



an Open Access Journal by MDPI

3D Imaging Techniques Adapted to Plant Phenomics

Guest Editors:

Dr. Shichao Jin

Plant Phenomics Research Centre, Academy for Advanced Interdisciplinary Studies, Nanjing Agricultural University, Nanjing 210095, China

Prof. Dr. Wanneng Yang

College of Plant Science and Technology, Huazhong Agricultural University, Wuhan 430070, China

Dr. Xinyu Guo

National Engineering Research Center for Information Technology in Agriculture, Beijing 100097, China

Deadline for manuscript submissions: closed (31 March 2023)

Message from the Guest Editors

Dear Colleagues,

Plant phenomics is the bridge for linking plant genomics and environmental studies, thereby improving plant breeding and management. Imaging techniques have improved high-throughput plant phenotyping due to their advantages in multi-dimensional data acquisition and analysis. Among them, 3D imaging techniques, such as LiDAR (light detection and ranging), CT, structured light, and multi-view images, provide powerful new tools for characterizing 3D traits that are unavailable from a single 2D perspective. Currently, the development of 3D imaging in plant phenotyping includes both facilities (sensors and platforms) and algorithms. This progress also improves 3D plant modeling across different spatial-temporal scales and disciplines, providing easier and less expensive association with genes and analysis of environmental practices. Although 3D imaging has been favored in plant phenotyping and modeling, its progress lags far behind 2D phenotyping. image-based plant Low-cost, highthroughput, and accurate 3D imaging phenotypic facilities and intelligent algorithms are urgently needed in order to boost 3D image-based plant phenomics applications.



mdpi.com/si/127076







an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Dilantha Fernando

Department of Plant Science, University of Manitoba, Winnipeg, MB R3T 2N2, Canada

Message from the Editor-in-Chief

Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and community.

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), PubMed, PMC, PubAg, AGRIS, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q1 (Plant Sciences) / CiteScore - Q1 (Plant Science)

Contact Us

Plants Editorial Office MDPI, St. Alban-Anlage 66 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/plants plants@mdpi.com X@Plants_MDPl