

Special Issue

Regulation of Nanomaterials in Crop Growth and Physiology Under Abiotic Stress

Message from the Guest Editors

The application of nanomaterials in agriculture has emerged as a revolutionary approach to enhance crop growth and resilience, particularly under abiotic stress conditions such as heavy metals, drought, salinity, and extreme temperatures. This Special Issue's primary aim is to explore nanomaterials' regulatory mechanisms in crop growth and physiology under various abiotic stress conditions. We seek to provide a comprehensive platform for researchers to present their latest findings and innovative approaches in this rapidly evolving field. This Special Issue will cover the synthesis and characterization of nanomaterials, their interaction with plant systems, and the underlying molecular and physiological mechanisms that confer stress tolerance. We solicit original research articles, reviews, and case studies that address topics such as the development of novel nanomaterials, their application in crop management under stress conditions, and the elucidation of their regulatory pathways in plants. This Special Issue aims to gather high-quality papers that push the boundaries of current knowledge and foster advancements in the sustainable use of nanotechnology in agriculture.

Guest Editors

Prof. Dr. James Barker

School of Life Sciences, Pharmacy and Chemistry, Kingston University, Kingston upon Thames KT1 2EE, UK

Dr. Abolghassem Emamverdian

Bamboo Research Institute, Nanjing Forestry University, Nanjing 210037, China

Deadline for manuscript submissions

closed (20 April 2026)



Agronomy

an Open Access Journal
by MDPI

Impact Factor 3.4
CiteScore 6.7



mdpi.com/si/208687

Agronomy
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agronomy@mdpi.com

[mdpi.com/journal/
agronomy](https://mdpi.com/journal/agronomy)





Agronomy

an Open Access Journal
by MDPI

Impact Factor 3.4
CiteScore 6.7



[mdpi.com/journal/
agronomy](https://mdpi.com/journal/agronomy)



About the Journal

Message from the Editor-in-Chief

Agronomy draws together researchers from diverse areas of agricultural research with a common aim of enhancing agricultural productivity globally. The journal provides unlimited free access to all those interested in advancing agricultural science from both the research and general community. Papers are released immediately after acceptance through the internet.

Agronomy is supported by our authors and their institutes through low article processing charges (APC) for accepted papers. We hope you will support the journal by becoming one of our authors.

Editor-in-Chief

Prof. Dr. Leslie A. Weston

Gulbali Centre for Agriculture, Water and Environment Research,
Charles Sturt University, Wagga Wagga, NSW 2678, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), GEOBASE, PubAg, AGRIS, and other databases.

Journal Rank:

JCR - Q1 (Agronomy) / CiteScore - Q1 (Agronomy and Crop Science)