Technical Program for Wednesday August 28, 2013

**WeP1P**

**Plenary I (Plenary Session)**

Chair: Noguchi, Noboru

09:15-10:00 WeP1P.1

*Advanced Control of Combine Harvesters*, pp. 1-5.

De Baerdemaeker, Josse

Saeys, Wouter

Katholieke Univ. Leuven

**We1A**

**Post-Harvest (Regular Session)**

Chair: Shimizu, Hiroshi

10:20-10:40 We1A.1

*Smooth Adaptive Robust Temperature Control of a Seed Drying System*, pp. 6-11.

Oliveira, Josenalde Barbosa

Agricultural School of Jundiaí

10:40-11:00 We1A.2

*Grain Dryer Temperature Optimisation with Simulation and a Test Dryer*, pp. 12-17.

Tusanen, Johannes

Jokiniemi, Heikki Tapani

Hautala, Mikko

Univ. of Helsinki

11:00-11:20 We1A.3

*Continuous Sliding Mode Temperature Tracking of a Solid State Fermentation Reactor for Substrate Production*, pp. 18-23.

Sanchez, Arturo

Loukianov, Alexander G.

Aroche, Oscar

Centro de Investigacion y Estudios Avanzados

CINVESTAV IPN GDL

11:20-11:40 We1A.4


Alander, Jarmo

Bochkov, Vladimir

Martinkauppi, J. Birgitta

Väisänu, Petri

Söderbacka, Christian

Univ. of Vaasa

**We1B**

**Robotics: Sensors (Regular Session)**

Chair: Rovira-Más, Francisco

10:20-10:40 We1B.1

*Turning Performance of Combine Robot by Various Compasses*, pp. 29-34.

Iida, Michihisa

Kurita, Hiroki

Cho, Won-Jae

Mochizuki, Yuki

Yamamoto, Ryosuke

Suguri, Masahiko

Masuda, Ryohei

Kyoto Univ.

10:40-11:00 We1B.2

*Collision Avoidance Method with Nonlinear Model Predictive Trajectory Control*, pp. 35-40.

Backman, Juha

Okasan, Timo

Visala, Arto

Aalto Univ. School of Electrical Engineering

Aalto Univ.

Aalto Univ. ELEC School

11:00-11:20 We1B.3

*A Global Positioning System Guided Automated Rice Transplanter*, pp. 41-46.

Nagasaka, Yoshisada

National Agriculture and Food Res. Organization

Implementation and Comparison of Attitude Estimation Methods for Agricultural Robotics, pp. 52-57.


Automatic Detection of Abnormally Soft Tomatoes, pp. 64-69.

Detection of Food Hazards Using Fluorescence Fingerprint, pp. 70-74.

A Method to Detect the Occurrence of Rice Plant Lodging Using Wavelet Transform, pp. 75-80.

Image Analysis of Trout Cutlets, pp. 81-84.
13:00-13:20 We2B.1
Systematic Model Based Path Tracking Control of Actively Steered Implements in Simulation and Experiment, pp. 85-90.
Werner, Roland
Univ. of Kaiserslautern
Kormann, Georg Aloys Ludwig
John Deere GmbH & Co. KG
Mueller, Steffen
Tech. Univ. of Kaiserslautern

13:20-13:40 We2B.2
A Row Crop Following Behavior Based on Fuzzy Primitive Behaviors for Navigation System of Agricultural Robots, pp. 91-96.
Sousa, Rafael Vieira de
Univ. of São Paulo
Tabile, Rubens Andre
Univ. of São Paulo
Inamasu, Ricardo Yassushi
Brazilian Agricultural Inst. Res. Corp.
Porto, Arthur Jose Viera
USP - Engineering School of São Carlos

13:40-14:00 We2B.3
Complete Field Coverage As a Multi-Vehicle Routing Problem, pp. 97-102.
Burger, Mernout
Delft Univ. of Tech.
Huiskamp, Marco
ASML
Keviczky, Tamas
Delft Univ. of Tech.

14:00-14:20 We2B.4
Choi, Jongmin
Hokkaido Univ.
Yin, Xiang
Hokkaido Univ.
Noguchi, Noboru
Hokkaido Univ.

14:20-14:40 We2B.5
Yin, Xiang
Hokkaido Univ.
Noguchi, Noboru
Hokkaido Univ.

15:00-15:20 We3A.1
Standardized Control and Communication Data Network for a Small Range Agricultural Machinery, pp. 115-120.
Motobayashi, Kota
National Agriculture and Food Res. Organization
Nishiwaki, Kentaro
National Agriculture and Food Res. Organization
Hamada, Yasuyuki
National Agriculture and Food Res. Organization
Okuno, Rintaro
National Agriculture and Food Res. Organization
Teramoto, Ikuhiro
National Agriculture and Food Res. Organization
Tamaki, Katsuhiko
National Agriculture Res. Organization
Nagasaka, Yoshisada
National Agriculture and Food Res. Organization
Kikuchi, Yutaka
National Agriculture and Food Res. Organization
Saito, Masahiro
National Agriculture and Food Res. Organization

15:20-15:40 We3A.2
Development of an Object-Oriented Version of TOMGRO for a Web-Based Decision Support System, pp. 121-126.
Lousky, Marc
Tech.
Linker, Raphael
Tech.
Teitel, Meir
Agricultural Res. Organization

15:40-16:00 We3A.3
Piromalis, Dimitrios
Tech. EDUCATIONAL Inst. OF PIRAEUS
Arvanitis, Kostas
Agricultural Univ. of Athens
Sigrimis, Nick
Ag Univ. of Athens

16:00-16:20 We3A.4
Ant Colony Optimization for Scheduling of Agricultural Contracting Work, pp. 133-137.
Alaiso, Sami Oskari
Aalto Univ.
Backman, Juha
Aalto Univ. School of Electrical Engineering
Visala, Arto
Aalto Univ. ELEC School

16:20-16:40 We3A.5
Remote Monitoring of Agricultural Robot Using Web Application, pp. 138-142.

Ishibashi, Maya Kyoto Univ.
Iida, Michihisa Kyoto Univ.
Suguri, Masahiko Kyoto Univ.
Masuda, Ryohei Kyoto Univ.

We3B TUAS Hall TU1
Robotics III (Regular Session)
Chair: Noguchi, Noboru Hokkaido Univ.
15:00-15:20 We3B.1

A Robot System for Paddy Field Farming in Japan, pp. 143-147.
Tamaki, Katsuhiko National Agriculture Res. Organization
Nagasaka, Yoshisada National Agriculture and Food Res. Organization
Nishiwaki, Kentaro National Agriculture and Food Res. Organization
Saito, Masahiro National Agriculture and Food Res. Organization
Kikuchi, Yutaka National Agriculture and Food Res. Organization
Motobayashi, Kota National Agriculture and Food Res. Organization

15:20-15:40 We3B.2
Saito, Masahiro National Agriculture and Food Res. Organization
Tamaki, Katsuhiko National Agriculture Res. Organization
Nagasaka, Yoshisada National Agriculture and Food Res. Organization
Nishiwaki, Kentaro National Agriculture and Food Res. Organization
Motobayashi, Kota National Agriculture and Food Res. Organization

15:40-16:00 We3B.3
Development of Path Planning Algorithm for an Autonomous Mower Tractor, pp. 154-158.
Song, Mingzhang Chungnam National Univ.
Kang, Sin-Woo Chungnam National Univ.
Chung, Sun-Ok Chungnam National Univ.
Kim, Ki-Dae Chungnam National Univ.
Chae, Young-Suk Chungnam National Univ.
Lee, Dae-Hyun LS Mtron Ltd.
Kim, Yong-Joo LS Mtron Ltd.
Yu, Seung-Hwa Chonnam National Univ.
Lee, Kyeong-Hwan Chonnam National Univ.

16:00-16:20 We3B.4
Control of Four Wheel Steering Using Independent Actuators, pp. 159-163.
Oksanen, Timo Aalto Univ.
Linkolehto, Raimo MTT

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ISO 11783 Compliant Forest Crane As a Platform for Automatic Control, pp. 164-169.
Kalmar, Jouko Aalto Univ.
Pihlajamäki, Tuomas Tampere Univ. of Tech.
Hyyti, Heikki Sakari Aalto Univ.
Luomaranta, Markku Tampere Univ. of Tech.
Visala, Arto Aalto Univ. ELEC School
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### Th2A  TUAS Hall AS1

#### Control and Automation in Horticulture (Regular Session)

**Chair:** Van Henten, Eldert Jan  
Wageningen Univ.

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<td>Hirokuki, Inazumi</td>
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<td>Tech. Educational Inst. of Messologi, Greece</td>
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<td>Karanastasi, Eirini</td>
<td>Tech. Educational Inst. of Messologhi</td>
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<td>Geoponiki S.A., Lavrion Anenue, Koropi Attica, Greece</td>
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<td>Panidis, Thrassos</td>
<td>Department of Mechanical Engineering &amp; Aeronautics, Univ. o</td>
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### Th2B  TUAS Hall TU1

#### Mechatronics (Regular Session)

**Chair:** De Baerdemaeker, Josse  
Katholieke Univ. Leuven

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<td>Design Considerations for ISOBUS Class 3 Machinery System's Human-Machine Interaction, pp. 259-263.</td>
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<td>Development of Tractor Automatic Controlled Boom Sprayer Using CAN-BUS, pp. 264-269.</td>
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<td>YAMABIKKO Corp.</td>
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