenching Microorganisms and Screening Methods
- Quorum Quenching in Anti-virulence Therapy
- Quorum Quenching Applications in Plant Biotechnology
- Integrated QQ with Nano-techniques
- Extenuating Biofilms Associated Drug Resistance by Micro and Nano-techno Effectiveness

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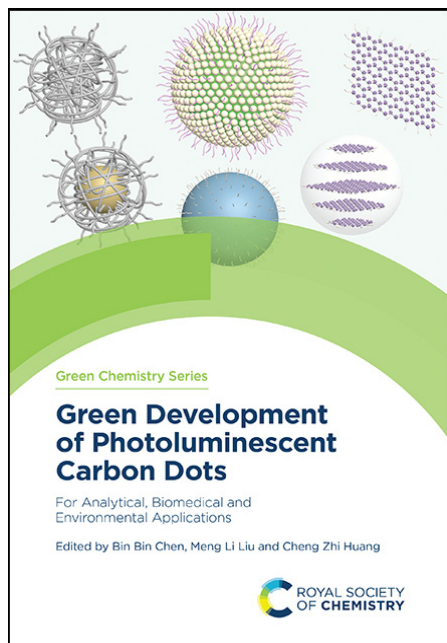
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**BIC:** PD, PNF, RNU, TBN, TQ  
**THEMA:** PDT, PNC, PNF, RNU, TBN  
**BISAC:** SCI013010, SCI013080, SCI050000, SCI053000

## Green Development of Photoluminescent Carbon Dots For Analytical, Biomedical and Environmental Applications

**Bin Bin Chen** The Chinese University of Hong Kong, Hong Kong

**Meng Li Liu** The Chinese University of Hong, China

**Cheng Zhi Huang** Southwest University, China

### Synopsis

Carbon dots (CDs) as an emerging carbon nanomaterial have attracted considerable attention and have been widely used in numerous fields. When compared with semiconductor quantum dots and organic dyes, CDs are a very friendly optical probe with low toxicity, good biocompatibility and good anti-photobleaching. These qualities give them the potential to be greener than other types of quantum dots and organic dyes. Covering several common synthesis strategies, including biomass synthesis, large-scale synthesis and sustainable synthesis technology, this book focuses on the green synthesis of CDs and their applications in the fields of bioanalytical, catalytic, biomedical, and environmental sciences.

### Brief Contents

- Introduction of Photoluminescent CDs
- Biomass Synthesis of CDs
- Strategy of Synthesizing CDs by Artificial Intelligence
- Large-scale Synthesis of CDs for Pollutants Adsorption and Photodegradation
- Functionalization of CDs and Their Catalytic Applications
- CDs-based Sensing Strategy and Mechanism
- Application of CDs in Ions Sensing
- Application of CDs in Drugs, Antibiotics and Toxin Sensing
- CDs for Imaging and Therapy
- Cancer Therapy of CDs
- Exciting Prospects for Green Development of Photoluminescent CDs

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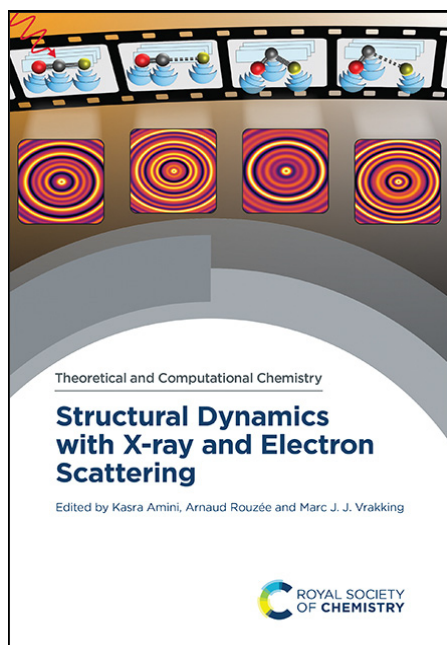
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**BIC:** PHM, PNF, PNRP

**THEMA:** PHM, PNF, PNRP

**BISAC:** SCI013010, SCI013050, SCI013070

## Structural Dynamics with X-ray and Electron Scattering

Kasra Amini Max Born Institute, Germany  
Arnaud Rouzée Max Born Institute, Germany  
Marc J J Vrakking Max Born Institute, Germany

### Synopsis

Ultrafast X-ray and electron scattering are powerful tools that can identify the location of atoms and properties of electrons in transient gas-phase molecules and condensed matter undergoing a photochemical reaction. Providing both an introduction to the fundamental background of scattering theory and a discussion of the latest advances in applications, this book is a great resource for theoretical and experimental chemical physicists interested in learning how X-ray and electron scattering techniques can be applied to the study of structural dynamics.

### Brief Contents

- Ultrafast Molecular Spectroscopy in the Gas Phase
- Ultrafast Spectroscopy in Solid Matter
- Theory of Time-dependent Scattering
- Femtosecond Diffraction with Laser-driven Hard X-ray Sources
- Imaging Clusters and Their Dynamics with Single-shot Coherent Diffraction
- Ultrafast Nanoscale Imaging with High Harmonic Sources
- X-ray Resonant Scattering and Holography with Application to Magnetization Dynamics
- Free Electron Lasers for X-ray Scattering and Diffraction
- Time-resolved X-ray Scattering of Excited State Structure and Dynamics
- Photoelectron Diffraction
- The Many Facets of Ultrafast Electron Diffraction and Microscopy
- Imaging Ultrafast Structural Dynamics with Megaelectronvolt Ultrafast Electron Diffraction
- Laser Induced Electron Diffraction
- Electron Imaging in Action
- RF Cavity-based Ultrafast Transmission Electron Microscopy
- Next Generation Electron Sources

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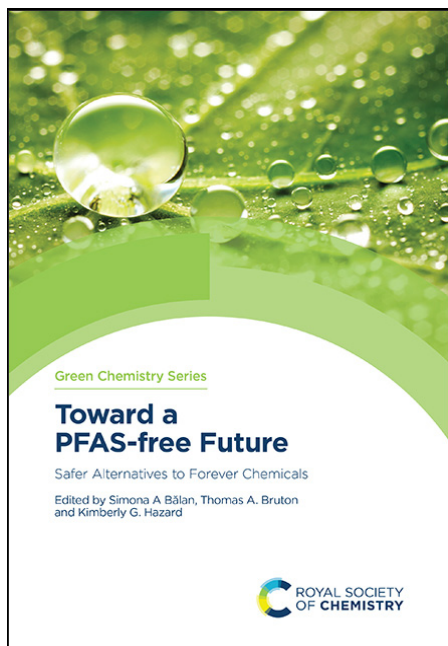
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**Publishing date:** 15/11/2023  
**Target Audience:** Professional and scholarly  
**Format:** Hardback  
**Size:** 234 x 156 (Royal 8vo) mm  
**Pages:** 244  
**BIC:** RNP, RNU, TDCB, TQ  
**THEMA:** PNC, RNP, RNU, TDC  
**BISAC:** SCI013060, SCI013080

## Toward a PFAS-free Future Safer Alternatives to Forever Chemicals

**Simona A Bălan** California Department of Toxic Substances Control, USA

**Thomas A Bruton** California Department of Toxic Substances Control, USA

**Kimberly G Hazard** University of California, Berkeley, USA

### Synopsis

A sustainable future cannot be built with unsustainable chemicals. Poly and perfluoroalkyl substances (PFASs), as a class of chemicals, are extensively used, universally persistent and often very hazardous to human health and the environment. However, safer alternatives to these very effective materials, and methods to discover and use them, are less known. Introducing safer alternatives to some of the PFAS chemicals of concern used in select industry sectors this book informs the reader about the processes of chemical hazard and alternatives assessment, and innovation. It is a valuable resource for both green chemists and industrial chemists interested in how they can make their products safer without compromising on function.

### Brief Contents

- Why Aim Toward a PFAS-free Future?
- Why PFASs Are Chemicals of Concern
- Alternatives to PFASs in Molded Fiber Fast Food Packaging
- PFAS-free Moisture Barriers in Household Product Packaging
- Alternatives to PFASs for the Surfactant Role in Floor Polish
- Strategies for PFAS Removal During Carpet Recycling
- PFASs in Building Products: Survey of Uses and Potential Alternatives
- Greener Solutions to Achieve Durable Water Repellency Without PFASs
- PFAS-free Moisture Barrier in Structural Firefighting Gear
- Is a PFAS-free Future Possible?

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