

**Dr. Hanwu Lei**  
Washington State University

**Education**

2006 Ph.D. in Biosystems and Agricultural Engineering, University of Minnesota  
2003 M.S. in Biosystems and Agricultural Engineering, University of Minnesota  
1992 B.S. in Cereal Engineering, Wuxi University of Light Industry

**Professional Experience**

08/09- Assistant Professor, College of Engineering and Architecture, Washington State University  
12/07-08/09 Assistant Professor, Agricultural and Biosystems Engineering Department, South Dakota State University  
1/06-12/07 Research Associate and Process Engineer, Department of Bioproducts and Biosystems Engineering, University of Minnesota  
6/95-12/00 Manager and Process Engineer of Producing and Technology Department, Sichuan Agricultural and Sideline Products Processing Technology Development Corporation, China  
7/92-6/95 Technical Supervisor and Engineer, Dongfeng Wheat Flour Mill, China

**Selected Publications**

1. **H. Lei**, S. Ren, and J. Julson. 2009. The effects of reaction temperature and time and particle size of corn stover on microwave pyrolysis. *Energy and Fuels*. 23, 3254–3261.
2. B. Zhang, C. Yang, J. Moen, Z. Le, K. Hennessy, Y. Wan, Y. Liu, **H. Lei**, P. Chen and R. Ruan. 2009. Catalytic conversion of microwave-assisted pyrolysis vapors. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* (in press)
3. Wan, Y., X. Lin, Y. Liu, C. Yang, B. Zhang, P. Chen, **H. Lei**, and R. Ruan. 2009. Microwave assisted pyrolysis of corn stover pellets with catalysts for bio-oil production. *Transaction of CSAE*. 25(4):190-195
4. J. Wu, Y. Wang, Y. Wan, **H. Lei**, F. Yu, Y. Liu, P. Chen, L. Yang, R. Ruan. 2009. Processing and properties of rigid polyurethane foams based on bio-oils from microwave-assisted pyrolysis of corn stover. *International Journal of Agricultural and Biological Engineering* 2(1): 40 - 50.
5. Y. Gao, W. Chen, **H. Lei**, X. Lin, R. Ruan, C. Chen. 2009. Optimization of esterification conditions for the production of biodiesel from Chinese tallow kernel oil with surfactant-coated lipase using surface response methodology. *Biomass and Bioenergy* 33(2): 277-282.
6. L. Gao, Y. Liu, **H. Lei**, H. Peng, R. Ruan. 2009. Preparation of semirigid polyurethane foam (PUF) with liquefied bamboo residues. *J. Applied Polymer Sci.* (in press)
7. Y. Gao, W. Chen, **H. Lei**, Y. Liu, X. Lin, R. Ruan. 2009. Optimization of Transesterification Conditions for the Production of Fatty Acid Methyl Ester (FAME) from Chinese Tallow Kernel Oil with a Nano Magnetic Catalyst. *Trans. ASABE* (Under review)
8. I. Cybulsky, **H. Lei**, J. Julson. 2009. Hydrothermal pretreatment and enzymatic hydrolysis of prairie cord grass. *Energy and Fuel*. (under review)
9. Wan, Y., X. Lin, Y. Liu, C. Yang, B. Zhang, P. Chen, **H. Lei**, and R. Ruan. 2009. Catalytic microwave pyrolysis of corn stover and the biooil analysis. *Transaction of CSAE*. (In press).

10. Y. Wang, J. Wu, Y. Wan, **H. Lei**, F. Yu, P. Chen, X. Lin, and R. Ruan. 2009. Liquefaction of corn stover using industrial biodiesel glycerol. *International Journal of Agricultural and Biological Engineering* 2(2): 1-9.
11. Y. Liu, Y. Wan, **H. Lei**, R. Ruan, C. Liu, X. Lin, M. Xie, H. Peng, D. Zheng. 2008. Starch based polyester type water resistant wood adhesive. *Transactions of the CSAE* 24(9): 309 - 312
12. **H. Lei**, G. Fulcher, R. Ruan, and B. van Lengerich. 2008. Modeling mean residence time in a co-rotating twin screw extruder. *Cereal Chem.* 85(2):230–237.

## Patents and Copyrights

1. **H. Lei** and S. Ren. 2009. Filed patent, Novel catalyst and catalytic microwave pyrolysis for high quality biofuels and chemicals production with zero total acid number and enhanced aromatic compounds
2. **H. Lei** and S. Ren. 2009. Filed patent, Microwave-assisted thermo-pretreatment for biofuels and chemicals production
3. **H. Lei**, J. Julson, and I. Cybulska. 2009. Filed patent, Method of fractionating lignocellulosic material into lignin, cellulose and dissolved sugars with enhanced delignification and cellulose digestibility
4. **H. Lei**, J. Julson, and C. Keierleber. 2009. Filed patent, Process for producing corn ethanol - liquefaction and saccharification without alpha amylase and glucoamylase enzymes
5. R. Ruan, X. Pan, P. Chen, and **H. Lei**. 2007. Filed patent No. U/M Docket Z02102, A novel process for producing biopolymers from agricultural crop residuals

## Synergistic Activities

1. Editor, Division of Renewable Energy System, International, and Editor Board for *International J. Agricultural & Biological Engineering*
2. Associate Editor of Agro-Product and Food Processing Engineering International, and Editor Board for *International J. Agricultural & Biological Engineering*
3. Reviewer for the following technical journals:  
*International Journal of Agricultural and Biological Engineering*  
*Bioresource Technology*  
*Bioprocess and Biosystems Engineering*  
*Transaction of ASABE*  
*Journal of Applied Polymer Science*  
*International Journal of Hydrogen Energy*  
*Applied Biochemistry and Biotechnology*  
*Frontiers of Chemistry*  
*Cereal Chemistry*  
*Journal of Food Science*  
*International Journal of Food Properties*
4. Membership in professional organizations:  
 American Society of Agricultural and Biological Engineers (ASABE)  
 American Association of Cereal Chemists (AACC)  
 Institute of Food Technologists (IFT)  
 Association of Oversea Chinese Agricultural, Food and Biological Engineers (AOCAFBE)  
 Alpha Epsilon (The Honor Society of Agricultural, Food, and Biological Engineering)
5. Third Place Award of "Modeling die pressure, shaft torque, SME, and product temperature in a co-rotating twin-screw extruder". Paper No. 056113. AOC Paper Competition of ASABE Annual International Meeting, Tampa, Florida, 2005