

Seminar on the Improvement and Utilization of Biomass Energy for Developing Countries Project Profile

Name	Seminar on the Improvement and Utilization of Biomass Energy for Developing Countries		
Organizer	Biogas Institute of Ministry of Agriculture and Rural Affairs, People's Republic of China (BIOMA)		
Date	July 21, 2022 to August 18, 2022	Language	English
Countries Invited	Developing Countries	Planned Number of Participants	25 in total
Training objectives	To enable participants to understand China's basic national conditions and the status quo of improvement and utilization of biomass energy in China as well as the existing problems and solutions, so as to provide some reference and guidance for improving and utilizing the biomass energy in developing countries. At the end of the seminar, the participants can put forward development suggestions in their corresponding fields in their home countries based on the content they have learned and with consideration of the industry situations in their own countries.		
Requirements for Participants	Professional Background	Government officials and technicians engaged in biomass energy utilization technology and management	
	Age	Under the legal retirement age of the participant's home country	
	Health Status	In good health; able to participate in online training on time	
	Language Competence	Able to understand, speak, read and write in English	
	Miscellaneous	Participants should prepare a country report on biomass energy before the seminar	
Seminar Contents	<p>1. Introduction to main training subjects and contents</p> <p>The improvement and utilization of biomass energy in developing countries will be discussed with the officials participating in the seminar through such forms as lectures, symposiums, online visits, and online culture experiences.</p> <p>(1) China's basic national conditions and engagement in the global fight against COVID-19: introduce the politics, economy, history, culture and foreign policies, and contributions and achievements China has made in the global fight against COVID-19.</p> <p>(2) Status quo of the development of biomass energy in China: introduce the background of biomass energy, and the status quo and tendency of its development.</p> <p>(3) Fuel ethanol from food crop: introduce the crops for producing fuel ethanol as well as the technologies for production and application of fuel ethanol from crop.</p>		

(4) Fuel ethanol from non-food crop: introduce the concept, process, breeding of engineering strains, research progress and other aspects of producing bio-fuel ethanol from agricultural wastes such as straws.

(5) Waste-to-energy utilization technologies for straws from straw crops: introduce the comprehensive utilization of straws, pyrolytic carbon and gas cogeneration technology, straw baling and burning technologies, and high-value utilization technology.

(6) Thermochemical conversion and formation of biomass: introduce the theory, technology and application of thermochemical conversion and formation of biomass.

(7) Biodiesel: introduce the development history and relevant standards of biodiesel, how to prepare biodiesel from biomass, and how to produce biodiesel from microalgae cultivated with wastewater.

(8) Energy crop resources: introduce the species and classification of energy crops, as well as the conversion and utilization technologies and approaches.

(9) Straw biogas plants: introduce the straw biogas fermentation technology, analysis of difficulties, and typical cases.

(10) Standard interpretation and case analysis for biomass molded fuels: introduce the parameters and testing methods for solid molded fuels, burners and molding devices, and the specific cases.

(11) Conversion of biomass to chemicals and liquid fuels: introduce the method for converting lignocellulosic biomass to high-value-added fine chemicals and liquid fuels, and overview the major approaches of high-value utilization of biomass.

The participants will be arranged to pay an online visit to the Energy Crop Base, the lab at the Biomass Energy Center of the Ministry of Agriculture and Rural Affairs, the Demonstration Base of Comprehensive Straw Utilization, Advanced Construction Materials Co., Ltd. and other places. Participants will also be arranged to visit Chengdu Research Base of Giant Panda Breeding and Dujiangyan Water Conservancy Project in Sichuan in an online way to experience the world's natural and cultural heritage and the development achievements of China's reform and opening up.

In addition, the seminar will also arrange for participants and experts to conduct online discussions and exchanges such as "Biomass Energy Exchange Forum", "Midterm Program Summary and Q&A", and "Program Summary and Exchange Forum", to provide a reference for development and utilization of the biomass energy in the participants' home countries and promote the exchange and cooperation with developing countries in biomass energy. Through the seminar, the participants will have a comprehensive understanding of the improvement and utilization of China's biomass energy technology, thus to introduce the advanced biomass energy improvement technology in China to other developing countries, promote local development of biomass energy and accumulate talent resources for agricultural technologies going global. Also, the Chinese experience in utilizing biomass energy shared in the seminar will provide a reference for utilization of the biomass energy in other developing countries, and support agricultural and scientific cooperation in the context of "One Belt and One Road" of China.

2. Overview of lecturers

This seminar invites nine lecturers and all of them have senior professional titles. Most of them are experts in biology, physical chemistry, biochemistry and molecular biology and have rich experience in teaching and research.

(1) WANG Lei: He currently serves as Deputy Dean of the School of Government and Member of the Party Committee of Beijing Normal University, Director of the Beijing Normal University BRICS Cooperation Research Center of the Center for International and Regional Studies of the Ministry of Education, Associate Professor, and Doctoral Supervisor. His main research fields include BRICS countries, global governance, China's diplomacy, the Belt and Road Initiative, international political economics, etc.

(2) HE Mingxiong: Graduated from Sichuan University with a Ph.D. in Science. He currently serves as Director of Bioenergy Technology Research Center of Biogas Institute of Ministry of Agriculture and Rural Affairs, mainly engaged in the research on microbial metabolic engineering and biomass conversion. (

(3) DAI Lichun: Graduated from Chinese Academy of Sciences with a Ph.D. in Engineering, Associate Research Fellow and Master's Supervisor. He currently serves as a backbone researcher of the Straw Waste-to-Resource Utilization Innovation Team of BIOMA. In recent years, he is mainly engaged in research of (thermo)chemical conversion and utilization of biomass energy.

(4) TAN Furong: Graduated from Sichuan Agricultural University with a Ph.D. in Science, Researcher. She currently serves as a backbone researcher of the Straw Waste-to-Resource Utilization Innovation Team of BIOMA. She is mainly engaged in efficient utilization and conversion of biomass resource, exploitation and application of new biomass resource for environment restoration, and research on the relationship among plant, soil restoration and microbial interaction.

(5) WANG Wenguo: Graduated from Sichuan University with a Ph.D. He currently serves as Executive Chief of "Livestock Manure Utilization and Pollution Control Innovation Team" of BIOMA, and is mainly engaged in theoretical and technological research on utilization of livestock and poultry breeding wastewater as resources, biomass energy and carbon capture by microalgae.

(6) RAN Yi: Graduated from Sichuan Agricultural University with a Master degree, senior engineer. He currently serves as Director of Testing Technology Research Center of BIOMA, Executive Deputy Director of Quality Supervision, Inspection and Testing Center for Biogas Products and Equipment of the Ministry of Agriculture and Rural Affairs, and Deputy Director of Risk Assessment Lab of the Quality Safety of Biomass Fermentation Products (Chengdu) of the Ministry of Agriculture and Rural Affairs. He is mainly engaged in researches of testing technologies for agricultural resources, rural energy and living environment, and risk assessment for quality safety of biomass fermentation products.

(7) HE Li: Senior Engineer: Graduated from Sichuan University, Master's Supervisor, and Director of China Biogas. She is currently engaged in agricultural quality and safety control and utilization of agricultural waste as resource at the Biogas Institute of Ministry of Agriculture and Rural Affairs.

(8) WU Bo: Graduated from Sichuan University with a Ph.D. in Science, associate researcher. He is mainly engaged in researches of waste-to-resource utilization of agricultural wastes, with the research fields covering creation and innovation of microbial germplasm resources, development and application of tools for metabolic engineering and synthetic biology, and fertilizing utilization of agricultural wastes.

(9) ZHU Liangfang: Graduated from Sichuan University with a Ph.D. in Science. She is a

	<p>professor and doctoral supervisor of the College of Chemistry, Sichuan University. She is mainly engaged in teaching and research of green chemistry, and has carried out research in new catalysts used for sugar conversion and process control in view of the complicated conversion reaction of raw materials during high-value utilization of biomass-derived sugar.</p> <p>3. Completion assessment: Each participant should submit a country report on biomass energy after the seminar.</p>		
Venue	Chengdu, Sichuan Province	Destination City of Online Visit	Dujiangyan, Sichuan Province
Notes	<p>1. This seminar uses ZOOM for online training. Participants need to have access to the Internet, a computer, a microphone, a camera and other equipment. Please contact the organizer before the seminar starts, get familiar with ZOOM and do internet testing for the APP.</p> <p>2. During the seminar, participants are requested to abide by class time and teaching disciplines. Seminar completion certificates will be issued on the basis of attendance records.</p> <p>3. Preparation before class: participants should enter the classroom 10 minutes in advance to prepare for class. and change the personal title to English name (consistent with passport) - country name style. During the class, the lecturer will enable the mute setting to participants. Trainees should start the video devices for roll call when entering the meeting room to prepare for class.</p> <p>4. Disciplinary requirements: Throughout the seminar, participants should strictly abide by the seminar schedule and should not withdraw from the seminar without reason.</p> <p>5. Information security: In order to protect information security and personal privacy, participants should not record, take screenshots or share to any social media during class.</p> <p>6. Participants should prepare relevant materials for symposiums according to the schedule and submit relevant electronic materials as required.</p> <p>7. Online consecutive English interpretation is provided.</p>		
About the Organizer	<p>Founded in 1979, Biogas Institute of Ministry of Agriculture and Rural Affairs (BIOMA), P.R. China is mainly responsible for the basic and applied research, frontier technology research, major key generic technology research, other public welfare research and the technical extension and trainings in biogas and other rural renewable energy, rural environmental treatment and the cross field of agro-ecological restoration. BIOMA has been committed to actively promoting knowledge dissemination and technology transfer in related fields through trainings, demonstration projects and cooperative research. In 1981, upon the agreement between Chinese government and UNDP, the Asia-pacific Biogas Research and Training Center (BRTC) in Chengdu of China was established at BIOMA. In 2014, FAO designated BIOMA as “FAO Reference Center for Biogas Research and Training”. In 2021, BIOMA was titled as one of the first “China-Africa Joint Centers for Modern Agrotechnology Exchange, Demonstration & Training” by the Ministry of Foreign Affairs and the Ministry of Agriculture and Rural Affairs. Since its establishment in 1979, BIOMA has held more than 140 international seminars</p>		

	<p>sponsored by the Chinese government and international organizations for more than 4,000 international participants from over 120 countries. At the same time, entrusted by the Chinese government and international organizations, experts from BIOMA have conducted overseas training and demonstration projects in developing countries, actively participated in the introduction and export of agricultural technologies and products, and established long-term cooperative relations with scientific research institutions in Europe, America and other developed areas.</p>
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