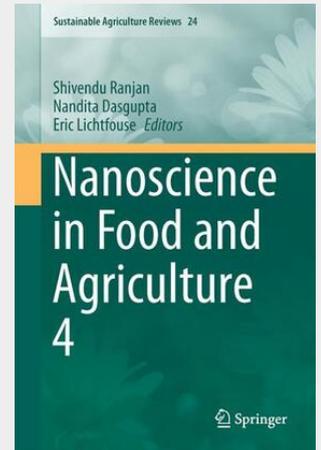


Nanoscience in Food and Agriculture 4

In this book we present ten chapters describing the synthesis and application of nanomaterials for health, food, agriculture and bioremediation. Nanomaterials, with unique properties are now being used to improve food and agricultural production. Research on nanomaterials is indeed revealing new applications that were once thought to be imaginary. Specifically, applications lead to higher crop productivity with nanofertilisers, better packaging, longer food shelf life and better sensing of aromas and contaminants. These applications are needed in particular in poor countries where food is scarce and the water quality bad. Nanotechnology also addresses the age old issue of water polluted by industrial, urban and agricultural pollutants. For instance, research produces nanomaterials that clean water more efficiently than classical methods, thus yielding water for drinking and irrigation. However, some nanomaterials have been found to be toxic. Therefore, nanomaterials should be engineered to be safe for the environment.

This book presents comprehensive reviews on the principles, design and applications of nanomaterials in the food, water and pharmaceutical sectors. It is the fourth volume on Nanoscience in Food and Agriculture published in the series Sustainable Agriculture Reviews. It focuses on different aspects of the rapidly emerging area of nanotechnology. Nanomaterials are not new – they have always occurred in nature, but what is new is the methods that allow the synthesis of unprecedented nanomaterials with tailored, finely tuned properties, which open the way for numerous applications in diverse fields. In particular, the high-surface-to-volume ratio of engineered nanomaterials makes them often more efficient than those found in nature. While nanomaterials are being commercialized in various sectors, they are only slowly being used in the food industry and their use is still a topic of debate. Research shows that nanomaterials improve bioavailability, shelf life and nutritional value by reducing nutrient loss and they are essential in active packaging, also known as intelligent or smart packaging, which helps extend shelf life, monitor freshness, display information on quality, and improve safety and convenience. Nevertheless, the potential toxicity of new nanomaterials should be studied before they are used in consumer products.



106,99 €

99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783319531113

Medium: Buch

ISBN: 978-3-319-53111-3

Verlag: Springer International Publishing

Erscheinungstermin: 08.03.2017

Sprache(n): Englisch

Auflage: 1. Auflage 2017

Serie: Sustainable Agriculture Reviews

Produktform: Gebunden

Gewicht: 6092 g

Seiten: 305

Format (B x H): 160 x 241 mm

