

# 2023 International Symposium on Agricultural Net-Zero Carbon Technology and Management Innovation

**Date: Wednesday, September 6, 2023**

**Venue: 1F, College of Agriculture Building, National Taiwan University, Taipei, Taiwan**  
(國立臺灣大學 農業綜合大樓 一樓，農經大講堂)

## 1. Background:

To support the “2050 Net-Zero Transition” and “5+2 Industrial Innovation Plans” in Taiwan, this Symposium aims to exchange the up-to-date information regarding policies, action plans, and demonstration projects on agricultural net-zero. The purposes of this Symposium are (1) to exchange innovative policy tools, research frameworks, methodologies and technologies of agricultural net-zero systems, (2) to identify the future collaborative directions on agricultural net-zero systems, and (3) to foster the exchange and dissemination of state-of-the-art agricultural net-zero research among researchers, educators, and practitioners.

## 2. Symposium Themes:

A broad range of topics will be covered in the Symposium, which is divided into two themes:

### (1) Policies and Action Plans on Net-Zero Agriculture

- Policy Implementation and Roadmaps
- Nature-based Solutions and Negative Carbon Emission Strategies
- Role of Smart technology on Net-Zero Agriculture

### (2) Advanced Technologies Toward Agricultural Net-Zero

- Integration with CO<sub>2</sub> Capture and Utilization
- Biowaste Valorization Technology (Value-added Product Recycle for a Circular Economy)
- Food-Energy-Water Nexus for Net-Zero Agriculture
- Smart technology on Net-Zero Agriculture

## 3. Advisory Organization:

- Ministry of Agriculture, Taiwan ROC

## 4. Hosted Organization:

- Agricultural Net-Zero Carbon Technology and Management Innovation Research Center, National Taiwan University, Taiwan ROC

## 5. Sponsor:

- College of Bioresources and Agriculture, National Taiwan University
- The Office of Sustainability, National Taiwan University

- Department of Bioenvironmental Systems Engineering, National Taiwan University

## 6. Organizing Committees:

### (1) International Committees

- Huu Hao Ngo (Australia)
- Yutaka Matsuno (Japan)
- Taira Hidaka (Japan)
- Jin-Yong Choi (South Korea)
- Sang-Hyoun Kim (South Korea)
- Seung-Oh Hur (South Korea)
- Sovik Das (India)

### (2) Local Committees

- Chia-Hsuan Chen (MOA, Taiwan ROC)
- Yu-Pin Lin (NTU, Taiwan ROC)
- Pei-Te Chiueh (NTU, Taiwan ROC)
- Hwa-Lung Yu (NTU, Taiwan ROC)
- Tsang-Jung Chang (NTU, Taiwan ROC)
- Yo-Jin Shiau (NTU, Taiwan ROC)
- Chihhao Fan (NTU, Taiwan ROC)
- Shu-Yuan Pan (NTU, Taiwan ROC)
- Po-Chih Tseng (NTU, Taiwan ROC)

## 7. Registration:

- Link: <https://reurl.cc/dDN7vk>
- QR Code



## 8. Contact Persons:

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## 9. Agenda:

Time	Contents
09:00–09:13	<p style="text-align: center;"><b><u>Opening Remarks</u></b></p> <ul style="list-style-type: none"> <li>• <b>Director General Lao-Dar Juang</b> (Ministry of Agriculture, Taiwan ROC)</li> <li>• <b>Professor Yu-Pin Lin</b> (Dean, College of Bioresources and Agriculture, National Taiwan University)</li> <li>• <b>Professor Hwa-Lung Yu</b> (Chairman, Department of Bioenvironmental Systems Engineering, National Taiwan University)</li> </ul>
09:13–09:15	Group Photo Time
<p><b>Plenary Session: Policies and Action Plans on Net-Zero Agriculture</b></p> <p style="text-align: right;"><b>Moderator: TBC</b> (College of Bioresources and Agriculture, National Taiwan University)</p>	
09:15–09:45	<p><b><u>Keynote Speech</u></b> Net-zero Emissions and Sustainable Strategies in Taiwan’s Agriculture Sector <b>Director General Lao-Dar Juang</b> (Department of Resources Sustainability, Ministry of Agriculture, Taiwan ROC)</p>
09:45–10:15	<p><b><u>Keynote Speech</u></b> Agricultural Net-Zero Emission Policies and Practices: the Australian Experience <b>Professor Huu Hao Ngo</b> (University of Technology Sydney, Australia)</p>
10:15–10:30	<b>Coffee Break</b>
<p><b>Session: Advanced Technologies for Agricultural Net-Zero (I)</b></p> <p style="text-align: right;"><b>Moderator: TBC</b> (National Taiwan University, Taiwan)</p>	
10:30–11:00	<p><b><u>Keynote Speech</u></b> The Role of Smart Farming for Agricultural Net-Zero Emission in Japan <b>Professor Yutaka Matsuno</b> (Department of Environmental Management, Kindai University, Japan)</p>
11:00–11:30	<p>Negative Agriculture Research Center at National Taiwan University <b>Professor S-L Wang</b> (National Taiwan University, Taiwan)</p>
11:30–12:00	<p><b><u>Invited Speech</u></b> Anaerobic Digestion and Biohydrogen Production from Korean Agricultural Waste Biomass <b>Professor Sang-Hyoun Kim</b> (Department of Civil and Environmental Engineering, Yonsei University, South Korea)</p>
12:00–13:30	<b>Lunch</b>

Time	Contents
<p><b>Session: Advanced Technologies for Agricultural Net-Zero (II)</b>  <b>Moderator: Professor Pei-Te Chiueh</b>  (Associate Director / CEO, Office of Sustainability, National Taiwan University)</p>	
13:30–14:00	<p><b><u>Keynote Speech</u></b>  Smart Water Management and Carbon Mitigation Evaluation Tool (Water-Food-Energy-Carbon Nexus) for Net-Zero in Korea  <b>Professor Jin-Yong Choi</b> (Department of Rural Systems Engineering, Seoul National University, Korea)</p>
14:00–14:20	<p>Toward Sustainable Use of Algal Biochar for Sustainable Water Treatment  <b>Professor Chengdi Dong</b> (Department of Marine Environmental Engineering, National Kaohsiung University of Science and Technology, Taiwan)</p>
14:20–14:50	<p><b><u>Invited Speech</u></b>  Regional Resource and Energy Circulation by Anaerobic Digestion of Sewage Sludge: Current Status in Japan and Research Challenges  <b>Professor Taira Hidaka</b> (Kyoto University, Japan)</p>
14:50–15:10	<p style="text-align: center;"><b>Coffee Break</b></p>

Time	Contents
<p><b>Session: Advanced Technologies Toward Agricultural Net-Zero (III)</b></p> <p style="text-align: right;"><b>Moderator: Professor Chihhao Fan</b> (Department of Bioenvironmental Systems Engineering, National Taiwan University, Taiwan)</p>	
15:10–15:40	<p><b><u>Invited Speech</u></b> Utilization of Net-Zero and Water-Energy-Food Nexus Tools for Agricultural Policy: The Korean Experience <b>Professor Seung-Oh Hur</b> (National Institute of Agricultural Sciences, Korea)</p>
15:40–16:00	<p>The Sustainable Biorefinery Platform of Value-Added Biomolecules from Brewing Wastes within Supporting Circular Economy <b>Professor Chi-Wei Lan</b> (Chemical Engineering and Materials Science, Yuan Ze University, Taiwan)</p>
16:00–16:30	<p><b><u>Invited Speech</u></b> Anaerobic Digestion of Waste Biomass and Agriculture: Policies and Action Plans in India <b>Professor Sovik Das</b> (Department of Civil Engineering, Indian Institute of Technology (IIT) Delhi, India)</p>
16:30–16:50	<p>Water-based Synthesis of Metal-Organic Frameworks (MOFs) Derived Catalysts for Lignocellulosic Biomass Conversion <b>Professor Kevin C.-W. Wu</b> (Department of Chemical Engineering, National Taiwan University, Taiwan)</p>
16:50–17:00	<p style="text-align: center;"><b><u>Concluding Remarks</u></b> <b>Professor Chihhao Fan</b> (Department of Bioenvironmental Systems Engineering, National Taiwan University, Taiwan)</p>