



Conference Program

PROGRAM OVERVIEW

Date	Time	Lecture Theatre 76	Lecture Theatre 77	Lobby
26 th Mar 2013	9:00 am – 11:00 am	Session I: Address by Guest of Honor and plenary talks	---	Poster Presentation and Exhibition
	11:00 am – 11:30 am	Tea break and networking session		
	11:30 am – 13:00 pm	Session II: Feedstock and supply chain development	V: Harness the value of oil palm biomass - A	
	13:00 pm – 14:00 pm	Lunch break		
	14:00 pm – 16:00 pm	Session III: Biomass catalytic conversion	Session VI: Biobased chemicals	
	16:00 pm – 16:30 pm	Tea break and networking session		
	16:30 pm – 18:00 pm	Session IV: Cellulosic ethanol and butanol	Session VII: Technology demonstration and commercialization	
	18:00 pm	Conference Dinner (Optional)		
27 th Mar 2013	9:00 am – 10:30 am	Section V: Harness the value of oil palm biomass - B		Poster Presentation and Exhibition
	10:30 am – 11:00 am	Tea break and networking session		
	11:00 am – 12:30 pm	Section VIII: Synthetic biology and metabolic engineering		
	12:30 pm – 13:30 pm	Lunch break		
	13:30 pm – 15:00 pm	Section IX: Waste to energy and materials		
	15:00 pm – 15:30 pm	Tea break and networking session		
	15:30 pm – 17:30 pm	Section X: Young scientists' symposium		
	17:30 pm	End of the Conference Talks		
28 th Mar 2013	9:00 am – 12:00 pm	Technical Tours (Optional)		Poster Presentation and Exhibition
	12:30 pm – 14:00 pm	Lunch		

ORAL PRESENTATIONS

Day 1 - 26th Mar 2013, Lecture Theatre T 76

9:00 am - 11:00 am

Session I: Address by guest of honor and plenary talks (all to attend)

Session Chair - Dr. GENG Anli, President, BioEnergy Society of Singapore

Guest of Honor address:

9:00 am - 9:40 am: Energy Research, Development and Demonstration: Challenges and Opportunities, by Mr. TSOI Mun Heng, Director, Energy and Environment Research Directorate, Prime Minister's Office, National Research Foundation, Singapore

Plenary talks

9:40 am - 10:20 am: Biobased fuels and chemicals in Singapore, current status and future perspectives, by Dr. Keith CARPENTER, Executive Director, Institute of Chemical Engineering and Sciences (ICES), Agency of Science Technology and Research (A*star), Singapore

10:20 am - 11:00 am: An Overview of bioenergy and biorefinery research activities of national research institutes in Korea, by Prof. Ho-Nam CHANG, Chairman, National Research Council of Korea for Industrial Science & Technology; Department of Chemical & Biomolecular Engineering Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea

Technical talks

Day 1 - 26 Mar 2013, Lecture Theatre 76

11:30 am - 13:00 pm

Session II: Feedstock and supply chain development

Session Chair: Dr Armando BORGNA, Programme Manager (Chemicals) and Head of Heterogeneous Catalysis, Institute of Chemical and Engineering Sciences (ICES), A*star, Singapore

11:30 am - 12:00 pm: Biomass resources and characteristics in Southeast Asia, by Mr. Saku RANTANEN, Chief Executive Officer, SaraRasa Biomass, Singapore

- 12:00 pm - 12:30 pm: Improving Viability and Sustainability of Jatropha, by Dr. HONG Yan, Chief Scientific Officer, Joil (S) Pte Ltd, Singapore
- 12:30 pm - 13:00 pm: The bottleneck in the productivity of outdoors mass algal cultivation, and the way forward, by Dr. LEE Yuan Kun, Associate Professor, Department of Microbiology, National University of Singapore

Day 1 - 26 Mar 2013, Lecture Theatre 76

14:00 pm - 16:00 pm

Session III: Biomass catalytic conversion

Session Chair - Assoc/Prof. LI Zhi, Department of Chemical and Biomolecular Engineering, National University of Singapore

- 14:00 pm - 14:30 pm: Sustainable production of chemicals through catalytic processes, by Dr Armando BORGNA, Programme Manager (Chemicals) and Head of Heterogeneous Catalysis, Institute of Chemical and Engineering Sciences (ICES), A*star, Singapore
- 14:30 pm - 15:00 pm: Biomass Gasification and Liquid Fuel (BTL) Synthesis using an Entrained-flow Type Gasifier in Japan, by Dr. Tomoko OGI, Senior Researcher, National Institute of Advanced Industrial Science and Technology, Onogawa 16-1, Tsukuba, Ibaraki 305-8569, Japan
- 15:00 pm - 15:30 pm: Lignocellulosic biomass into fuels via hydrodeoxygenation, by Dr. YAN Ning, Assistant Professor, Department of Chemical and Biomolecular Engineering, National University of Singapore
- 15:30 pm - 16:00 pm: Biomass to Chemicals: The Production of hydroxymethylfurfural (HMF) and its derivatives, by Dr. ZHANG Yugen, Group Leader, Pharmaceuticals Synthesis and Green Chemistry, Institute of Bioengineering and Nanotechnology, A*star, Singapore

Day 1 - 26 Mar 2013, Lecture Theatre 76

16:30 pm - 18:00 pm

Session IV: Cellulosic ethanol and butanol

Session Chair: Dr. ZHANG Yugen, Group Leader, Pharmaceuticals Synthesis and Green Chemistry, Institute of Bioengineering and Nanotechnology, A*star, Singapore

16:30 pm - 17:00 pm: Potential ethanol yields from energy sorghum cultivars in semi-arid tropics, by Dr. P. Srinivasa RAO, International Crops Research Institute for the Semi-Arid tropics (ICRISAT), Patancheru, Hyderabad, India

17:00 pm - 17:30 pm: Cellulosic ethanol production from cassava biomass, by Prof. Chalerm RUANGVIRIYACHAI, Department of Chemistry, Faculty of Science, Khon Kaen University, Thailand

Day 1 - 26th Mar 2013, Lecture Theatre 77

11:30 am - 13:00 pm

Session V: Harness the value of oil palm biomass - A

Session Chair - Dr. WU Jinchuan, Head of Industrial Biotechnology, Institute of Chemical and Engineering Sciences (ICES), A*STAR, Singapore

11:30 am - 12:00 pm: Palm biomass refinery and zero discharge strategy, by Prof. Mohd Ali HASSAN, Environmental Biotechnology Research Group, Faculty of Biotechnology & Biomolecular Sciences, Universiti Putra Malaysia, Selangor, Malaysia

12:00 pm - 12:30 pm: Oil Palm Empty Fruit Bunch (OPEFB) utilization for bioenergy and biorefinery, by Prof. Seonghun KIM, Jeonbuk Branch Institute, Korea Research Institute of Bioscience and Biotechnology, Republic of Korea

12:30 pm - 13:00 pm: Bioethanol Production from Oil Palm Biomass, by Mr. Mohammed FAISAL, Sime Darby Technology Centre Sdh Bdh, Universiti Putra Malaysia, Selangor Darul Ehsan, Malaysia

Day 1 - 26th Mar 2013, Lecture Theatre 77

14:00 pm - 16:00 pm

Session VI: Biobased chemicals

Session Chair, Dr. Kyoung Heon KIM, Professor of School of Life Sciences and Biotechnology, Director of Science Library, Korea University, Republic of Korea

14:00 pm - 14:30 pm: Highly efficient production of lactic acid using thermophilic bacteria under open conditions, by Dr. WU Jinchuan, Head of Industrial Biotechnology, Institute of Chemical and Engineering Sciences (ICES), A*STAR, Singapore

14:30 pm - 15:00 pm: Extractive fermentation for hexanoic acid production by *Megasphaera* sp. BS-4, by Prof. Byoung-In SANG, College of Engineering, Department of Chemical Engineering, Hanyang University, Seoul, Republic of Korea

15:00 pm - 15:30 pm: Towards a competitive production platform for Flavour and Fragrance based on red yeast and black yeast, by Dr. JI Liang Hui, Head, Biomaterials & Biocatalysts Laboratory, Temasek Life Sciences Laboratory, Singapore

15:30 pm - 16:00 pm: Value-chained production of biofuels and biobased chemicals: KITECH's approach to sustainable industry, by Dr. Sangyong KIM, Korea Institute of Industrial Technology (KITECH), Republic of Korea

Day 1 - 26th Mar 2013, Lecture Theatre 77

16:30 pm - 18:00 pm

Session VII: Technology demonstration and commercialization

Sessoir Chair - Dr. JI Liang Hui, Head, Biomaterials & Biocatalysts Laboratory, Temasek Life Sciences Laboratory, Singapore

16:30 pm - 17:00 pm: Biobased fuel, chemical and materials development at DuPont, by Dr. MIAO Guo-Hua, Regional Biofuels Business Development Leader & General Manager, DuPont (China) Research & Development, China

17:00 pm - 17:30 pm: Butalco's yeast technology for biofuel and biochemical production, by Dr. Gunter FESTEL, Chief Executive Officer, BUTALCO GmbH, Switzerland

17:30 pm - 18:00 pm: PROESA®: break-through technology for advanced biofuels and renewable chemicals from cellulosic biomass, Mr. Pierluigi PICCIOTTI, Business Development Director Asia Pacific, Beta Renewables Spa.

Day 2 - 27th Mar 2013, Lecturer Theatre 76

9:00 am - 10:30 am

Session VI: Harness the value of oil palm biomass - B

Session Chair - Assoc/Prof. He Jianzhong, Department of Civil and Environmental Engineering, National University of Singapore

9:00 am - 9:30 am: Promotion of Green Economy with Palm Oil Industry for Biodiversity Conservation, Prof. Yoshihito SHIRAI, Kyushu Institute of Technology, Japan

9:30 am - 10:00 am: Cellulosic ethanol production from oil palm empty fruit bunch (OPEFB) using novel biocatalysts, by Dr. GENG Anli, School of Life Sciences and Chemical Technology, Ngee Ann Polytechnic, Singapore 1

10:00 am - 10:30 am: Whole slurry fermentation of pretreated oil palm residues into ethanol, by Dr. Kyoung Heon KIM, Professor of School of Life Sciences and Biotechnology, Director of Science Library, Korea University, Republic of Korea

Day 2 - 27th Mar 2013, Lecturer Theatre 76

11:00 am - 12:30 pm

Session VIII: Synthetic biology and metabolic engineering

Session Chair - Prof. Byoung-In SANG, College of Engineering, Department of Chemical Engineering, Hanyang University, Seoul, Republic of Korea

11:00 am - 11:30 am: Improvement of xylanase production in marine-derived *Streptomyces* by metabolic engineering, by Dr. ZHAO Xinqing, Professor of Microbial Biotechnology, School of Life Science and Biotechnology, Dalian University of Technology, China

11:30 am - 12:00 pm: Synthetic biology for biobased fuel and chemical production, by Dr. Matthew Wook CHANG, Assistant Professor, Division of Chemical and Biomolecular Engineering, School of Chemical and Biomedical Engineering, Nanyang Technological University

12:00 pm - 12:30 pm: Proteomic insights into industrial *Saccharomyces cerevisiae*, by Dr. CHENG Jing-Sheng, Professor, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China

Day 2 - 27th Mar 2013, Lecturer Theatre 76

13:30 pm - 15:00 pm

Session IX: Waste to energy and materials

Session Chair: Dr. Matthew Wook CHANG, Assistant Professor, Division of Chemical and Biomolecular Engineering, School of Chemical and Biomedical Engineering, Nanyang Technological University

13:30 pm - 14:00 pm: Directional conversion of environmental pollutants and energy/material recovery, Prof. FENG Yujie, Harbin Institute of Technology, Harbin, China

14:00 pm - 14:30 pm: Development of efficient methods for the production of biodiesel from waste grease, Assoc/Prof. LI Zhi, Department of Chemical and Biomolecular Engineering, National University of Singapore

14:30 pm - 15:00 pm: A decentralized urban biorenewable resource recovery (DUBR2) system, Assoc/Prof. Wang Jing-Yuan, Director of Residue and Resource Reclamation Centre (R3C), Nanyang Technological University, Singapore

Day 2 - 27th Mar 2013, Lecturer Theatre 76

15:30 pm - 17:30 pm

Session X: Young scientists' symposium

Session Chair, Dr. ZHAO Xinqing, Professor of Microbial Biotechnology, School of Life Science and Biotechnology, Dalian University of Technology, China

15:30 pm - 16:00 pm: Butanol production from renewable biomass by a novel *Clostridia* mutant, by Dr. MIAO Huang, School of Applied Science, Temasek Polytechnic, Singapore.

16:00 pm - 16:30 pm: Microalgae cultivation using light stress for wastewater treatment and biomass production, by Mr. Yong-Keun CHOI, Konkuk University, Republic of Korea.

16:30 pm - 17:00 pm: Investigation of Biobutanol generation and overexpression of a β -xylosidase gene from *Clostridium* sp. BOH3, by Mr. XIN Fengxue, Department of Civil and Environmental Engineering, National University of Singapore.

17:00 pm - 17:30 pm: Operation of an algae cathode integrated sediment microbial fuel cell, by Mr. Hyeon Jin JEON, Department of Microbial Engineering, Konkuk University, Republic of Korea.

Day 2 - 27th Mar 2013, Lecturer Theatre 76

17:30 pm - 18:00 pm

Session XI: Best Poster Awards Presentation

By Dr. Geng Anli, President, BioEnergy Society of Singapore

POSTER PRESENTATIONS

- Poster 01 - A Study on Reducibility of Ultracarbon-supported Cobalt Fischer-Tropsch Catalysts, by Dr. GOH Chee Keong, Republic Polytechnic, Singapore
- Poster 02 - Direct biofuel conversion from Biomass with simultaneous consumption of pentose and hexose sugars by minicellulosome containing xylanase and cellulase in *Pichia pastoris*, by Prof. SungOK HAN, Korea University, Republic of Korea.
- Poster 03 - Expression of *Clostridium acetobutylicum* butanol and *Clostridium kluyveri* genes in *E. coli* for butanol production, by Mr. HE Aiyong, Department of Biotechnology and Pharmaceutical Engineering, Nanjing University of Technology, Jiangsu, China
- Poster 04 - Heterologous expression and biochemical characterization of acetyl xylan esterase from *Coprinopsis cinerea*, by Dr. Juturu VEERESH, Institute of Chemical Engineering Sciences (ICES), A*star, Singapore
- Poster 05 - Application of a three-stage sequential solvent extraction for the recovery of acetic acid from pre-pulping extraction, by Prof. Byung-Hwan UM, Hankyong National University, Republic of Korea
- Poster 06 - Statistical study for optimizing the secondary hydrolysis of hemicellulose in green liquor pre-pulping extract of mixed hardwoods using response surface methodology, by Prof. Seong-Jik PARK, Hankyong National University, Republic of Korea
- Poster 07 - Poly-3-hydroxybutyrate (PHB) production from oil palm empty fruit bunch using a PHB-accumulating bacterium isolated in Singapore, by Mr. SUN Wandong, Wuhan Institute of Technology, Wuhan, China
- Poster 08 - Poly-3-hydroxybutyrate (PHB) production from waste cooking oil using *Ralstonia eutropha*, by Mr. SUN Wandong, Wuhan Institute of Technology, Wuhan, China
- Poster 09 - Effects of inhibitors on xylitol production from lignocellulosic sugars using a *Candida* sp., Mr. ZHANG Jinming, Ngee Ann Polytechnic, Singapore
- Poster 10 - Xylose-fermenting *S. cerevisiae* strain construction through the overexpression of a novel bacterial xylose isomerase, by Mr. PENG Bingyin, School of Life Sciences and Chemical Technology, Ngee Ann Polytechnic, Singapore.
- Poster-11 - Butanol production from renewable biomass by a novel *Clostridia* mutant, by Dr. MIAO Huang, School of Applied Science, Temasek Polytechnic, Singapore.

- Poster 12 - Microalgae cultivation using light stress for wastewater treatment and biomass production, by Mr. Yong-Keun CHOI, Konkuk University, Republic of Korea.
- Poster 13 - Investigation of biobutanol generation and overexpression of a β -xylosidase gene from *Clostridium* sp. BOH3, by Mr. XIN Fengxue, Department of Civil and Environmental Engineering, National University of Singapore.
- Poster 14 - Operation of an algae cathode integrated sediment microbial fuel cell, by Mr. Hyeon Jin JEON, Department of Microbial Engineering, Konkuk University, Republic of Korea.
- Poster 15 - Fatty acid profile of a locally isolated microalga identified as *Chlamydomonas* sp., by Dr. Charmaine LLOYD, School of Life Sciences and Chemical Technology, Ngee Ann Polytechnic, Singapore
- Poster 16 - Nile red spectrofluorometric analysis of freshwater algae for fatty acids, by Dr. Charmaine LLOYD, School of Life Sciences and Chemical Technology, Ngee Ann Polytechnic, Singapore
- Poster 17 - Production of massoia lactone by microbial fermentation using sugar as carbon source, by Mr. NGOH Si Te, Temasek Life Sciences Laboratory, Singapore
- Poster 18 - Optimization of enzyme production by gamma irradiation mutation of fungal whole-cell solutions for pre-treatment of lignocellulosic biomass, by Mr. Christoph OTTENHEIM, Institute of Chemical and Engineering Sciences, A*star, Singapore
- Poster 19 - Bioconversion of hemicellulose to xylose, by Mr. LAM Yuen Sean, Department of Civil and Environmental Engineering, National University of Singapore
- Poster 20 - Catalytic Aqueous Phase Reforming of Glycerol for Hydrogen Production over Pt-based Catalyst Supported on Carbon Nanotubes, by Mr. HE Chao, Residues and Resource Reclamation Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University
- Poster 21 - A Decentralized Urban Biorenewable Resource Recovery (DUBR²) System, by Miss Lim Jun Wei, Residues and Resource Reclamation Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University
- Poster 22 - A study on the different lipid extraction methods and their effects on the profile of microalgal lipids, Dr New Jen Yan, School of Life Sciences and Chemical Technology, Ngee Ann Polytechnic, Singapore
- Poster 23 - Targeted gene deletion in red yeast, *Rhodospiridium toruloides*, Mr. John Koh, Temasek Life Sciences Laboratory (TLL), Singapore

SITE VISITS (OPTIONAL)

Day 3 - 28th Mar 2013,

- 8:00 am - 8:30 am: Hotel to Ngee Ann Polytechnic
- 8:30 am - 9:00 am: Ngee Ann Poly to National University of Singapore
- 9:00 am - 10:00 am: visit Raffles Museum of Biodiversity Research at NUS
- 10:00 am -10:30 am: transport from NUS to Nanyang Environment and Water Research Institute (NEWRI), Nanyang Technological University (NTU), Cleantech One
- 10:30-11:00 am: Tea break
- 11:00 am - 12:00 pm: visit NEWRI
- 12:00 pm - 12:30 pm: Transport to restaurant
- 12:30-14:00 pm: Lunch
- 14:00 pm: Transport back to Hotel or MRT stations

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