



## NEW-CONCEPT BIOREFINING: FRACTIONATION, CONVERSION, AND VALORIZATION OF LIGNOCELLULOSIC BIOMASS IN INORGANIC IONIC LIQUID (MOLTEN SALT HYDRATE)

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### ABSTRACT

Molten salt hydrate, also called inorganic ionic liquid, is an aqueous solution of inorganic salt at extraordinarily high concentration. The system has many unique properties such as high boiling point, low vapor pressure, and liquid state at moderate temperature. Different from most organic ionic liquids, the molten salt hydrate has low cost, low viscosity, and low toxicity. More attractively, some molten salt hydrates are able to swell and dissolve cellulose and biomass. This presentation reports our recent research activities on using molten salt hydrates for fractionation, conversion, and valorization of lignocellulosic biomass, including cellulose dissolution and hydrolysis, biomass saccharification and fractionation, glucose isomerization, sugars/biomass to furan-based chemicals and hydrocarbons, lignin quantitation, and lignin depolymerization.

**Date:** 24 October 2018 (Wednesday)  
**Time:** 14:30 – 15:30  
**Venue:** Room ZS970, 9/F, Block Z,  
The Hong Kong Polytechnic University,  
181 Chatham Road South, Hungghom, Kowloon,  
Hong Kong

### SPEAKER'S BIOGRAPHY

Prof. Pan is a Professor in the Department of Biological Systems Engineering at University of Wisconsin-Madison. He earned his Bachelor, Master and PhD degrees in Chemical Engineering at Tianjin University of Science and Technology, China, and PhD degree in Applied Bioscience at Hokkaido University, Japan. Prof. Pan conducted postdoctoral researches at Georgia Tech, University of Minnesota, and University of British Columbia, successively.

Prof. Pan's research interest is to develop innovative technologies for converting lignocellulosic biomass into liquid fuels, platform chemicals, and functionalized materials. He has published 100+ peer reviewed journal articles, 6 book chapters, and 4 US patents. Prof. Pan has won many awards, such as Vilas Midcareer Award in 2018, Alfred Toepfer Faculty Fellow Award in 2011, and NSF Career Award in 2009. He was elected as Fellow of International Academy of Wood Science in 2013.

\*\*\* All Interested Are Welcome \*\*\*

For further information, please contact Dr. Ben S.-Y. Leu at Tel. 3400-8322 or [syleu@polyu.edu.hk](mailto:syleu@polyu.edu.hk). Free Admission. Certificates of attendance will be provided to participants if they attend the whole lecture.