

2026

6.3 (wed.)

12:10
12:50

12:10-12:15

◆ Introduction

12:15-12:40

◆ Seminar
(Presentation)

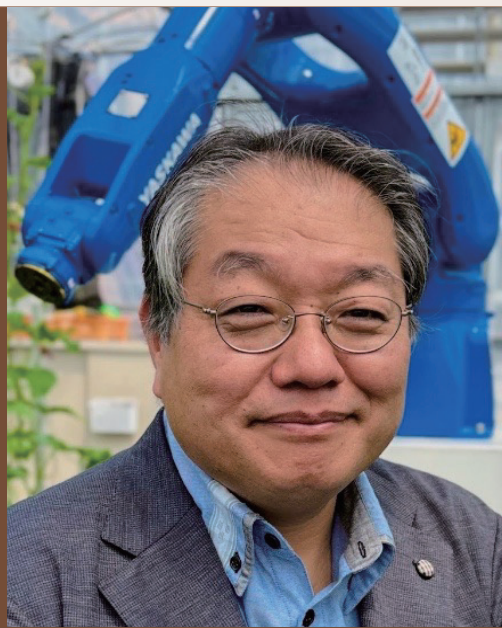
12:40-12:50

◆ Q&A

Online
(Zoom)Scan here for
Registration ▶▶https://us02web.zoom.us/webinar/register/WN_hMimj_KESzi7Xae-oNVA4Q

Supported by Kyushu University, Q-AOS

Can we create plant sensing technology that can replace the eyes of farmers?

**Key Words****High-throughput plant phenotyping**

Machine vision

AI

Digital twins

Data-driven agriculture

Professor **Takashi OKAYASU**

Faculty of Agriculture Department of Agro-environmental Sciences, Kyushu University

I am from Aichi Prefecture. I graduated from the Graduate School of Agriculture, Kyushu University in March 1999 as a Ph.D. I served as a part-time lecturer at the Venture Business Laboratory of this university and an academic researcher at Faculty of Agriculture, and then as an associate professor at the Graduate School of Agriculture in January 2002. In April 2022, I was promoted to professor, and in the same month, I was appointed as a specially appointed professor (cross-appointment) at the loP Co-creation Center, Kochi University. My main research topics include the design and development of data-driven agricultural technologies and agricultural machinery, as well as the application of computational mechanics to the field of agricultural systems engineering. I am also working on several research projects related to data-driven agriculture and the application of computational mechanics. I have published more than 270 research papers, including in domestic and international academic journals and international conference proceedings, and have contributed to the publication of 9 books as a co-author. I have given more than 80 lectures as keynote speeches, and invited and special lectures.

As the primary farmers age, the transfer of the "experience and intuition" of skilled farmers becomes a challenge. Therefore, the development of plant sensing technology to replace farmers' "eyes" is attracting attention. At the core of this technology is "high-throughput plant phenotyping technology" utilizing AI and robotics. Autonomous robots automatically collect plants growth images, and AI accurately extracts information such as the number, condition, and growth of plant body. Furthermore, 3D image reconstruction technology is being used to measure plant features with even greater precision. To further improve the performance of these technologies, the application of "digital twins" is also beginning. We believe that if we can replace the visual judgment of skilled farmers with digital technology, we can further advance data-driven agriculture.