



JPFA's Famed Introductory Training Course on Plant Factories with Artificial Lighting (PFALs)

Oct. 8-Nov. 2, 2020

Learn Online This Year!

Special Features Will Excite You. Apply now!



2020.9.25

The coronavirus disease (COVID-19) outbreak this year has forced the Japan Plant Factory Association (JPFA) to give up running its renowned Introductory Training Course on Plant Factories with Artificial Lighting (PFALs) as usual since JPFA gives top priority to the safety of prospective attendees.

However, JPFA is offering the course online in October in response to requests from indoor farmers, researchers and future entrepreneurs in the exciting and emerging field of PFALs, also known as vertical farms.

Since 2010, JPFA and Chiba University have organized various in-depth and practical learning events, including introductory and advanced courses. This introductory course in English scheduled for Oct. 8-Nov. 2 will cover what you need to know before or after starting the PFAL business or research.

LECTURES, VIRTUAL TOURS, EXHIBITIONS, INTERACTIVE OPPORTUNITIES and MORE!

The course will have academic and practical classes on such topics as the structure and functions of PFALs, environmental control, lighting, plant physiology, nutrient solutions, seedlings, the latest technologies for next-generation PFALs and business case studies on commercial large-scale PFALs.

In addition to lectures by academic professionals and representatives of PFAL operators, attendees can enjoy virtual tours to some commercial-size PFALs and exhibitions by PFAL companies.

All lectures are prerecorded ones, but attendees can send any questions via the specified app. Their questions will be the key to a live Q&A session that we will hold online. The Q&A session will certainly be one that you do not want to miss!

Never forget another important thing. While attendees cannot get together as in on-site courses, the app has a great feature that allows them to interact each other and with representatives of exhibitors, which include Japanese leading companies in the field.

On completion of the course, we can issue a certificate of participation, if you need.

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1. Objective and Goal

-To offer the foundation for theory and experience-based practices, with a view to fostering academic and industrial development of next-generation PFALs.

-To facilitate development and dissemination of technically and economically sustainable PFALs, by providing first-hand technical and conceptual classes by a variety of professionals in practice in both academia and the PFAL industry.

2. Lecturers and Program

■Lecturers:

Chiba University / JPFA : T. Kozai, Y. Shinohara, T. Maruo, S. Tsukagoshi, N. Lu, O. Nunomura and E. Hayashi

The Ohio State University : C. Kubota

Lecturers from the PFAL industry : Representatives from 808 Factory and other companies

■Scheduled Program

	Class Unit	Topics
General	Current global situation	Plant factories with artificial lighting (PFALs) in the world
	Current PFALs	Current cultivation systems and protocols, the characteristics of LEDs, issues that remain to be solved and/or improved
	Meanings of basic technical terms for understanding the lectures	Units of photon (mol) and energy (J or kWh), photosynthetic photon efficacy of LEDs, PPF (photosynthetic photon flux density), EC (electric conductivity), VPD (vapor pressure deficit), net photosynthetic and transpiration rates, etc.

	Environment and sanitary control units	Layouts and functions of facilities in cultivation rooms, environment and sanitary control units, improvement of light energy use efficiency and light distribution
Environmental effects on plant physiology and growth	Photosynthesis, respiration and transpiration of plants	The basics of photosynthesis, respiration and transpiration, effects of environmental factors on photosynthesis, etc.
	Light environment and plant growth	The effects of a light environment on plant growth and quality of produce
Nutrient solution in hydroponics	Plant nutrition related with nutrients and water uptake	The uptake of nutrients and water, and transpiration functions of water and nutrition in plants, physiological disorders and avoidance methods
	Basis of hydroponic cultivation	Nutrient solution composition and management, typical physiological disorders such as tip burn
Cultivation production	Cultivation management (seeding to precooling)	Seeding, transplanting, harvesting, post-harvest processing, precooling
Forthcoming technologies		Phenotyping, artificial intelligence, time shift lighting, automation/robots, renewable energy use, breeding of plants suited to PFALs
Business	Starting PFAL/vertical farming business	For sustainable PFAL business, reduction of running costs, production of high-value plants, marketing and creation of business models
Virtual Tour		We are planning virtual PFAL tours.
Q&A Session		Some of the lecturers will discuss questions sent by participants after watching lecture videos.

(The schedule is subject to change without notice.)

■Networking Opportunities - JPFA Training App

The JPFA Training app will be used to maximize networking opportunities.

After the registration, you will receive a dedicated email one day before the start of the training, which uses Swapcard. The JPFA training app will be available on the desktop, and you will also be able to download it for iPhone and Android from the app stores.

3. Target Group: Who Will Benefit from the Training?

Enthusiastic current/potential indoor farmers who plan to start or have just started the PFAL business or research. They will gain understandings of the elementary theory and practice of PFALs, basic knowledge of cultivation and operational management, and keys to business success, etc.

The alumni of 2018 & 2019 JPFA training course are also welcomed to join.

In addition to viewing lectures and networking with other enthusiastic attendees, there is an exhibition opportunity through the training app.

For more, please refer to the table below.

Category	Note	Membership	Fee	To Be Included
First-time attendees		JPFA Members	JPY 35,000	Access to JPFA app for viewing lecture videos, downloading lecture files, attending virtual exhibitions and more.
		Non-JPFA Members	JPY 65,000	
Alumni of 2018 & 2019 trainings	Past participants in JPFA training course 2018 or 2019	JPFA Members	JPY 10,000	Same as above. Reviewing lecture videos/materials and networking. *Opportunities to ask questions about the lectures are limited to first-time attendees.
		Non-JPFA Members	JPY 15,000	
Exhibitors	JPFA organization members (not including individual members) or organizations that participants in the training course 2020 belong to.	JPFA Members	JPY 100,000	Virtual exhibitions and access to the JPFA app for networking (access to lecture content is not included) . Digital content (e.g. videos / images / documents, etc.) can be uploaded.
		Non-JPFA Members	JPY 100,000	

4. How to apply

■Registration

After receiving the application form, we will confirm your application category before starting the payment procedure.

▶**For first-time attendees**, please click [here](#).

If you are a JPFA member, please enter the password to choose the fee: JPY 35,000. The password is written in the email entitled “【JPFA News】NPO 植物工場研究会ニュース No.107: JPFA 国際研修のご案内 / Registration is Open for JPFA Online Training 2020!” sent to your organization’s contact person of JPFA membership.

▶**For the alumni of 2018 & 2019 training courses**, please visit [the URL in the email sent to all the alumni](#).

If you are a JPFA member, please enter the password to choose the fee: JPY 15,000. The password is written in the email entitled “【JPFA News】NPO 植物工場研究会ニュース No.107: JPFA 国際研修のご案内 / Registration is Open for JPFA Online Training 2020!” sent to your organization’s contact person of JPFA membership.

▶**For exhibitors**, please click [here](#).

If you are not a JPFA organization member but would like to exhibit, please apply for the training course as an attendee first.

If you cannot access the registration website provided by select type, please use the attached Excel form and send it to training@npoplantfactory.org.

* Once your application is approved, you will automatically receive a receipt via Stripe. Or, if you selected “I'd like to pay by bank transfer” as your payment option at the checkout, we will send you an invoice soon. If there is anything to confirm, we will contact you within 3 to 5 working days.

After your registration and payment have been completed, we will let you know. An invitation email will be sent to you one day before the training course starts.

■ Schedule

For first-time attendees and alumni of 2018 & 2019 training courses

(1) Early October

Every attendee will receive an invitation to the JPFA training app by email. Attendees will be able to edit their profiles, enjoy networking and check exhibitor information.

(2) From Oct. 8

Lecture videos will be available for viewing.

(3) In late October

Q&A discussion videos with the lecturers will be added to the app.

*Notifications on the app will be updated as appropriate.

For Exhibitors

Upon the completion of registration, we will inform you of the procedure.

■ Cancellation policy for first-time attendees and alumni

We will make no refunds on any cancellations because the cancellation deadline has passed.

However, you may transfer your registration to another person without penalty before Oct. 5, 2020.

If you have any questions, please feel free to contact [us](#).

Japan Plant Factory Association

The Japan Plant Factory Association (JPFA) is a nonprofit organization founded in 2010 and is devoted to academic and business advancements in the global industry of plant factory/controlled environment agriculture. Our mission is to develop and disseminate sustainable systems that can address global challenges: food, the environment, energy, resources and people's health. Based in a Chiba University campus in Kashiwanoha, a smart city area in Japan, we manage around 20 R&D projects, workshops, training courses, etc. with international industry-academia collaborations.



■How to Be A Member:

Please fill in this [application form](#) and send it to us.

For more, please visit the [JPFA website](#).

If you have any questions, please feel free to contact [us](#).



Japan Plant Factory Association

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