Toyoki Kozai (PhD)

Japan Plant factory Association, Kashiwa-no-ha, Kashiwa, Chiba 2770882, Japan
kozai@faculty.chiba-u.jp
http://npoplantfactory.org/english.html

Dr. Kozai obtained a BSc in Horticulture from Chiba University and a PhD degree in Agricultural Engineering from the University of Tokyo. When he started his academic career in 1973 as an agricultural engineer, his work was focused on greenhouse environment control engineering. After establishing his early work on greenhouse light environments, energy savings, ventilation, computer control, knowledge engineering, closed systems with artificial lighting in the fields of greenhouse horticulture, his scientific interest was extended to in vitro environments under artificial light and their control for sugar-free (photoautotrophic) medium micropropagation. Recently, he has been working hard on plant factory with artificial lighting (or indoor/vertical farming)

After serving as Dean of Faculty of Horticulture and Director of Center for Environment, Health and Field Sciences, he was inaugurated as the president of Chiba University in 2005. He was back in research, education and extension as a professor emeritus in an endowed chair position at the Center for Environment, Health and Field Sciences, Chiba University in 2009, with a special focus on medicinal plant production under controlled environments.

Since 2010, he has been working as the president of Japan Plant Factory Association (non-profit organization) and is leading R & D of "plant factory with artificial lighting (PFAL)" and "integrative environment control of greenhouses" using heat pump, fogging and null-balance CO_2 enrichment systems. He is also serving as the President of The Agricultural Academy of Japan since 2014, and many others.

Award: Friendship award from Chinese Government (2002)**,** Lifetime Achievement Award (2009) from Society of In Vitro Biology, USA. The 2002 Purple Ribbon Award from Japanese Ministry of Education, Culture and Sports. Japan Prize of Agricultural Sciences from Association of Japanese Agricultural Scientific Societies, and many others.

Publications: He has published in English more than 200 refereed papers and more than 50 book chapters and more than 10 books in English, including "**Plant Factory: an indoor vertical farming system for efficient quality food production'** published in 2015 by Academic Press, and '**LED lighting for Urban Agriculture**' published in November 2016 by Springer. A new book on **smart plant factory** is scheduled to be published in 2018 from Springer.

Selected Keynote Lectures at International Conferences Overseas in 2017

1) Kozai, T. 2017. LED Lighting for Urban Agriculture - Efficient Use of Closed Plant Production System (CPPS) with LEDs- International conference on controlled environment agriculture (ICCEA 2017). Panama city. Panama, May 17-19.
2) Kozai, T. 2017. Smart plant factory with LED lighting – Opportunities and challenges-. XIX International Botanical Congress, Shenzhen, China, July 20-24.
3) Kozai, T. 2017. Smart plant factory: Challenges and Opportunities. International Conference on Intelligent Agriculture, Changchun, China, August 13-15.
4) Kozai, T. 2017. Smart plant factory with LED lighting. GreenSys 2017. Beijing. China, August 20-24.