

Springer

1st
edition1st ed. 2019, IX, 605 p. 121
illus., 86 illus. in color.**Printed book**

Hardcover

Printed book

Hardcover

ISBN 978-3-030-05568-4

£ 119,99 | CHF 165,50 | 139,99 € |
153,99 € (A) | 149,79 € (D)

Available

Discount group

Science (SC)

Product category

Contributed volume

Other renditions

Softcover

ISBN 978-3-030-05570-7

Life Sciences : Plant Breeding / Biotechnology

Husen, Azamal, Iqbal, Muhammad (Eds.)

Nanomaterials and Plant Potential

- Offers the first comprehensive book on plant potential in nanoscience
- Synthesizes recent developments in plant-mediated nanoparticle fabrication and application in cutting-edge areas
- Discusses plant functional and physiological response to nanomaterials

This book discusses the latest developments in plant-mediated fabrication of metal and metal-oxide nanoparticles, and their characterization by using a variety of modern techniques. It explores in detail the application of nanoparticles in drug delivery, cancer treatment, catalysis, and as antimicrobial agent, antioxidant and the promoter of plant production and protection. Application of these nanoparticles in plant systems has started only recently and information is still scanty about their possible effects on plant growth and development. Accumulation and translocation of nanoparticles in plants, and the consequent growth response and stress modulation are not well understood. Plants exposed to these particles exhibit both positive and negative effects, depending on the concentration, size, and shape of the nanoparticles. The impact on plant growth and yield is often positive at lower concentrations and negative at higher ones. Exposure to some nanoparticles may improve the free-radical scavenging potential and antioxidant enzymatic activities in plants and alter the micro-RNAs expression that regulate the different morphological, physiological and metabolic processes in plant system, leading to improved plant growth and yields. The nanoparticles also carry out genetic reforms by efficient transfer of DNA or complete plastid genome into the respective plant genome due to their miniscule size and improved site-specific penetration. Moreover, controlled application of nanomaterials in the form of nanofertilizer offers a more synchronized nutrient fluidity with the uptake by the plant exposed, ensuring an increased nutrient availability. This book addresses these issues and many more.

Order online at [springer.com/booksellers](https://www.springer.com/booksellers)**Springer Nature Customer Service Center GmbH**

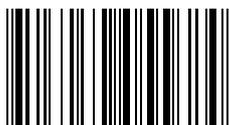
Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-booksellers@springernature.com

ISBN 978-3-030-05568-4 / BIC: PSTL / SPRINGER NATURE: SCL24060

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.