Special Issue

Application of Advanced Microscopy in Plant Physiology

Message from the Guest Editors

The development of both traditional and advanced microscopy techniques has revolutionized our understanding of plant cell structures and their mechanisms at the subcellular and molecular levels. This Special Issue seeks to highlight the latest breakthroughs and future directions in subcellular imaging and image analysis, with a focus on plant cell biology. Topics of interest include, but are not limited to, cryo-EM and cryo-ET applications in plant biology, with an emphasis on molecular mechanisms and interactions; innovations in super-resolution microscopy for plant cell imaging; advances in cryo-CLEM for the correlation of molecular structures across multiple imaging scales; high-throughput cryo-microscopy techniques and their applications in plant–pathogen interactions; machine learning, deep learning, and artificial intelligence-based methods for image reconstruction, segmentation, and analysis of plant cell images; and the development of new imaging hardware and software to enhance cryogenic microscopy.

Guest Editors

Dr. Yan Liu

Prof. Dr. Lydia-Marie Joubert

Dr. Qingyan Meng

Deadline for manuscript submissions

closed (30 June 2025)

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About the Journal

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 commentaries on topics of interest to the plant research community.

Editor-in-Chief

Prof. Dr. Dilantha Fernando
Department of Plant Science, University of Manitoba, Winnipeg, MB R3T 2N2, Canada

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