

**2020 IEEE International Conference on Industrial Informatics**  
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**Special Session on**  
**“Sustainable and Intelligent Precision Agriculture”**

organized by

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### Call for Papers

#### Theme:

Since the green revolution in the mid-20th century, we have entered into the era of industrial agriculture, in which farming activities are industrialized and specialization is applied to all steps during food production of livestock, poultry, fish and crops. Industrial agriculture has many advantages. For example, the use of specialized machinery lightens farmer's labor intensity. Large-scale monoculture crops planting and intensive farming achieve higher food yields with lower price. In plant factory, the cultivation environment can be artificially controlled, so the vegetables grow faster than in outdoor conditions. However, industrial agriculture also causes some negative impacts on ecological system due to the high energy consumption and serious environmental degradation. Tractors, combines, cultivators and other agricultural machinery not only consume much fossil fuels but also degrade soil. The use of too much synthetic fertilizers and pesticides contaminate local rivers and water sources. Water is often overused in the irrigation stage.

Industry 4.0, that built on leading-edge technologies, will be a transforming force to reshape the industrial agriculture. Through wireless sensor network, unmanned aerial vehicle and satellite imagery, the ubiquitous sensing can collect valuable data during food production. Precision agriculture helps to save use of fertilizer and water. Solar photovoltaic power harvesting and wireless energy transfer is a key approach to reduce the consumption of fossil fuels. Smart microclimate control in greenhouse and plant factory enables deep understanding on the interaction between gene, environment and phenotype. Artificial intelligence and big data makes the industrial agriculture more intelligent.

This special session on “Sustainable and Intelligent Precision Agriculture” is to provide a forum for researchers from diverse interdisciplinary areas to present their latest achievements in industrial agriculture.

Topics of interest include, but are not limited to:

- Artificial intelligence and machine learning for smart industrial agricultural
- Connectivity, localization and autonomous driving of agricultural machinery network
- Precision agriculture with sensor, drones, remote sensing and Internet of Things
- Design, development and application of agricultural system with Industry 4.0
- Blockchain, big data for digital farming: theory and application
- Energy harvesting and wireless power transfer in industrial agriculture
- Next generation 5G mobile networks for industrial agriculture
- Ontology-driven plant phenomics information system

- Robotics, guidance and automation for agriculture
- Case study of sustainable and intelligent industrial agriculture
- Security and privacy for green IoT-based agriculture.

**Submissions Procedure:** All the instructions for paper submission are included in the conference website <https://indin2020.medmeeting.org/en>

**Fast track to transactions:** INDIN 2020 presents a unique chance of fast-tracking best papers to IEEE Transactions on Industrial Informatics (TII). Authors intended to use the fast track shall submit papers in the form following the transactions requirements: length up to 8 pages, double-column IEEE format, without authors' names and affiliations. If the paper is accepted and recommended for the transactions' submission, the authors will be asked to:

- 1) Revise the paper according to the reviewers' comments and submit it to the TII with attached point by point summary of revisions. The paper will be then subject to double blind review process of TII.
- 2) Prepare a shortened, 4 page long version for the INDIN proceedings and submit it by the 'final manuscripts due' deadline of INDIN 2020. This version shall include authors names and affiliations as per the usual INDIN template.

**Deadlines:**

Deadline for submission of papers:	March 07, 2020
Notification of acceptance of papers:	April 18, 2020
Final manuscripts due:	May 09, 2020