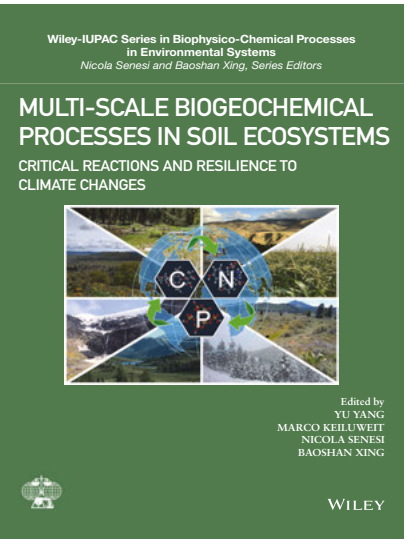
Multi-Scale Biogeochemical Processes in Soil Ecosystems: Critical Reactions and Resilience to Climate Changes



The book published by Wiley in March 2022 (ISBN: 978-1-119-48034-1) is an up-to-date overview of recent research in soil biogeochemical processes and applications in ecosystem management. Organized into three parts, the text examines molecular-scale processes and critical reactions, presents ecosystem-scale studies of ecological hotspots, and discusses large-scale modeling and prediction of global biogeochemical cycles. Part of the Wiley-IUPAC Series on Biophysico-Chemical Processes in Environmental Systems, this authoritative volume

- Provides readers with a systematic and interdisciplinary approach to sustainable agricultural development and management of soil ecosystems in a changing climate
- Features contributions from an international team of leading scientists
- Examines topics such as soil organic matter stabilization, soil biogeochemistry modeling, and soil responses to environmental changes
- Discusses strategies for mitigating greenhouse gas emission and improving soil health and ecosystems resilience
- Includes an introduction to working across scales to project soil biogeochemical responses to climatic change

Multi-Scale Biogeochemical Processes in Soil Ecosystems: Critical Reactions and Resilience to Climate Changes is essential reading for scientists, engineers, agronomists, chemists, biologists, academic researchers, consultants, and other professionals whose work involves the nutrient cycle, ecosystem management, and climate change.

This book is the outcome of IUPAC project 2016-047-1-600.

See IUPAC project https://iupac.org/project/2016-047-1-600 or https://doi.org/10.1002/9781119480419

Green Chemistry and Sustainable Development

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Guest editors Bipulbehari Saha, Francesca Kerton and Hemda Garelick

In many chemistry curricula Green Chemistry has become a feature. In introductory chemistry courses in higher education more and more attention is given to the principles of green chemistry as well as the ideas of sustainable development (UN Sustainable Development Goals). This includes design principles like 'cradle to cradle', 'cradle to grave' as well as life cycle analysis.

The number of concrete examples to illustrate these principles that are used in education at this moment is limited, even though there are many recent examples. Within chemistry education it is important for students to understand the role chemistry plays in society. One of these roles is to apply chemical knowledge to design processes that implement the principles of Green Chemistry and help in Sustainable Development. In order to demonstrate the role of chemistry more information for teachers is needed, so they can use this information and share this with their students.

In total 9 articles are published in a special issue of *CTI* (Vol 4, Issue 2, June 2022) <https://www.degruyter.com/journal/key/cti/4/2/html>, most of them describing interesting experiments that can easily be used by teachers to introduce and illustrate the principles of green chemistry. Some of the experiments were used and designed to be carried out at home. This was caused by the lockdowns occurring during the covid pandemia.

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