International Symposium on Bioenergy and Biorefinery (ISBB 2026)

Detailed Session Profile & Technical Program Overview

▪ Session Overview

Session Number:	Session #5
Session Title:	**Biomass Pretreatment and Characterization (BPC)**
Scope & Focus:	Physical, chemical, and biological deconstruction techniques to analyze cell-wall structures, valorize organic plant/food residues, and boost biorefining efficiency.

▪ Committee & Invited Speakers

SESSION CHAIR

Prof. Shao-Yuan (Ben) Leu

The Hong Kong Polytechnic University
Email: syleu@polyu.edu.hk

Prof. Shao-Yuan (Ben) Leu obtained his BSc/MSc degrees from the School of Forestry at the National Taiwan University (1993-97), where he studied wood-processing techniques to improve its fire-resistant abilities. He then received MPhil/PhD from the Civil and Environmental Engineering Department of UCLA (2003-09) on modeling energy efficiency in biological wastewater system. He was a lecturer at UC Riverside (2010-11) and a postdoctoral fellow at USDA Forest Products Laboratory in Madison, Wisconsin (2011-13). Dr. Leu's research expertise is in forestry and woody biomass valorization. At PolyU, Dr Leu established the BioEnergy Lab to characterize the physiochemical structure of woody plant cell wall and forge thermo-/bio-conversion theories into practices. Dr Leu's team demonstrates the strengths of a few pretreatment techniques to valorize plant residues derived from woods, herbs, and even food wastes, which may be particularly applicable for forestry and waste management in mega-cities like Hong Kong. For more details of Dr. Leu please refer to https://www.polyu.edu.hk/cee/~syleu/.

SESSION CO-CHAIR

Prof. Changwei Hu

Sichuan University
Email: changweihu@scu.edu.cn

Prof. Changwei Hu received his B.Sc. (1983), M.Sc. (1991), and Ph.D. (1996) from Sichuan University. He is a Fellow of the Chinese Chemical Society and a Fellow of the Royal Society of Chemistry (FRSC). He was awarded the National Teaching Master Award in 2011 and has received the State Council Special Allowance since 2008. He is recognized as an academic and technical leader in Sichuan Province.

Prof. Hu serves as Vice Chairman of the Ministry of Education's Teaching Steering Committee for University Chemistry Courses and Chairman of the Sichuan Provincial Chemistry Teaching Steering Committee. He is also Director of the Ministry of Education Key Laboratory of Green Chemistry and Technology and Deputy Director of the National-Local Joint Engineering Laboratory for Energy Plant Biofuels. In addition, he holds editorial and advisory positions for numerous international and domestic journals in chemistry and sustainable development.

A distinguished educator and researcher, Prof. Hu leads the national teaching team and first-class course in Green Chemistry. He has spearheaded the development of national flagship chemistry courses, textbooks, and MOOCs. His research focuses on green chemistry, sustainable resource utilization, and pollution prevention. He has published more than 500 SCI-indexed papers, including in Nature Communications, JACS, Angewandte Chemie, and ACS Catalysis, and has been recognized as an Elsevier Highly Cited Chinese Researcher since 2021. He holds over 40 national invention patents and has received more than 20 provincial and ministerial-level awards.

SESSION CO-CHAIR & KEYNOTE SPEAKER

Prof. Xuebing ZHAO

Department of Chemical Engineering, Tsinghua University
Email: zhaoxb@mail.tsinghua.edu.cn

Presentation Title: Boosting biomass deconstruction and biorefining by multidisciplinary approaches

Dr Xuebing Zhao is a tenured Associate Professor and PI in the Department of Chemical Engineering, Tsinghua University, China. He received his PhD degree in the Department of Chemical Engineering at Tsinghua University in 2009. He performed his post-doctoral research at Tsinghua University (2009–2011) and the University of Wisconsin-Madison (2014–2015). His current research focuses on the biorefining of lignocellulosic biomass to produce biofuels and chemicals via biological, chemical and electrochemical approaches. He has published more than 150 academic papers and book chapters in the field of biomass conversion with total cites of more than 13,000 times, and an H-index of 56. He was awarded the Tsinghua "Liangshi Yiyou (良师益友)" Award for Outstanding Mentors and Friends of Students, Liu-Shuli Education Contribution Award, Young Scientist Prize of the Hou Debang Chemical Science and Technology Award etc. Since 2020, he has been annually listed among Stanford's World's Top 2% Scientists and Elsevier's Highly Cited Chinese Researchers.

KEYNOTE SPEAKER

Prof. Sang-Hyoun KIM

Yonsei University
Email: sanghkim@yonsei.ac.kr

Presentation Title: Boosting biomass deconstruction and biorefining by multidisciplinary approaches

Sang-Hyoun Kim is a professor in the Department of Civil and Environmental Engineering and a Lee Youn Jae Fellow at Yonsei University, Korea. He has been served as a vice president of Korean Society of Waste Management since 2024. He received his Ph.D. in Civil and Environmental Engineering at Korea Advanced Institute of Science and Technology (KAIST), where he also got his master's and bachelor's degrees in civil engineering and chemistry, respectively. Before coming to Yonsei University, he was a faculty member at Daegu University (2010 to 2018), a senior researcher at Korea Institute of Industrial Technology (2009 to 2010), a postdoctoral researcher at Iowa State University (2006 to 2009) and, a visiting scholar at University of Illinois at Urbana-Champaign (2016 to 2017). His research interests lie in waste-energy-resources nexus. Specifically, his research focuses on anaerobic digestion and biohydrogen production. He was named as a highly cited researcher (HCR) in 2024 by Clarivate and the scientist of the month in July 2025 by the Ministry of Science and ICT, Korea.