



CCIB Workshop on

Crop Microbiome and Sustainable Agriculture

Wednesday, April 13, 2022
@15:00, Beijing time
(UTC/GMT+8)

The global demand for food is expected to increase by 70% by 2050 to feed the increasing human population. However, it is a challenge for current agriculture to meet this requirement due to increasingly land degradation, extreme climate and environmental pollution and so on.

Harnessing microorganisms associated with crops (the crop microbiome) has been postulated as one of the most promising long-term solutions to the integral challenges. Microbiome is closely related to crop growth, development and yield. It is responsible for resource availability, plant health, and resilience to biotic and abiotic stresses.

The microbial inoculants have been widely used worldwide, however, it is still difficult for the large-scale application in mainstream agriculture due to the inconsistency in the efficacy under different environmental conditions. This inconsistency is driven by various scientific and technological issues, including lack of colonization and/or expression of phenotypes, competition with indigenous soil microorganism, lack of mutual plant-microorganism recognition and so on. It is expected to bring revolutionary changes to agricultural output and profits, microbial industry and sustainable development when these issues are systematically addressed.

This workshop aims to share research progress in crop microbiome and promote the large-scale application of relevant products and technologies (such as biofertilizers and biopesticides) by gathering researchers around the world to address the key challenges related to sustainable agriculture. In this context, the workshop will mainly set the following topics: The key members and functional capabilities of the crop core microbiome; Plant-microbiome interactions; The mechanism of improving crop yield and controlling diseases by microbiome; Crop microbiome related technologies and products and their applications, etc.

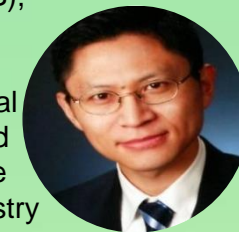
The above introduction mainly refers to
<https://www.nature.com/articles/s41579-020-00446-y>

VooV Meeting Link : <https://voovmeeting.com>

ID: 401572470

Speakers

Prof. Jibin Sun is the Deputy Director-General of Tianjin Institute of Industrial Biotechnology (TIB), CAS, Secretary-General of Biomanufacturing Industry (Talent) Alliance and the founding Director of COMSATS Joint Center for Industrial Biotechnology (CCIB) which is an open, shared and innovative cooperation platform to promote the development of biotechnology and bioindustry in the Global South.



He actively participated the activities of COMSATS network and is the co-organizer of the 22nd Meeting of COMSATS Coordinating Council. He is one of the eminent figures in the area of industrial biotechnology of China with research focus on understanding and upgrading the industrial strains. He contributed substantially to the foundation of the National Center of Technology Innovation for Synthetic Biology which offers a unique platform to host CCIB and international cooperation.

Prof. Zhiyong Huang is the Coordinator of the Joint R&D Group on Bio-agriculture, CCIB, and the Executive Director of Tianjin Key laboratory of Industrial Biosystems and Processes Engineering. After many years' study and working in Japan and America, he has been a Professor in TIB since 2008. Prof. Huang kept focus on Microbial Ecology, Environmental Microbiology, Microbiome, and developed a series of engineered microbial techniques which have been widely used in the Environment and Agriculture fields. He has published more than 50 SCI papers and owns 44 patents. He has presided over and participated in more than 40 national, local and enterprise projects and got several prizes such as Chinese Industry-University-Research Innovation Achievement Award.



For more information, please contact:

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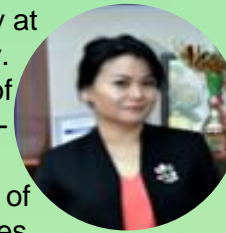
Program

Prof. Qirong Shen, Academician of Chinese Academy of Engineering, Professor of Nanjing Agricultural University. Prof. Shen has been engaged in the research and promotion of organic fertilizer and soil microorganism for a long time, his related technologies have been adopted by nearly 670 enterprises in China, making outstanding contributions to the development of China's organic fertilizer industry. He holds senior positions in the State Council, the Ministry of Agriculture and Rural Affairs, National Natural Science Foundation. He has published more than 450 SCI papers which are highly cited with h index 83 as of November 11, 2021. He was awarded 9 national Prizes. He owns 78 patents, 51 of which are transferred, making significant economic and social benefits to the sustainable development of cash crops.



His main task is to use biotechnology to produce *Bacillus thuringiensis* biological insecticide to control vegetable pests in Bangladesh. He has developed facilities of molecular biology and bioprocess development at pilot plant level.

Dr. Assemgul Sadvakassova, Associate Professor and Vice Dean Faculty of Biology and Biotechnology at Al-Farabi Kazakh National University. Her research areas include the use of phototrophic microorganisms in agro-biotechnology, environmental bioremediation and in the production of valuable biologically active substances, sustainable production of biofuels from microalgae. Until now, she has published more than 70 publications, 15 of which are published in the Scopus and Web of Science database journals, 7-textbooks, 5-patents for a useful model.



Prof. Mohammad Ali Malboobi, Professor of Department of Plant Biotechnology of National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran. He is also the Vice President of NIGEB technology, Head of AgBiotech Dept. of Iran Biotechnology Development Headquarter, CEO of Safe Product Inst., Sweden Green Biotech Inc. and Green Biotech Inc. He has a deep research foundation in agricultural microorganisms, plant biotechnology, biological fertilizers, especially phosphate solubilizing bacteria. In addition, he also has more in-depth research in transgenic plants, soil fertility and so on.



Prof. Yang Bai, Professor of Institute of Genetics and Developmental Biology, CAS since 2016 after 4 years' postdoctoral research work at Max Planck Institute for Plant Breeding Research. Currently, his research is focused on plant microbiota's functions in disease resistance and nutrient uptake by metagenomic sequencing, high throughput microbial cultivation and reconstitution. He has published more than 20 SCI papers in *Science*, *Nature*, *Nature Plants*, *ISME Journal* and so on.



Prof. Md. Mozammel Hoq is working at Department of Microbiology of University of Dhaka, Dhaka, Bangladesh.



15:00-15:05 Introductory Remarks

Prof. Jibin Sun

CCIB Founding Director & TIB Deputy Director-General

15:05-15:10 Opening Remarks

Prof. Ashraf Shaalan

Chairperson COMSATS Coordinating Council, Former President, National Research Centre (NRC), Egypt

15:10-15:40 Keynote Speech: Manufacture of Bio-organic Fertilizers to Manipulate Soil Microbial Communities

Prof. Qirong Shen

Academician of Chinese Academy of Engineering, Professor, Nanjing Agricultural University

15:40-15:55 Phosphate Biofertilizer: a Manifold Solution for Sustainable Agriculture

Prof. Mohammad Ali Malboobi

National Institute of Genetic Engineering and Biotechnology, Iran

15:55-16:10 Biotechnological Production of *Bacillus Thuringiensis* Biopesticides for its Application in Fruits and Vegetables in Bangladesh

Prof. Md. Mozammel Hoq

University of Dhaka Department of Microbiology

16:10-16:25 Biotechnological Potential of Soil Cyanobacteria in Agriculture

Dr. Assemgul Sadvakassova

Al-Farabi Kazakh National University

16:25-16:40 The Interactions Between Plants and Root Microbiome in Arabidopsis and Rice

Prof. Yang Bai

Institute of Genetics and Development Biology, CAS

16:40-16:55 Development and Application of Microbial Fertilizer

Prof. Zhiyong Huang

TIB, CAS

16:55-17:20 Panel Discussion

17:20-17:30 Closing Remarks

Notes: 15 minutes for each Invited Lectures (10 minutes' presentation and 5 minutes' interaction)