The Institution of Engineers, Malaysia

WEBINAR TALK ON

AIXIOT APPLICATION IN AGRICULTURE: DEEP LEARNING SYSTEM DEVELOPMENT TO BRIDGE PRECISION AGRONOMICS TO SMART AGRICULTURAL SPACE

OrganAgricultural and Food Engineering Technical Division , AFETD, IEM

18th June 2025, Wednesday
10am - 12noon

ZOOM PLATFORM

Speaker :

Assoc. Prof. Tofael Ahamed
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University of Tsukuba, Japan

REGISTRATION

IEM STUDENT: FOC
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About The Talk

Smart agricultural technology opens opportunities to enhance agricultural production from outdoor to indoor crop cultivation systems, orchard management, non-destructive quality assessment in poultry production, and many other domains. The focus of this talk is on the integration of our research, which has been conducted over the years, to bridge precision agronomics with the emerging field of smart agricultural space. The application of state-of-the-art technologies is explored for enabling autonomous navigation in fields and facilitating the detection and management of disease infestations from orchards to greenhouses, which is essential for ensuring food safety.

The overall talk highlights the development of AI-based deep learning systems to enable intelligent digital farming in the smart agriculture space, covering a wide range of applications from outdoor to indoor production systems. In the autonomous unit, research on weeding robots, spraying robots, and harvesting robot development has been carried out to address labor shortages while improving productivity through minimum human intervention. Furthermore, this webinar elucidates the application of a deep learning system for inferencing disease detection in fruit crops and leafy vegetables across various stages, from pre-harvest to post-harvest levels, and post-harvest efficiency evaluations in poultry production. highlighting the versatility of these technologies. Finally, advanced agricultural research, along with educational contributions and outreach contributions, is emphasized as evidence of our efforts to advance precision agronomics within the smart agricultural space.

Speaker's Profile

Tofael Ahamed is an Associate Professor at the Institute of Life and Environmental Sciences, University of Tsukuba, a leading research university in Japan. Tofael also has teaching and research experiences as a Lecturer, Assistant Professor, and Associate Professor. He performs research in the field of precision agriculture technology, agricultural robotics, and decision support systems.

He is also serving as one of the Associate Editors for Computer and Electronics in Agriculture (Elsevier), Agricultural Information Research (JSAI), and Editorial Member for Asia-Pacific Journal of Regional Science (Springer-Nature). Tofael has published in journals such as 'Computers and Electronics inAgriculture', 'Biosystems Engineering', 'Transactions of ASABE', Sensors, Remote Sensing and Japanese Society of Agricultural Machinery and Food Engineering (JSAM). Tofael is actively collaborating with International Research Institutes and Universities from Japan and abroad. Tofael also recognized as one of the best faculty members for 2016 and 2022 at the University of Tsukuba, Japan for his outstanding contributions to research, education, university management and social contributions