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Date:	October 26th, 2016
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Place:	ENGR 406

Abstract

An important current focus of research in biology, chemistry, engineering, agriculture, and environmental sciences is the development of clean technologies that utilize cellulosic biomass as a renewable resource to the largest extent possible in a biorefinery setting to produce sustainable liquid transportation fuels and chemicals. Of all sustainable resources, only biomass can be transformed into organic fuels and chemicals that can integrate well into our current transportation infrastructure with the inherent convenience, cost, and efficiency advantages of current fuels. Cellulosic biomass can be converted to fuels and chemicals through aqueous-phase processes involving carbohydrates-derived and lignin-derived reactive intermediates deconstructed from these structural components within biomass. The key challenge is to achieve high yields of these reactive intermediates for biological and/or catalytically upgrading into fuels or chemicals at low cost.

In this talk, an overview of state-of-the-art technologies for the advanced biofuels production as well as Dr. Yang's recent research and development on both catalytic and biological pathways to upgrade lignin to jet fuel, chemicals, and materials will be discussed.

Dr. Bin Yang is an Associate Professor in the Department of Biological Systems Engineering and the Bioproduct, Sciences & Engineering Laboratory at Washington State University, Tri-Cities. He has dedicated most of his career to the development of renewable energy technologies with particular emphasis on production of biofuels and chemicals from cellulosic biomass feedstocks and other sustainable resources. His major research interests include understanding fundamental mechanism of bioprocessing technologies for the advanced biofuels, advancing cutting-edge technologies and facilitating the commercialization process as well as improving our knowledge of emerging technologies to meet near and long term needs worldwide. He has authored more than 85 peer-reviewed papers and book chapters, made more than 100 presentations, many invited, written over 9 technical reports, and 5 patents. He has managed in excess of $6M of external federal research funding from DARPA, DOE, NSF, DOT for the past ten years. He is a recipient of the DARPA Young Faculty Award of 2011. He also serves as an advisory editor board member for ***Biofuels Bioproducts & Biorefining, Recent Patents on Food Nutrition & Agriculture, Biofuels, and AIMS Energy.***