Systems Analytics and Intelligent Control in Agriculture 4.0 (Code: jn849)

Goal:

The world population has the potential to rise 31% by 2050, and thereby, the required food supply production will also grow. Climate change and limited natural resources have also brought challenges to agricultural production in significant ways. Agriculture 4.0 has emerged to satisfy the requirements for food security, which is a new agricultural production mode with the support and means of the Internet of Things, big data, mobile Internet, and cloud computing technologies. The goals of Agriculture 4.0 are to increase yields with a lower input cost, labor, and environmental pollution, in this current time of rising demand for food. It is also considered smart agriculture, which follows the stages of traditional, mechanized, and information-based agriculture. While the concept of Agriculture 4.0 has the potential to drive agricultural systems more efficient and productive, there are new operational challenges. The complex connectivity among crops, farmlands, weather, equipment, and human require novel methodologies to analyze, manage and control such a new production mode. Hence, this special session aims to motivate original, rigorous, and relevant research focusing on systems analytics and intelligent control in Agriculture 4.0. Another goal is to attempt to establish a strong researcher network in this emerging domain and stimulate cross-disciplinary research and discussions with researchers from various disciplines.

Topics:

This special session seeks to attract original yet relevant research on the issues related to in-filed, on-farm, and post-harvest operations in Agriculture 4.0. The submissions are warmly encouraged, which address the following topics (but not limited to):

- Design, Manufacturing, and Management of Smart Farming Equipment
- Modeling, System, and Equipment of Intelligent Irrigation
- Design and Control for Agricultural Robots
- Agricultural Internet of Things and Digital Agriculture
- Big Data Analytics in Agriculture 4.0
- AI-enabled Prediction for Agri-Production Management
- Agricultural Decision Support Systems
- Data Security and Privacy in Agriculture 4.0

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