International Conference on Sensing Technologies for Biomaterial, Food, and Agriculture ’13
SeTBio’13
Tuesday, April 23

15:40-15:45 Opening Room 311+312
Opening Remarks
15:40 N. Kondo, Conference Chair of SeTBio’13
Professor, Graduate School of Agriculture, Kyoto University, Japan

15:45-18:00 SeTB1 : Light and Plant Factory
Chair: I. Farkas, Program Committee Member, Szent István University, Hungary (Tentative)
Co-Chair: H. Shimizu, Vice Chair of Program Committee, Kyoto University, Japan (Tentative)

SeTB1-1 (Invited) Advanced Technologies for Plant Factory
15:45 Haruhiko Murase
Osaka Prefecture University, Japan

SeTB1-2 Development of a Monitoring System Technology Suitable for Production Process Monitoring in Small Scale Protected Horticulture
16:15 Y. Nakamishi, and R. Kudo
Shikoku Research Institute Inc, Japan

SeTB1-3 Efficient Plant Growth Using Automatic Position-Feedback Laser Light Irradiation
Graduate School of Engineering, University of Fukui, Japan

SeTB1-4 Effect of Photoperiod on Flowering of Cypress Vine (Ipomea quamoclit L.)
16:45 Y. Koike
Faculty of Agriculture, Tokyo University of Agriculture, Japan

SeTB1-5 (Invited) Current State and Research Trend in Light Environment for Plant Factory
17:00 Hiroshi Shinzawa
Kyoto University, Japan

SeTB1-6 Comparison on Machine Vision System for Sorting Melon Seedling on Grafting Robot
17:30 S. Tian, S. Dong, J. Yang, and T. Li
Key Laboratory of Protected Horticulture, Shenyang Agricultural University, China

SeTB1-7 Computer Vision Methods for Greenhouse Irrigation Control
17:45 I. Farkas
Department of Physics and Process Control, Szent István University, Hungary

Wednesday, April 24

9:00-11:45 SeTB2: Light and Precision Agriculture
Room 311+312
Chair: S. Shibusawa, Vice Chair of Program Committee, Tokyo University of Agriculture and Technology, Japan (Tentative)

SeTB2-1 (Invited) Multi-scale Photonics for Precision Agriculture
9:00 Josse De Baerdemaeker
Division of Mechatronics, Biostatistics and Sensors, MeBioS - KU Leuven, Belgium

SeTB2-2 Mapping Wetland Cover Types Using Remote Sensing and GIS in Can Gio Mangrove Biosphere Reserve, Vietnam
9:30 P. Tien Dai1, and K. Yoshino2
1)Center for Agricultural Research and Ecological Studies (CARES), Hanoi University of Agriculture (HUA), Vietnam, 2)Faculty of Engineering, Information and Systems, University of Tsukuba, Ibaraki, Japan

SeTB2-3 Spectral Imaging Analysis for Silkworm Gender Classification
9:45 S. Samriddetchakajorn1, C. Kamtongdee2, and C. Sa-NgiamSak3
1)Intelligent Devices and Systems Research Unit, National Electronics and Computer Technology Center, Thailand, 2)Department of Electrical Engineering, Khon Kaen University, Thailand

SeTB2-4 The Potential of Visible-Near Infrared Spectroscopy for Mapping of Multiple Soil Properties Using Real-Time Soil Sensor
10:00 B. S. N. Aliiah1, M. Kodaira2, and S. Shibusawa2
1)United Graduate School of Agricultural Science, Tokyo University of Agriculture and Technology, Japan, 2)Institute of Agriculture, Tokyo University of Agriculture and Technology, Japan

--- Break (10:15-10:30) ----

Chair: F. Giammetta, University of Molise, Italy (Tentative)

SeTB2-5 Vibration Analysis Using a Contactless Acquisition System
10:30 P. Catalano1, F. Fucci1, F. Giammetta1, G. La Fianza1, and B. Bianchi1
1)University of Molise, Italy, 2)University of Bari, Italy

SeTB2-6 Proposal of Optical Farming -Development of Several Optical Sensing Instruments for Agricultural Use-
10:45 Y. Saito1, and K. Kobayashi2
1)Faculty of Engineering, Shinshu University, Japan, 2)Graduate School of Science and Technology, Shinshu University, Japan

SeTB2-7 Monitoring System for Yield Qualities of Paddy
11:00 M. Jahan1, K. Yamamoto1, M. Miyamoto2, N. Kondo1, and Y. Ogawa1
1)Graduate School of Agriculture, Kyoto University, Japan, 2)Yanmar Co., Ltd, Japan

SeTB2-8 Application of Visible-Shortwave Near Infrared Spectrometer to Predict Sugarcane Quality Based on Different Sample Forms
11:15 N. M. Nawi1,2, G. Chen1,2, and T Jensen1,2
1)Faculty of Engineering and Surveying, University of Southern Queensland, Australia, 2)National Centre for Engineering in Agriculture (NCEA), University of Southern Queensland, Australia, 3)Department of Biological and Agricultural Engineering, Faculty of Engineering, Universiti Putra Malaysia, Malaysia

SeTB2-9 Fusion of Image and Laser-Scanning Data in a Large-Scale 3D Virtual Environment
11:30  J.S. Shih, T.T. Lin
Dept. of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taiwan

----- Lunch Break (11:45-13:15) -----

13:15-15:00  SeTB2: Light and Precision Agriculture

13:00  Chair: J. de Baerdemaecker, Division of Mechatronics, Biostatistics and Sensors, MeBioS - KU Leuven, Belgium (Tentative)

SeTB2-10  (Invited) Precision Agriculture Thanks Optical Technology
13:15  Sakae Shibasawa
Tokyo University of Agriculture and Technology, Japan

SeTB2-11  Low Altitude Aerial Remote Sensing and Mobile Ground Measurement
13:45  R. Pudelko, J. Kocyra, and M. B. Walker
Department of Agrometeorology and Applied Informatics, Institute of Soil Science and Plant Cultivation, State Research Institute, Poland

SeTB2-12  Daily Cycle of Spectral Reflectance Characteristics of Different Crops-Case Study of Poland
14:00  J. Kocyra, R. Pudelko, and M. B. Walker
Department of Agrometeorology and Applied Informatics, Institute of Soil Science and Plant Cultivation, State Research Institute, Poland

SeTB2-13  Effects of Microwave on Spinacia Oleracea Growth — Survey of Germination and Long-Term Exposure —
1) Graduate School of Agriculture, Kyoto University, Japan, 2) Research Institute for Sustainable Humanity, Kyoto University, Japan

14:30-15:00  Sponsor Presentation

SeTB-SP-1  NEC Corporation, Japan
14:30

SeTB-SP-2  Murata Manufacturing Co., Ltd., Japan
14:45  ---- Coffee Break (15:00-15:15) -----

15:15-17:00  SeTB3: Light and Bio-sensing

15:30  Chair: S. Chen, Program Committee Member, Department of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taiwan (Tentative)

SeTB3-1  (Invited) Foodborne Pathogenic Bacteria Identification with Hyperspectral Microscope Imaging
15:15  Bosoon Park
United States Department of Agriculture (USDA), USA

SeTB3-2  Mobile Device-Based Optical Instruments for Agriculture
15:45  S. Sunriddetchajorn
Intelligent Devices and Systems Research Unit, National Electronics and Computer Technology Center, Thailand

SeTB3-3  Multiple Leaf Tracking Using Computer Vision Methods with Shape Constraints
16:00  J. De Vylder 1), W. Philips 1), and D. Van Der Straeten 2)
1) Department of Telecommunication and Information Processing, Ghent University, Belgium, 2) Department of Physiology, Ghent University, Belgium

SeTB3-4  Early Detection of Basal Stem Rot in Oil Palm Plantations Using Gamma-Ray Computed Tomography
16:15  J. Abdulllah 1), S. Mohd 1), H. Hassan 1), M. R. Shari 1), M. Mustapha 1), A. A. Mahmood 2), M. R. Ngah 2), and N. H. Hamid 2)
1) Centre for Computed Tomography and Imaging (CCTI), Malaysian Nuclear Agency, Malaysia, 2) FELDA Agriculture Services Sdn Blvd, Malaysia

SeTB3-5  Non-Destructive Prediction of Degreening Rate of Broccoli by Hyperspectral Imaging
16:30  Y. Makino, Y. Kosaka, A. Hosaka, and S. Oshita
Graduate School of Agricultural and Life Sciences, The University of Tokyo, Japan

SeTB3-6  Determination of L-Ascorbic Acid (L-AA) in Terahertz Region Using Back Propagation Artificial Neural Networks (BP-ANN) Method
16:45  D. Suhandy, M. Yulia, S. Widodo, Y. Ogawa, and N. Kondo
Graduate School of Agriculture, Kyoto University, Japan

Thursday, April 25

9:00-16:00  SeTB3: Light and Bio-sensing

9:00  Seiichi Oshita
The University of Tokyo, Japan

SeTB3-7  (Invited) Monitoring of ATP and/or Viable Cells on Meat Surface by Excitation — Emission Matrix Fluorescence Spectroscopy
9:00

SeTB3-8  Estimation of the Dielectric Changes of Detaching Adherent Cells by Terahertz Split-Ring Resonator
9:30  K. Hattori, K. Shiraga, T. Suzuki, Y. Ogawa, and N. Kondo
Graduate School of Agriculture, Kyoto University, Japan

SeTB3-9  Determination of Chlorogenic Acid (CGA) in Different Roast Degree Coffee by Near Infrared (NIR) Spectroscopy
9:45  J. Shan, T. Suzuki, D. Suhandy, Y. Ogawa, and N. Kondo
Graduate School of Agriculture, Kyoto University, Japan

SeTB3-10  Evaluation of the Hydration Effect of Monosaccharides in the Terahertz Region
10:00  K. Shiraga 1), Y. Ogawa 1), N. Kondo 1), A. Irisawa 2), and M. Inamura 2)
1) Graduate School of Agriculture, Kyoto University, Japan 2) ADVANTEST Corporation, Japan
----- Break (10:15-10:30) -----  

Chair: H. Hwang, Program Committee Member, Sungkyunkwan University, Korea (Tentative)  

SeTB3-11 Inspection of Fecal Contamination on Strawberries Using Fluorescence Imaging  
10:30  
Y. K. Chuang 1), S. Chen 1), C. C. Yang 1), M. S. Kim 2), D. E. Chan 2), S. R. Delwiche 3), and Y. M. Lo 4)  
1) Department of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taiwan, 2) USDA-ARS, Beltsville Agricultural Research Center, Environmental Microbial & Food Safety Laboratory, USA, 3) USDA-ARS, Beltsville Agricultural Research Center, Food Quality Laboratory USA, 4) Department of Nutrition and Food Science, University of Maryland, USA.

SeTB3-12 Evaluation of Phalaenopsis Flowering Quality Using Near Infrared Spectroscopy  
10:45  
1) Department of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taiwan, 2) Department of Horticulture and Landscape Architecture, National Taiwan University, Taiwan, 3) Bioenergy Research Center, National Taiwan University, Taiwan, 4) Taiwan Agricultural Mechanization Research and Development Center, Taiwan.

SeTB3-13 Attenuated Total Reflection Terahertz Spectra of Raw Milk for Measuring Somatic Cell Count  
11:00  
H. Naito 1), Y. Ogawa 1), N. Kondo 1), and A. Kubota 1)  
1) Graduate School of Agriculture, Kyoto University, Japan 2) Hokkaido Research Organization Agricultural Research Department, Japan.

SeTB3-14 An Approach for Identification of Vitamin A Deficient Cattle by Pupillary Light Reflex Analysis in Japanese Black Cattle  
11:15  
S. Han 1), N. Kondo 1), T. Fujiura 1), Y. Ogawa 1), S. Tanigawa 1), M. Fukushima 1), O. Watanabe 2), and N. Kohama 1)  
1) Graduate School of Agriculture, Kyoto University, Japan 2) Department of Beef Cattle Production, Hyogo Prefectural Hokkaido Agricultural Institute, Japan.

SeTB3-15 Monitoring Chicken Embryo Development by VIS Transmission Spectroscopy  
11:30  
Md. H. Islam 1), N. Kondo 1), Y. Ogawa 1), T. Fujiura 1), S. Nakajima 2), S. Fujitani 2) and T. Tahara 2)  
1) Graduate School of Agriculture, Kyoto University, Japan 2) NABEL Co. Ltd., Kyoto, Japan

----- Lunch Break (11:45-13:00) -----  

Chair: S. Oshita, Vice Chair of Program Committee, The University of Tokyo, Japan (Tentative)  

SeTB3-16 Optical Coherence Tomography Biospeckle Imaging for Fast Monitoring Varying Surface Responses of A Plant Leaf Under Ozone Stress  
13:00  
L. K. T. Srimal 1), H. Kadono 1), and U. M. Rajagopal 2)  
1) Graduate School of Science and Engineering, Saitama University, Japan, 2) Laboratory for Integrative Neural Systems, RIKEN Brain Science Institute, Japan.

SeTB3-17 Glass Beads Counting by Using Metallic Mesh Sensor in Terahertz Region for Pollen Counting Application  
13:15  
Y. Wang, T. Suzuki, K. Shirara, K. Hattori, Y. Ogawa, and N. Kondo  
Graduate School of Agriculture, Kyoto University, Japan.

SeTB3-18 Hyperspectral Spectroscopy for Monitoring Fungal Contamination in Cereal Grains  
13:30  
U. Siriprataw 1), Y. Makino 2), and S. Oshita 1)  
1) Department of Food Technology, Faculty of Science, Chulalongkorn University, Thailand, 2) Graduate School of Agricultural and Life Science, The University of Tokyo, Japan.

SeTB3-19 In Situ Nondestructive Imaging of Functional Pigments in Micro-Tom Tomato Fruits by Multi Spectral Imaging Based on Wiener Estimation Method  
13:45  
I. Nishidate 1), S. Ooe 1), S. Todoroki 1), and E. Asamizu 2)  
1) Graduate School of Bio-Applications & Systems Engineering (BASE), Tokyo University of Agriculture and Technology, Japan, 2) Graduate School of Life and Environmental Sciences, Gene Research Center, University of Tsukuba, Japan.

SeTB3-20 Development of Noncontact Integrated Egg Quality Measurement System  
14:00  
D.G. Lee 1), S.H. Cho 1), H. Hwang 1), and W.B. Yoon 2)  
1) Department of Biomechatronics, Sungkyunkwan University, Korea, 2) Department of Food Science and Biotechnology, Kangwon National University, Korea.

----- Break (14:15-14:30) -----  

Chair: B. Park, Program Committee member, United States Department of Agriculture (USDA), USA (Tentative)  

SeTB3-21 Multichannel Microfluidic Chip for Rapid and Reliable Trapping and Imaging Plant-Parasitic Nematodes  
14:30  
R. Amrit 1), S. Pormtheeraphapat 1), W. Sripunkhakh 2), W. Jeamsaksiri 2), N. Tangchitsomkit 2), and B. Satapun 2)  
1) Photonics Technology Laboratory, National Electronics and Computer Technology, Thailand, 2) Thai Microelectronic Center, National Electronics and Computer Technology, Thailand.

SeTB3-22 Measuring the Key Shape Features of Onion Bulbs Using 2-D and 3-D Images  
14:45  
W. Wang, and C. Li  
College of Engineering, University of Georgia, USA.

SeTB3-23 Detection of Escherichia Coli Deposited on a Filter Using Metallic Mesh Sensor
15:00  T. Suzuki¹, Y. Ogawa¹, N. Kondo¹, T. Kondo², and S. Kamba²
¹ Graduate School of Agriculture, Kyoto University, Japan ² Murata Manufacturing Company, Japan

SeTB3-24 Apple Ripeness Detection Using Hyperspectral Laser Scatter Imaging
Division of Mechatronics, Biostatistics and Sensors, MeBioS - KU Leuven, Belgium

SeTB3-25 Spatially Resolved Spectroscopy for Nondestructive Quality Measurements of Braeburn Apples
15:30  N. Nguyen Do Trong¹, C. Erkinbaev¹, B. Nicolai¹, W. Saeyes¹, M. Tsuta¹², and J. De Baerdemaeker¹³
¹ Division of Mechatronics, Biostatistics and Sensors, MeBioS - KU Leuven, Belgium, ² National Food Research Institute, Tsukuba, Ibaraki, Japan, ³ Graduate School of Agriculture, Kyoto University, Japan

SeTB3-26 Broadband Photon Time of Flight Spectrometer for Characterization of Food and Pharmaceutical Products
15:45  D. Khoptyar¹, A. A. Subash¹, O. H. A. Nielsen², S. Johansson¹, and S. Andersson-Engels³
¹ Department of Physics, Lund University, Sweden, ² DTU Informatics, Department of Informatics and Mathematical Modeling, Technical University of Denmark, Denmark

16:00-16:05 Closing  Room 311+312

Closing Remarks
16:00  Y. Ogawa, Program Committee Chair of SeTBio'13
Professor, Graduate School of Agriculture, Kyoto University, Japan