



2019 International Symposium on Environment Control Technology for Value-added Plant Production (ECTV2019)

Huwan Hotel in Hot Spring Leisure City, Beijing, China, 27-30 Aug., 2019

Symposium Notification

The protected horticultural production, as an emerging industry, improves people's livelihood and future economic growth. In order to enhance information exchange between domestic and international in academic & technologies areas to achieve more on industry application and university research collaboration, the 2019 International Symposium on Environmental Control Technology for Value-added Plant Production will be held in Beijing from 27 to 30 Aug., 2019. The world-renowned scholars have been invited to discuss the usage of environmental control technologies to achieve value-added plant production for high yield and high efficiency, clean environmental protection and eco-intelligent engineering technology. The 2019 China Protected Agriculture Industry Conference will be held concurrently. Professionals and industry representatives are welcome to attend both international and national conferences and submit the proceeding papers. The outstanding manuscripts will be submitted to International Journal of Agricultural and Biological Engineering (IJABE), China Vegetables, Vegetables, Greenhouse Horticulture, or Agricultural Science and Engineering in China for publication. The detailed meeting information is as follows:

Symposium Organizer

Hosted by China Agricultural University and Japan Plant Factory Association

Organized by Key Lab. Agric. Eng. in Structure and Environment, Ministry of Agric. and Rural Affairs, China

Supported by National Key Research and Development Projects of "R&D and Its Application Demonstration of LED Lighting in Protected Horticultural Production" (2017YFB0403900) and "In-situ Nutrient Monitoring and Fertigation Technology and Equipment" (2017YFD0201500), China Solid State Lighting Alliance

Time and Venue

27 to 30 Aug., 2019 in Huwan Hotel in Hot Spring Leisure City, Beijing, China

Session Topics and Invited Speakers

Aug. 28, 08:30-12:00 Opening Ceremony and Keynote Presentation (Gold Room in 2F)

08:30-09:00 Opening Ceremony (Speeches of Industry Leaders and Invited Guests)

09:00-09:40 SS-01 Academician and Prof. Chunjiang Zhao (National Engineering and Technology Center for Information Agriculture)

Current Situation and Perspective of Smart Protected Agriculture

09:40-10:20 SS-02 Prof. Tadashi Takakura (Institute for Rural Engineering, NARO / The University of Tokyo, Japan)

Greenhouse Environment Control over the Last 50 Years Based on My Research

10:20-11:00 SS-03 Prof. Fei Qi, Academy of Agricultural Planning and Engineering, Ministry of Agriculture and Rural Affairs, China

Towards the New Era from Historical Review - Development and Changes of China



Greenhouse Industry in the Past 40 Years

- 11:00-11:40 SS-04** Prof. Toyoki Kozai (Japan Plant Factory Association / Chiba University, Japan)
Perspective of Sustainable Plant Factory with Artificial Light
- 11:40-12:00 SS-05** Mr. Wei Li, Policy Planning Office, Agricultural Mechanization Management
Department, Ministry of Agriculture and Rural Affairs, China
Introduction of National Financial Subsidies Policy of Agricultural Machinery Purchase in
Protected Agriculture

Aug. 28, 14:00-17:30 SE Session 1: LED Light Physiology (75# Room in 1F)

- 14:00-14:40 SE01-01** Prof. Jinquan Yu (Zhejiang University)
Research Progress on LED Light Environmental Physiology of Greenhouse Crop
- 14:40-15:20 SE01-02** Prof. Leo Marcelis (Wageningen UR, The Netherlands)
Full Control of Plant Growth and Quality by LED Light
- 15:20-15:30 Coffee Break**
- 15:30-16:10 SE01-03** Prof. Hiroshi Shimizu (Kyoto University, Japan)
Effect of Alternating Irradiation of Red and Blue Light on Growth Promotion of Leaf Lettuce
(*Lactuca sativa* L. 'Greenwave')
- 16:10-16:50 SE01-04** Assoc. Prof. Jie He (Nanyang Technological University, Singapore)
Impacts of LED Quality on Leafy Vegetables: Productivity Closely Linked to Photosynthetic
Performance or Associated with Leaf Traits?
- 16:50-17:10 SE01-05** Dr. Zhengnan Yan (China Agricultural University / Qingdao Agricultural University)
Growth and Energy Use Efficiency in Two Lettuce Cultivars as Influenced by White Plus Red
vs. Red Plus Blue LEDs
- 17:10-17:30 SE01-06** Assoc. Prof. Yuxin Tong (Institute of Agricultural Environment and Sustainable
Development, Chinese Academy of Agricultural Science)
Lettuce Growth, Photosynthetic Performance and Light Energy Use Efficiency as Affected by
Different Combinations of LED Light Wavelength in a Plant Factory

Aug. 28, 14:00-17:30 SE Session 2: Strawberry Efficient Production (76# Room in 1F)

- 14:00-14:40 SE02-01** Prof. Changhoo Chun (Seoul National University, Korea)
Current Situations of Korean Strawberry Industry and Strawberry Transplant Propagation by
Using Plant Factory Technology
- 14:40-15:20 SE02-02** Prof. Toru Maruo (Chiba University, Japan)
Breeding Status of Seed-propagating Type Strawberry Cultivar in Japan and Its Significance in
Strawberry Production
- 15:20-15:30 Coffee Break**
- 15:30-16:10 SE02-03** Mr. Tim Crossman (Haygrove Ltd., UK)
Global Development and Innovation in High-Value Strawberry Growing form 1985 to 2025
- 16:10-16:40 SE02-04** Dr. Xinxian Li (Research Center of Japan Aohata Corporation)
Producing the Strawberry Virus-free Nursery in California and Japan, and Practicing in China



- 16:40-17:05 SE02-05** Mr. Zhanzhao Xi (Shanxi Womeiyuan Agricultural Technology Company)
Integrated Technology of Strawberry Elevated Substrate Cultivation
- 17:05-17:30 SE02-06** Mr. Jianfeng Zheng (China Agricultural University)
A New and Efficient Propagation Method for Strawberry Seedlings Based on Cuttings of New Runner Plantlets

Aug. 28, 14:00-17:00 SE Session 3: Greenhouse Future (Gold Room in 2F)

- 14:00-14:40 SE03-01** Prof. Yoshiaki Kitaya (Osaka Prefecture University)
Plant Factories Aiming at Recycling Material and Effectively Using Energy
- 14:40-15:20 SE03-02** Prof. Kotaro Takayama (Ehime University)
High-resolution Plant Data for Greenhouse Agricultural Production
- 15:20-15:30 Coffee Break**
- 15:30-15:55 SE03-03** Mr. Fulco M. Wijdooge (Ridder Group in China, The Netherlands)
Future of Horticulture: Turning Data into RMB
- 15:55-16:20 SE03-04** Prof. Zhiding Huang (China Agricultural University)
Future Direction of Horticultural Engineering and Greenhouse Industry in China though the Past 40 Years
- 16:20-16:45 SE03-05** Mr. Marco Brok (Beijing Gold Scorpion Bioelectronics Technology Co., Ltd)
Analysis of Investment Model of Supplemental Lighting in Greenhouse
- 16:45-17:00** Signing Ceremony of Scientific and Technological Cooperation between Key Laboratory of Agricultural Engineering in Structure and Environment in Ministry of Agriculture and Rural Affairs, China and Jilin Academy of Vegetable and Flower Sciences

Aug. 29, 8:00-12:00 SE Session 4: Value-added Plant Production (75# Room in 1F)

- 08:30-09:10 SE04-01** Prof. Eiji Goto (Chiba University, Japan)
R&D and Practical Application of Environment Control Technology for High Value-Added Plant Production in a Plant Factory
- 09:10-09:50 SE04-02** Prof. Genhua Niu (Texas A&M University, USA)
Enhancing Nutritional Value of Leafy Greens through Manipulating Light Quality
- 09:50-10:30 SE04-03** Prof. Myung-min Oh (Chungbuk National University, Korea)
Enhancement of Phytochemicals in Kale through UV-A Radiation and Chilling
- 10:30-10:40 Coffee Break**
- 10:40-11:00 SE04-04** Dr. Na Lu (Chiba University, Japan)
Growth and Secondary Metabolites Accumulation of Lettuce (*Lactuca sativa* L.) as Affected by Light Cycles in a Plant Factory
- 11:00-11:20 SE04-05** Dr. Yongsan Cheng (China Agricultural University / Shanxi Agricultural University)
Effects of Short Light/dark Cycle on Photosynthetic Pathway Switching and Growth of Medicinal *Dendrobium officinale* Using Aeroponic Cultivation
- 11:20-11:40 SE04-06** Dr. Nguyen Thi Quynh (Institute of Tropical Biology, Vietnam Academy of Science and Technology)



Light Effect on Growth of Some Medicinal Plant Species Cultured in Vitro

11:40-12:00 SE04-07 Mr. Jin Zhu (SunScape Inc., USA)
CBD Industry Practice in USA and its Key Technologies in Indoor Farming of Hemp

Aug. 29, 8:00-12:00 SE Session 5: LED Measurement Guidelines (76# Room in 1F)

08:30-09:00 SE05-01 Prof. Kazuhiro Fujiwara (The University of Tokyo, Japan)
Introduction of a Performance Description Sheet for Plant Cultivation LED Luminaires

09:00-09:30 SE05-02 Assoc. Prof. Neil Mattson (Cornell University, USA)
Greenhouse Lighting and Systems Engineering (GLASE) - A Model to Increase LED Adoption in Controlled Environments

09:30-10:00 SE05-03 Prof. Dongxian He (China Agricultural University)
A Comprehensive Performance Test System of LED Lighting for Plant Growth

10:00-10:30 SE05-04 Dr. Wei Zhang (National Lighting Test Centre)
International Standardization Activities on Horticultural Lighting

10:30-10:40 Coffee Break

10:40-11:20 SE05-05 Prof. Wei Fang (Taiwan University)
Do We Need to Mimic the Sunlight to Grow Purple Oak Leaf Lettuce in PFAL

11:20-11:40 SE05-06 Dr. Eri Hayashi (Japan Plant Factory Association)
Artificial Intelligence & Phenotyping-based Smart PFALs for Environmental Control and Breeding

11:40-12:00 SE05-07 Mr. Yuanhao Chen (The University of Tokyo)
Phosphor-converted White LED Evaluation Based on Dry Weight Increment, Leaf Net Photosynthetic Rate, and Light Source Energy Consumption

Aug. 29, 14:00-17:30 SE Session 6: Plant Factory Industrialization (75# Room in 1F)

14:00-14:40 SE06-01 Prof. Qichang Yang (Institute of Urban Agriculture, Chinese Academy of Agricultural Science)
Progress on Improving Energy Utilization Efficiency of Plant Factory with LED Light in China

14:40-15:20 SE06-02 Prof. Erik Runkle (Michigan State University, USA)
Considerations for Including Far-red Radiation in an Indoor Plant Lighting Spectrum

15:20-15:30 Coffee Break

15:30-16:10 SE06-03 Prof. Hiroyuki Watanabe (Tamagawa University, Japan)
'LED Farm' – A Business Model of Plant Factory Using LEDs as a Lighting Source for Plants

16:10-16:30 SE06-04 Dr. Huafang Zhou (AEssense Corp., USA)
Technological Innovation of the Intelligent Plant Factory and Industrialization Study

16:30-16:50 SE06-05 Dr. Katashi Kai (Shinnippou Ltd., Japan)
Data-driven Operations of Large-scale PFALs towards Smart 808 Factories

16:50-17:10 SE06-06 Prof. Zengchan Zhou (Beijing Agricultural Machinery Institute)
Design and Application of LED Plant Factory in Romania

17:10-17:30 SE06-07 Mr. Kazuya Uraisami (Japan Plant Factory Association)
How to Integrate and to Optimize Productivity for a Successful Business at PFALs



Aug. 29, 14:00–17:30 SE Session 7: Hydroponic Technology (76# Room in 1F)

- 14:00-14:40 SE07-01** Prof. Yutaka Shinohara (Japan Plant Factory Association)
Nutrient Solution Controller, - Concept and Future Goal –
- 14:40-15:20 SE07-02** Prof. Wim Voogt (Wageningen UR, The Netherlands)
Maximizing the Nitrogen Use Efficiency in Long Term High Yielding Soilless Grown Tomato
- 15:20-15:30 Coffee Break**
- 15:30-16:00 SE07-03** Prof. Gang Xu (Institute of Vegetables, Jiangsu Academy of Agricultural Sciences, China)
Research and Application of Soilless Cultivation in Jiangsu Province, China
- 16:00-16:40 SE07-04** Assoc. Prof. Joseph Masabni (Texas A&M AgriLife Extension Service, USA)
Status of Aquaponic and Hydroponic Industry in the United States
- 16:40-17:10 SE07-05** Dr. Jinxiu Song (China Agricultural University / Jiangsu University)
An Estimating Method based on Ionic Activity of Ionic EC Contribution Percentage and EC of Nutrient Solution
- 17:10-17:30 SE07-06** Miss Faxinwei Li (Jilin University, China)
Effect of Mn²⁺ Concentration of Nutrient Solution on Growth and Nitrate Nitrogen Content in Lettuce under Cherry Radish Intercropping Aeroponics

Professional Tours

2019 International Horticultural Exhibition in Beijing (<http://www.horti-expo2019.com/>) including greenhouse facility, new cultivation mode, LED plant factory, hydroponic production of leafy vegetables, greenhouse production of floricultural crops.

Participants

Professionals, practitioners, graduate and undergraduate students in horticulture engineering and horticulture from scientific research institutes, enterprises and institutions, financial investment, agricultural technology promotion

Registration

- 1) Participants are required to register in advance using the website or WeChat. The conference fee is 2000 RMB\$ per person and the student representative is 1000 RMB\$. Accommodation will be arranged by the conference services group (see contact information below) and the travel and accommodation expenses will be paid by the participants themselves. To simplify the check-in procedure, please send the conference fee to the following account by bank remittance or electronic transfer in advance. You can also pay by cash, swipe cards, and WeChat.

Account Name: Beijing Huinong Information Consulting Co. Ltd.

Bank Name: Agricultural Bank of China Beijing Branch

Account Number: 11-040101040015842

- 2) Participants must send a "meeting return form" to ssnyfh@vip.163.com
- 3) No pick-up will be arranged for participants. Please refer to the traffic guide to go to the venue on your own.

Contact Information



Attendees Contact:

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Attachment: Transportation Guide for Huwan Hotel in Hot Spring Leisure City, Beijing

北京市温都水城湖湾酒店的交通指南



Beijing Airport to the Hotel:

➤ **By Bus**

Take bus line No. 8 in airport to terminus which is Hot Spring Leisure City, walk 900 meters to the hotel.

➤ **By Taxi**

It is about 35 km away, takes about 1 hour by taxi, from Beijing Airport to Hot Spring Leisure City. The taxi fee is about 100 RMB\$.

