



Last updated 1 May 2018



**Workshop on "Phenotyping in Controlled Environments"**  
**21- 22 May 2018**  
**CC-306, Thailand Science Park Convention Center, Pathum Thani**

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**Organized by:** National Center for Genetic Engineering and Biotechnology  
National Science and Technology Development Agency  
Ministry of Science and Technology

**In collaboration with:** Forschungszentrum Jülich, Germany

**Rationale and background:**

According to Thailand 4.0, the government focuses on shifting Thailand to creation & innovation economy by using Science, Technology and Innovation. Aiming to achieve this targeted goal, National Center for Genetic Engineering and Biotechnology with the collaboration with the Forschungszentrum Jülich, Germany establish the hands-on training workshop in order to bring scientists and engineers together to explore how to use convergence technologies such as omic technologies, imaging technology, and data analytics to enhance the capability in the agricultural industry.

Nowadays there are several integrated platforms for agriculture 4.0. Many applied technologies such as agri-map and mobile application have been launched to serve smart farming and precision farming. In this workshop, we design as the classroom for the hands-on practicing, easy understanding and utilizing updated technologies for value added results in agriculture. The biologists will learn how to use digital and IT technologies such as 2D and 3D imaging technologies and data analytics for the phenotyping platform. At the same time, the engineers will learn and understand the basic knowledge of plant physiology, plant diseases, as well as the requirement for the system designs. With the hands-on activities, the participants not only understand and utilize knowledge and technologies for tool & device development but also get to know each other for the future network cooperation.

**Aims:**

- To bring biologists to work with engineers in the area of integrated technologies for tool & device development for agricultural objectives.
- To provide hands-on activities for the participants with the phenotyping platform including the knowledge on plant physiology and plant diseases, and imaging & data analytic technologies.

**Speakers & Specialists for the hands-on activities:**

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| • Dr. Fabio Fiorani                      | Forschungszentrum Jülich, IBG-2, Germany                               |
| • Dr. Tobias Wojciechowski               | Forschungszentrum Jülich, IBG-2, Germany                               |
| • Dr. Mark Mueller-Linow                 | Forschungszentrum Jülich, IBG-2, Germany                               |
| • Dr. Natalie Wuyts                      | Forschungszentrum Jülich, IBG-2, Germany                               |
| • Assoc. Prof. Dr. Prasartporn Smitamana | Agricultural and Industrial Clinic Co. Ltd., Thailand                  |
| • Assist. Prof. Dr. Sujin Patarapuwadol  | Kasetsart University, Thailand   |
| • Ms. Samabhorn Bhuvitarkorn             | Kasetsart University, Thailand   |
| • Dr. Teera Phatrapornnant               | National Electronics and Computer Technology Center (NECTEC), Thailand |
| • Mr. Panintorn Prempre                  | National Electronics and Computer Technology Center (NECTEC), Thailand |

**Language:** The whole course will be given in English.

**Registration fee:** Free of charge

**Number and targeted participants:**

40 persons from both engineers and biologists from government section, public organization, university, and research institute.

**Registration Deadline\*:** 11 May 2018 or until the course is fully booked  
*\*Organizer reserves the right to register in the registration order*

**General information:**

**Public transportation to the venue**

**Air-conditioned bus routes:**

- No. 29 (Bangkok Railway Station - Thammasart University, Rangsit)
- No. 39 (Grand Palace - Thammasart University, Rangsit)
- No. 510 (Victory Monument - Thammasart University, Rangsit - Thai Market)

**Air-conditioned van routes:**

- No. 118 (Mo Chit BTS Sky Train Station - Thailand Science Park)
- No. 85 (Victory Monument - Thammasart University, Rangsit )

**Accommodation**

You are responsible for making your own arrangements.

**Suggested accommodation:**

• **DLUXX THAMMASAT**

Tel: (66) 2151 4000 (Office hour: 08.30 – 16.30)

Email: [dluxx@psm.tu.ac.th](mailto:dluxx@psm.tu.ac.th)

Website: [http://www.psm.tu.ac.th/main.php?page\\_name=dormitory.m3.p01](http://www.psm.tu.ac.th/main.php?page_name=dormitory.m3.p01)

• **Institute of East Asian Studies** (A 10-minute-walk from Thailand Science Park)

Tel: (66) 2564 5000 – 3

Website: [http://www.asia.tu.ac.th/ieas/ieas\\_buiding.htm](http://www.asia.tu.ac.th/ieas/ieas_buiding.htm)

**Tentative program:**

**Day 1: 21 May 2018 (Lectures on Imaging)**

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- 08.00 - 08.30 **Registration**
- 08.30 - 09.30 **Introduction to phenotyping with technologies**  
By Dr. Fabio Fiorani  
Forschungszentrum Jülich, IBG-2, Germany
- 9.30 - 10.30 **Plant Diseases: Major causes, symptoms and possibility of using imaging technology for proper diagnosis**  
By Assoc. Prof. Dr. Prasartporn Smitamana  
Agricultural and Industrial Clinic Co. Ltd.
- 10.30 - 11.00 **Imaging (affordable solution)**  
By Dr. Mark Mueller-Linow  
Forschungszentrum Jülich, IBG-2, Germany
- 11.00 - 11.30 **Example of utilizing phenotyping platform**  
By Dr. Teera Phatrapornnant & Mr. Panintorn prempree  
NECTEC, Thailand
- 11.30 - 12.00 **Plant diseases, plant samples, and what to focus for the phenotyping evaluation**  
By Assist. Prof. Dr. Sujin Patarapuwadol & Ms. Samabhorn Bhuvitarkorn  
Kasetsart University, Thailand
- 12.00 - 13.00 **Lunch**
- 13.00 - 16.00 **Hands-on workshop with the objective to learn how to develop & use technologies for plant research**  
By Dr. Fabio Fiorani  
Forschungszentrum Jülich, IBG-2, Germany
- **Divided into groups**
  - **Each group will have different problem to practice**
  - **The specialists will assist with plant diseases and software**

**Day 2: 22 May 2018**

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- 09.00 - 12.00 **Hands-on workshop (continued)**  
By Speakers and Specialists Team
- **Groups continue working with the problem**
  - **Practice on the result interpretation**
  - **Prepare the presentation**
- 12.00 - 13.00 **Lunch**
- 13.00 - 16.00 **Presentation of results/Conclusion**
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**For more information please contact:**

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