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Special Session on
SS 07 - Industry 4.0 in Agriculture

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Call for Papers

The three previous industrial revolutions (from Industry 1.0 to Industry 3.0) gradually modified the form of agricultural activities. The traditional labor-intensive agriculture has been replaced by industrial agriculture through the adoption of industrial production patterns, industrial production processes, and industrial supply chain management in agriculture. Currently, industrialized food production and distribution dominates the global agriculture industry because this method is more productive and cost-effective.

However, there still exist several issues that need to be addressed in the current status of industrial agriculture, such as ecological problems, lack of digitization, food safety issue, and inefficient agri-food supply chain.

The fourth industrial revolution (Industry 4.0) is ongoing, and is characterized by a fusion of emerging technologies such as the Internet of Things (IoT), robotics, Big Data, Artificial Intelligence (AI), and blockchain technology. At present, industrial production processes and supply chains have become more autonomous and intelligent. Correspondingly, the integration of Industry 4.0 and agriculture provides the opportunity to transform industrial agriculture into the next generation, namely, Agriculture 4.0. In this context, sustainable and intelligent industrial agriculture would be achieved through real-time variable fine-grained collection, processing, and analyzing of spatio-temporal data in all aspects of the agricultural industry, from food production, processing, distribution to consumer experience. Such a smart industrial agriculture ecosystem with real-time farm management, a high degree of automation, and data-driven intelligent

decision-making would greatly improve productivity, agri-food supply chain efficiency, food safety, and the use of natural resources.

This special session on “Industry 4.0 in Agriculture” is to provide a forum for researchers from diverse interdisciplinary areas to present their latest achievements in smart agriculture.

Topics of interest include, but are not limited to:

- Internet of Things for smart agriculture
- Robotics and autonomous systems for smart agriculture
- Artificial intelligence for smart agriculture
- Big data analytics for smart agriculture
- Blockchain for smart agriculture
- Edge computing for smart agriculture
- Unmanned aerial vehicle for smart agriculture

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