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Tel : (603) 8945 6100 Fax : (603) 8945 7100

Course Title : **Light Measurement Studies** Course Duration : **1 day**
Course Code : **LMS** Course Venue : **TBA**
Course Category: **Plant Physiology Program**
Course Level : **Refresher** Course Fee : **RM 250 per person**

➤ **Objective of Training**

At the end of the course, the participants will be able:

- 1) To obtain a better understanding of theoretical lesson for light measurement studies.
- 2) To understand the nature of light and its roles in photosynthesis.

➤ **Background facilities**

The workshop training comprises two sessions, where two slots will take place in the morning session and two slots for the afternoon session to ensure all participants can understand thoroughly about the course content. The venue for the course training will be announced **one month** before the scheduled date of workshop training.

➤ **Background of Speaker**

This course will be given by our Plant Science Consultant, **Dr Muhammad Nazmin bin Yaapar** who has a wide knowledge and experience in general plant physiology and rice science research. Dr Muhammad Nazmin Yaapar is affiliated to the Department of Crop Science, Universiti Putra Malaysia, where he is currently working as a Senior Lecturer. He has experience in teaching various plant science subjects at university level including agriculture botany, weed science, crop nutrition, rice production and crop physiology. He has authored and co-authored several national and international publications and also working as a reviewer for reputed professional journals. Moreover, he is having an active association with a photosynthesis research team in the United Kingdom. He has been regularly recognised by the local media as the reference scientist particularly in rice cultivation and crop improvement.

➤ **Introduction**

Light is the smallest quantity of energy that can be transported. A photon can be thought of as a massless light particle without a real size that can't be split, only created or destroyed. Light also has a wave-particle duality being kind of a particle and a wave at the same time. We see the light as colour and brightness. Actually, it is electromagnetic radiation; partly electric, partly magnetic that flows in a straight line (radiates)

Light is the connection between us and anything else in the universe. Through light, we could experience distant stars and look back at the beginning of existence itself. Using light lives on the planet are ignited and sustained. Light is both enigmatic and powerful at the same time.

➤ **Target Group**

This training is designed especially for beginner researcher who intend to do light scientific measurements in plant physiology. Intermediate researchers who wish to revisit the often-overlooked concepts in plant physiology.

➤ **Course Outline**

Slot 1: The Science of Light

- Electromagnetic radiation
- The dual nature of light
- The electric and magnetic field
- Q & A session

Slot 2: The Roles of Light in Photosynthesis

- The light-dependent reactions
- Photosystems I & II
- Photosynthetic pigments
- Chlorophyll fluorescence

Slot 3: Light Measurement

- Units of light quantification
- Quantifying lights for quantity and quality
- Devices for light measurements

Slot 4: Light in the field and indoor growth environments

- Light consideration in the field measurements
- Choosing suitable light in indoor environments
- Light quality utilisation for the specific harvesting purpose from the plants

➤ **Tentative program**

Date & Time	Activities	Venue
Day 1		
8:00 AM	Registration	TBA
9:00 AM	Slot 1: The Science of Light	
10:30 AM	Tea Break	
11:00 AM	Slot 2: The Roles of Light in Photosynthesis	
12:30 PM	Lunch break	
2:00 PM	Slot 3: Light Measurement	
3:30 PM	Slot 4: Light in the field and indoor growth environments	
5:00 PM	Dismiss	