

Nanobiotechnology for Plant Protection

Edited by: Karen A. Andersen



Copper Nanostructures: New Generation of Agrochemicals for Sustainable Agriculture Systems



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Chapter 26 - Advances in the applications of copper- based nanocomposites in wastewater treatment
Iffat Zareen Ahmad
Pages 661-675
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Chapter 27 - Synthesis of copper nanostructures: Antimicrobial applications and environmental remediation of emerging agrochemicals
Kubra Ulucan-Altuntas
Pages 677-699
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Chapter 28 - Copper-based metal-organic framework for environmental applications
Alviya Sultana, Rishabh Anand Omar, ... Mohammad Ashfaq
Pages 701-717
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- Book chapter Abstract only
Chapter 29 - Ecological effects of copper NPs: Advantages and drawbacks regarding current and potential applications
Hermes Pérez-Hernández, Selvia García-Mayagoitia, ... Fabián Fernández-Luqueño
Pages 719-750
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Chapter 30 - Copper nanoparticle-based sensors for environmental pollutions
Khemchand Dewangan, Tushar Kant and Kamlesh Shrivastava
Pages 751-774
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Abstract

The Earth has around 71% of its surface covered with water but all of it is not fit for human consumption. Due to increasing global warming and climate change, the dearth of safe and clean potable drinking water attracted considerable attention throughout the world. Water shortage is an old issue. It affects almost every life form of this world. It is determined by two main causes: continuous requirement of freshwater because of the rise in population and overconsumption of the available freshwater resources. The continuous requirement for freshwater has forced the researchers to develop some different and advanced techniques to get rid of the salinity of salty water to make it fit for daily human consumption. During the last decades, several techniques have been designed to fetch clean and safe potable water from the largest resource, seawater. With the advancement of nanotechnology, nanomaterials found application in almost every sphere of life and are solutions to almost every problem. They are also been used in order to solve the problem of global freshwater shortage. Desalination procedures have tremendously been enriched under the influence of nanomaterials. Various metallic nanomaterials have been employed for this purpose, of which copper-based nanomaterials hold special significance due to their advantages. In the present chapter, copper-based nanomaterials, which have been used for the desalination of water, have been discussed by thorough investigation of the review of the literature. It has covered various methodologies that are based on the exploitation of copper-based nanomaterials for the process of water desalination.