Special Issue

Mechanization in Rice Farming: From Seeding to Harvesting

Message from the Guest Editors

This Special Issue aims to explore the full spectrum of mechanization in rice production—from precision seeding and transplanting to intelligent irrigation, pest control, and advanced harvesting systems. Recent advances in rice farming mechanization focus on integrating smart technologies to enhance precision, efficiency, and adaptability. Cutting-edge research includes the real-time adjustment of seeding and fertilization, autonomous navigation technologies using multi-sensor fusion (vision, UWB, and inertial data), and intelligent harvesting systems that are capable of yield monitoring and loss reduction. Other innovations involve AI-driven pest and disease detection, variable-rate irrigation systems, and digital twin models for predictive field management. Studies are also exploring lightweight, energy-efficient machinery for hilly terrains and smallholder applications, supporting inclusive and sustainable development. We are soliciting original research articles that address mechanical innovations, system optimization, performance testing, and agronomic integration across all stages of rice cultivation.

Guest Editors

Prof. Dr. Shan Zeng

Key Laboratory of Key Technology on Agricultural Machine and Equipment, Ministry of Education, College of Engineering, South China Agricultural University, Guangzhou 510642, China

Dr. Yu Wang

College of Engineering, South China Agricultural University, Guangzhou 510642, China

Deadline for manuscript submissions

25 April 2026

Agriculture

an Open Access Journal by MDPI

Impact Factor 3.6
CiteScore 6.3

mdpi.com/si/238597

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

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Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

Prof. Dr. Les Copeland
Sydney Institute of Agriculture, School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia

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