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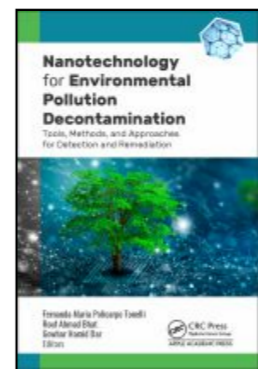
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Environmental Science/Climate Change & Mitigation

Nanotechnology for Environmental Pollution Decontamination
Tools, Methods, and Approaches for Detection and Remediation

Editors: **Fernanda Maria Policarpo Tonelli, PhD**
Rouf Ahmad Bhat, PhD
Gowhar Hamid Dar, PhD

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In Production
Pub Date: July 2022
Hardback Price: \$189.95 USD | £147.00
Hard ISBN: 9781774910405
Pages: Approx. 591p w/index
Binding Type: Hardback
Notes: 15 color and 52 b/w illustrations

This new volume presents informative research on the different aspects of employing nanotechnology for environmental pollution decontamination, highlighting the main tools, methods, and approaches for contaminants detection and remediation.

The book takes a biotechnological point of view that considers the main environmental pollutants; the safety and economic aspects of nanoremediation, nanosensors and nanobiosensors for the detection of pollutants; and strategies to promote nanoremediation and nanobioremediation. The chapters offer a comprehensive overview of nanotechnologic strategies as essential tools to restore polluted environments and to make more feasible and harmonic the pathway to sustainable development. The volume also discusses the use of sensors to detect pollutants and to monitor the quality of environmental restoration.

Topics include nanozymes; organic and inorganic pollutants threatening human health; different types of carbon-based and non-carbon-based nanomaterials in nanosensors and nanobiosensors to detect environmental pollution; nanomaterials that specifically deal with water, soil, or air pollution; and assisted nanoremediation promoted by plants (nanophytoremediation) or microorganisms (for example, mycorrhizal fungus) that promote in situ nano-phyto-mycorrhizo-remediation. Also addressed are aspects related to a macroperspective of nanoremediation that highlight the economic aspects related to nanotechnology, the safety aspects of the use of nanomaterials, and the sustainability aspects related to the use of nanomaterials in strategies of environmental restoration.

Nanotechnology for Environmental Pollution Decontamination: Tools, Methods, and Approaches for Detection and Remediation offers extensive and comprehensive knowledge on nanotechnology applied to pollution detection and remediation, assisted or not by biological strategies.

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"I would like to thank Dr. Mahmood Khan and AAP warmly for offering me the opportunity to publish my book *Sustainable Viticulture: The Vines and Wines of Burgundy*. I found a lot of pleasure in reflecting on my experience and observations as a viticulturist in Burgundy and other regions of the world. I enjoyed putting in writing thoughts, memories, and ideas I've had for years. I also found pleasure in synthesizing discussions I've had with wine professionals and wine buffs as well as reading notes I regularly jotted down. I can also add that I very much appreciated the friendly and firm support and guidance of the staff of Apple Academic Press." — Claude Chapuis, Associate Professor, School of Wine & Spirits Business, Dijon, France

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