

DR. HANWU LEI

Associate Professor
Bioproducts, Sciences and Engineering Laboratory
Department of Biological Systems Engineering
Washington State University

Email: hlei@wsu.edu; Phone: 509-372-7628; Website: <https://labs.wsu.edu/lei/>

EDUCATION

- 1/2006 **Ph.D.** in Biosystems and Agricultural Engineering, University of Minnesota, Twin-Cities
- 1/2003 **M.S.** in Biosystems and Agricultural Engineering, University of Minnesota, Twin-Cities
- 7/1992 **B.S.** in Grain Science and Engineering, Wuxi University of Light Industry, China

PROFESSIONAL EXPERIENCE

- 8/15- **Associate Professor** (tenured) and **Scientist**, Bioproducts, Sciences and Engineering Laboratory, Department of Biological Systems Engineering, Washington State University
- 8/09-8/15 **Assistant Professor** and **Scientist**, Bioproducts, Sciences and Engineering Laboratory, Department of Biological Systems Engineering, Washington State University
- 12/07-8/09 **Assistant Professor, Bioprocess Engineer**, and **Graduate Faculty**, 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, Twin-Cities
- 1/03-12/05 **Research Assistant**, Department of Bioproducts and Biosystems Engineering, Department of Food Science and Nutrition, University of Minnesota, Twin-Cities
- 9/02-12/07 **Teaching Assistant**, Department of Bioproducts and Biosystems Engineering, University of Minnesota, Twin-Cities
- 1/01-12/02 **Research Assistant**, Department of Bioproducts and Biosystems Engineering, University of Minnesota, Twin-Cities
- 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

PEER-REVIEWED JOURNAL ARTICLES (96) AND BOOK CHAPTERS (4) (* indicates corresponding author)

2018 Published Peer-Reviewed Journal Papers (4):

86. Y. Zhang, **H. Lei***, Z. Yang, K. Qian, E. Villota. 2018. Renewable High-Purity Mono-Phenol Production from Catalytic Microwave-Induced Pyrolysis of Cellulose over Biomass-Derived Activated Carbon Catalyst. *ACS Sustainable Chemistry & Engineering*. doi: 10.1021/acssuschemeng.8b00129.
85. Z. Yang, **H. Lei***, K. Qian, Y. Zang, E. Villota. 2018. Renewable bio-phenols from in-situ and ex-situ catalytic pyrolysis of douglas fir pellet over biobased activated carbons. *Sustainable Energy & Fuels*. doi: 10.1039/C7SE00607A.
84. D. Duan, R. Ruan, **H. Lei**, Y. Liu, Y. Wang*, Y. Zhang, L. Dai, Y. Zhao, Q. Wu, S. Zhang. 2018. Microwave-assisted co-pyrolysis of pretreated lignin and soapstock for upgrading liquid: Effect of pretreatment parameters on pyrolysis behavior. *Bioresource Technology*. doi: 10.1016/j.biortech.2018.02.119.
83. L. Wang*, **H. Lei***, J. Liu, Q. Bu. 2018. Thermal decomposition behavior and kinetics for catalytic pyrolysis of Douglas fir. *RSC Advances*, 8, 2196-2202. doi: 10.1039/C7RA12187C.

2017 Published Peer-Reviewed Journal Papers (10):

82. E. M. Villota, **H. Lei***, M. Qian, Z. Yang, S. M. A. Villota, Y. Zhang, and G. Yadavalli. 2017. Optimizing microwave-assisted pyrolysis of phosphoric-acid-activated biomass: impact of concentration on heating rate and carbonization time. *ACS Sustainable Chemistry and Engineering*. doi: 10.1021/acssuschemeng.7b03669.
81. L. Fan, Y. Zhang, S. Liu, N. Zhou, P. Chen, Y. Liu, Y. Wang, P. Peng, Y. Cheng, M. Addy, **H. Lei**, R. Ruan*. 2017. Ex-situ catalytic upgrading of vapors from microwave-assisted pyrolysis of low-density polyethylene with MgO. *Energy Conversion and Management*, 149, 432-441. doi: 10.1016/j.enconman.2017.07.039.
80. H. M. Morgan Jr, W. Xie, J. Liang, H. Mao, **H. Lei**, R. Ruan, Q. Bu*. 2017. A Techno-economic Evaluation of Anaerobic Biogas Producing Systems in Developing Countries. *Bioresource Technology*, doi: 10.1016/j.biortech.2017.12.013.
79. X. Zhang*, K. Rajagopalan, **H. Lei**, R. Ruan and B. K. Sharma. 2017. An overview of a novel concept in biomass pyrolysis: microwave irradiation. *Sustainable Energy and Fuels*, 8(1), 1664-1699. doi: 10.1039/c7se00254h.
78. J. Liang, H. M. Morgan Jr., Y. Liu, A. Shia, **H. Lei**, H. Mao, Q. Bu*. 2017. Enhancement of bio-oil yield and selectivity and kinetic study of catalytic pyrolysis of rice straw over transition metal modified ZSM-5 catalyst. *Journal of Analytical and Applied Pyrolysis*, 128, 324-334. doi: 10.1016/j.jaap.2017.09.018.
77. L. Fan, Y. Zhang, S. Liu, N. Zhou, P. Chen, Y. Cheng, M. Addy, Q. Lu, M. M. Omar, Y. Liu, Y. Wang, L. Dai, E. Anderson, P. Peng, **H. Lei**, R. Ruan*. 2017. Bio-oil from fast pyrolysis of lignin: Effects of process and upgrading parameters. *Bioresource technology*, 241, 1118-1126. doi: 10.1016/j.biortech.2017.05.

76. Y. Zhang, P. Chen, Sh. Liu; P. Peng; M. Min, Y. Cheng, E. Anderson; N. Zhou, L. Fan, C. Liu, G. Chen, Y. Liu, **H. Lei**, B. Li, R. Ruan*. 2017. Effects of feedstock characteristics on microwave-assisted pyrolysis-a review. *Bioresource Technology*, 230, 143-151. doi: 10.1016/j.biortech.2017.01.046.
75. H. M. Morgan JR., Q Bu*, J. Liang, H. Mao, A Shi, **H Lei**, R. Ruan. 2017. A review of catalytic microwave pyrolysis of lignocellulosic biomass for value-added bio-oil production. *Bioresource Technology*, 230:112-121. doi: 10.1016/j.biortech.2017.01.059.
74. G. Yadavalli, **H. Lei***, Y. Wei, L. Zhu, X. Zhang, Y. Liu, D. Yan. 2017. Carbon dioxide capture using ammonium sulfate surface modified activated biomass carbon. *Biomass and Bioenergy*, 98, 53-60. doi: 10.1016/j.biombioe.2017.01.015.
73. X. Zhang, **H. Lei***, L. Zhu, M. Qian, G. Yadavalli, J. Wu, S. Chen. 2017. From plastics to jet fuel range alkanes via combined catalytic conversions. *Fuel*, 188, 28-38. doi: 10.1016/j.fuel.2016.10.015.

2016 Published Peer-Reviewed Journal Papers (9):

72. X. Zhang, **H. Lei***, L. Zhu, X. Zhu, M. Qian, G. Yadavalli, J. Wu, S. Chen. 2016. Thermal behavior and kinetic study for catalytic co-pyrolysis of biomass with plastics. *Bioresource Technology*, doi: 10.1016/j.biortech.2016.08.068.
71. H. Ma, M. M. Addy, E. Anderson, W. Liu, Y. Liu, Y. Nie, P. Chen, B. Cheng, **H. Lei**, R. Ruan*. 2016. A novel process for low-sulfur biodiesel production from scum waste. *Bioresource Technology*, 214, 826-835. doi:10.1016/j.biortech.2016.05.029.
70. X. Zhang, **H. Lei***, L. Zhu, Y. Liu, G. Yadavalli, D Yan, X. Zhu, J. Chin, M. Qian. J. Wu, S. Chen 2016. Optimizing carbon efficiency of jet fuel range alkanes from cellulose co-fed with polyethylene via catalytically combined processes. *Bioresource Technology*, 214, 45-54. doi: 10.1016/j.biortech.2016.04.086.
69. Y. Wei, **H. Lei***, L. Zhu, X. Zhang, Y. Liu, G. Yadavalli, X. Zhu, M. Qian, D. Yan. 2016. Hydrocarbon produced from upgrading rich phenolic compound bio-oil with low catalyst coking. *Fuel*, 178: 77-84. doi:10.1016/j.fuel.2016.03.039.
68. X. Zhang, **H. Lei***, L. Zhu, M. Qian, X. Zhu, J. Wu, S. Chen. 2016. Enhancement of jet fuel range alkanes from co-feeding of lignocellulosic biomass with plastics via tandem catalytic conversions. *Applied Energy*, 173, 418-430. doi: 10.1016/j.apenergy.2016.04.071.
67. Q. Bu, **H. Lei***, M. Qian, G. Yadavalli. 2016. A thermal behavior and kinetics study of the catalytic pyrolysis of lignin. *RSC Advances*, 6, 100700-100707. doi: 10.1039/C6RA22967K.
66. X. Zhang, **H. Lei***. 2016. Synthesis of high energy-density jet fuel from plastics via catalytically integral processes. *RSC advances*, 6: 6154-6163. doi: 10.1039/c5ra25327f.
65. X. Zhang, **H. Lei***, J. Wu, S. Chen. 2016. Catalytic co-pyrolysis of lignocellulosic biomass with polymers: a critical review. *Green Chemistry*, 18, 4145-4169. DOI: 10.1039/C6GC00911E. **Published and featured with Front Cover Image**

64. X. Zhang, **H. Lei***, L. Zhu, M. Qian, J. C. Chan, X. Zhu, Y. Liu, G. Yadavalli, D Yan, L. Wang, Q. Bu, Y. Wei, J. Wu, S. Chen. 2016. Development of a catalytically green route from diverse lignocellulosic biomasses to high-density cycloalkanes for jet fuels. *Catalysis Science & Technology*, 6, 4210-4220. doi: 10.1039/C5CY01623A.

2015 Published Peer-Reviewed Journal Papers (10):

63. X. Zhang, **H. Lei***, L. Zhu, J. Wu, S. Chen. 2015. From lignocellulosic biomass to renewable cycloalkanes for jet fuels. *Green Chemistry*. 17: 4736-4747. DOI: 10.1039/C5GC01583A.
62. X. Zhang, **H. Lei***, L. Wang, L. Zhu, Y. Wei, Y. Liu, G. Yadavalli, D. Yan. 2015. Renewable gasoline-range aromatics and hydrogen-enriched fuel gas from biomass via catalytic microwave-induced pyrolysis. *Green Chemistry*. 17: 4029-4036. doi: 10.1039/C5GC00516G. Published in May 2015
61. X. Zhang, **H. Lei***, G. Yadavalli, L. Zhu, Y. Wei, Y. Liu. 2015. Gasoline-range Hydrocarbons produced from Microwave-induced Pyrolysis of Low-Density Polyethylene over ZSM-5. *Fuel*, 144: 33-42. doi: 10.1016/j.fuel.2014.12.013.
60. K. Li, Q. Gao*, G. Yadavalli, X. Shen, **H. Lei**, B. Han, K. Xia, and C. Zhou. 2015. Selective adsorption of Gd³⁺ on a magnetically retrievable imprinted chitosan/carbon nanotube composite with high capacity. *ACS Applied Materials & Interfaces*. 7(38), 21047-21055. doi: 10.1021/acsami.5b07560.
59. B. Xie; Y Chen*, M. Yu, X. Shen, **H. Lei**, T. Xie, Y. Zhang, Y. Wu. 2015. Carboxyl-Assisted Synthesis of Nitrogen-Doped Graphene Sheets for Supercapacitor Applications. *Nanoscale Research Letters*, 10:332-341, doi: 10.1186/s11671-015-1031-z.
58. X. Zhang, **H. Lei***, L. Wang, L. Zhu, Y. Wei, Y. Liu, G. Yadavalli, D Yan, J. Wu, S. Chen. 2015. Production of renewable jet fuel range alkanes and aromatics via integrated catalytic processes of intact biomass. *Fuel*, 160:375-385. doi: 10.1016/j.fuel.2015.08.006.
57. Q. Bu, **H. Lei***, L. Wang, G. Yadavalli, Y. Wei, X. Zhang, L. Zhu, Y. Liu. 2015. Biofuel production from catalytic microwave pyrolysis of Douglas fir pellets over ferrum-modified carbon catalyst. *Journal of Analytical and Applied Pyrolysis*, 112: 74-79. doi: 10.1016/j.jaap.2015.02.019.
56. **Invited Peer-Reviewed Journal Paper:** Y. Wei, **H. Lei***, L. Zhu, X. Zhang, G. Yadavalli, Y. Liu, D. Yan. 2015. Oxygen-containing fuels from high acid water phase pyrolysis bio-oils by ZSM-5 catalysis: kinetic and mechanism studies. *Energies*, 8(6), 5898-5915; doi: 10.3390/en8065898.
55. L. Zhu, **H. Lei***, L. Wang, G. Yadavalli, X. Zhang, Y. Wei, Y. Liu, S. Chen, and B. Ahring. 2015. Biochar of Corn Stover: Microwave-assisted Pyrolysis Condition Induced Changes in Surface Functional Groups and Characteristics. *Journal of Analytical and Applied Pyrolysis*. doi:10.1016/j.jaap.2015.07.012.

54. X. Shen, Y. Wang*, B. Ahring, **H. Lei**, Q. Gao, H. Liu. 2015. Isomerization of hexoses from enzymatic hydrolysate of poplar sawdust using low leaching K₂MgSiO₄ catalysts for one-pot synthesis of HMF. *RSC Advances*, 5, 96990-96996. doi: 10.1039/c5ra17132f.

2014 Published Peer-Reviewed Journal Papers (7):

53. L. Wang, **H. Lei***, Q. Bu, L. Zhu, Y. Wei, X. Zhang, Y. Liu, G. Yadavalli, J. Lee, S. Chen, and J. Tang. 2014. Aromatic hydrocarbons production from ex-situ catalysis of pyrolysis vapor over Zinc modified ZSM-5 in a packed-bed catalysis coupled with microwave pyrolysis reactor. *Fuel*, 129C, 78-85. doi: 10.1016/j.fuel.2014.03.052.
52. Q. Bu, **H. Lei***, L. Wang, Y. Wei, L. Zhu, X. Zhang, Y. Liu, G. Yadavalli and J. Tang. 2014. Bio-based phenols and fuel production from catalytic microwave pyrolysis of lignin by activated carbons. *Bioresource Technology*, 162C, 142-147. doi: 10.1016/j.biortech.2014.03.103.
51. S. Ren, **H. Lei***, L. Wang, G. Yadavalli, Y. Liu, J. Julson. 2014. The integrated process of microwave torrefaction and pyrolysis of corn stover for biofuel production. *Journal of Analytic and Applied Pyrolysis*, 108: 248-253. doi: 10.1016/j.jaap.2014.04.008.
50. **Invited Peer-Reviewed** Journal Paper: Y. Wei, **H. Lei***, Y. Liu, L. Wang, L. Zhu, X. Zhang, G. Yadavalli, B. Ahring, S. Chen. 2014. Renewable hydrogen produced from different renewable feedstocks by aqueous-phase reforming process. *Journal of Sustainable Bioenergy Systems*, 4(2): 113-127. doi: 10.4236/jsbs.2014.42011.
49. S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu. 2014. Hydrocarbons and hydrogen-rich syngas production by biomass catalytic pyrolysis and bio-oil upgrading over biochar catalysts. *RSC Advances*, 4 (21), 10731 – 10737. doi: 10.1039/c4ra00122b.
48. Q. Wang, **H. Lei**, L. Jiang, Q. Wen, W. Bai, Y. Zhong*. 2014. Optimization and evaluation of microencapsulation of star anise oleoresin. *Journal of Food Processing and Preservation*. 38(5):2129-2136. doi:10.1111/jfpp.12193.
47. Y. Wei, **H. Lei***, L. Wang, L. Zhu, X. Zhang, Y. Liu, S. Chen, B. Ahring. 2014. Liquid-liquid extraction of biomass pyrolysis bio-oil. *Energy and Fuels*, 28(2), 1207-1212. doi: 10.1021/ef402490s.

2013 Published Peer-Reviewed Journal Papers (11):

46. **Invited Peer-Reviewed** Journal Paper: **H. Lei***, I. Cybulska, J. Julson. Hydrothermal pretreatment of lignocellulosic biomass and kinetics. *Journal of Sustainable Bioenergy Systems*, 3(4): 250-259. doi: 10.4236/jsbs.2013.34034.
45. S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu. 2013. Thermal behavior and kinetic study for woody biomass torrefaction and torrefied biomass pyrolysis by TGA. *Biosystems Engineering*, 116, 4, 420-426. doi: 10.1016/j.biosystemseng.2013.10.003.
44. L. Wang, **H. Lei***, J. Lee, S. Chen, J. Tang, B. Ahring. 2013. Aromatic hydrocarbons from packed-bed catalysis coupled with microwave pyrolysis of Douglas fir sawdust pellets. *RSC Advances*, 34, 3, 14609 – 14615. doi: 10.1039/C3RA23104F.

43. Q. Bu, **H. Lei***, L. Wang, Y. Liu, J. Liang, Y. Wei, L. Zhu, and J. Tang. 2013. Renewable phenols production by catalytic microwave pyrolysis of Douglas fir sawdust pellets with activated carbon catalysts. *Bioresource Technology*, 142: 546-552. doi: 10.1016/j.biortech.2013.05.073.
42. S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu, J. Julson, and R. Ruan. 2013. The effects of torrefaction on compositions of bio-oil and syngas from biomass pyrolysis by microwave heating. *Bioresource Technology*, 135, 659-994. doi: 10.1016/j.biortech.2012.06.091.
41. B. Hu, W. Zhou, M. Min, Z. Du, P. Chen, X. Ma, Y. Liu, **H. Lei**, J. Shi, R. Ruan*. 2013. Development of an effective acidogenically digested swine manure-based algal system for improved wastewater treatment and biofuel and feed production. *Applied Energy*, 107, 255-263. doi: 10.1016/j.apenergy.2013.02.033.
40. R. Zhou, **H. Lei***, J. Julson. 2013. Reaction temperature and time and particle size on switchgrass microwave pyrolysis and reaction kinetics. *Int. J. Agr. Biol. Eng.*, 6(1): 53-61. doi: 10.3965/j.ijabe.20130601.005.
39. Z. Du, X. Ma, Y. Li, P. Chen, Y. Liu, X. Lin, **H. Lei**, R. Ruan*. 2013. Production of aromatic hydrocarbons by catalytic pyrolysis of microalgae with zeolites: Catalyst screening in a pyroprobe. *Bioresource Technology*, 139, 397-401 doi: 10.1016/j.biortech.2013.04.053.
38. R. Zhou, **H. Lei***, J. Julson. 2013. The Effects of pyrolytic conditions on microwave pyrolysis of prairie cordgrass and kinetics. *J. Analytic and Applied Pyrolysis*, 101, 172-176. doi: 10.1016/j.jaap.2013.01.013.
37. Z. Du, B. Hu, X. Ma, Y. Cheng, Y. Liu, X. Lin, Y. Wan, **H. Lei**, P. Chen, and R. Ruan*. 2013. Catalytic pyrolysis of microalgae and their three major components: carbohydrates, proteins, and lipids. *Bioresource Technology*, 130: 777-782. doi: 10.1016/j.biortech.2012.12.115.
36. I. Cybulska*, G. P. Brudecki, B. R. Hankerson, J. L. Julson, H. Lei. 2013. Catalyzed modified clean fractionation of switchgrass. *Bioresource Technology*, 127, 92-99. doi: 10.1016/j.biortech.2012.09.131.

2012 Published Peer-Reviewed Journal Papers (11):

35. L. Wang, **H. Lei***, S. Ren, Q. Bu, J. Liang, Y. Wei, Y. Liu, G. J. Lee, S. Chen, J. Tang, Q. Zhang, and R. Ruan. 2012. Aromatics and phenols from catalytic pyrolysis of Douglas fir pellets in microwave with ZSM-5 as a catalyst. *J. Analytic and Applied Pyrolysis*, 98, 194-200. doi: 10.1016/j.jaap.2012.08.002.
34. S. Ren, **H. Lei***, L. Wang, Q. Bu, Y. Wei, J. Liang, Y. Liu, J. Julson, S. Chen, J. Wu, and R. Ruan. 2012. Microwave torrefaction of Douglas fir sawdust pellet. *Energy & Fuels*, 26, 5936-5943. doi: 10.1021/ef300633c.
33. I. Cybulska*, G. Brudecki, K. Rosentrater, **H. Lei**, J. Julson. 2012. Catalyzed modified clean fractionation of prairie cordgrass integrated with hydrothermal post-treatment. *Biomass and Bioenergy*, 46, 389-401. doi: 10.1016/j.biombioe.2012.08.002.

32. **Invited Peer-Reviewed** Journal Paper: Q. Bu, **H. Lei***, A. H. Zacher, L. Wang, S. Ren, J. Liang, Y. Wei, Y. Liu, J. Tang, Q. Zhang, and R. Ruan. 2012. A review of catalytic hydrodeoxygenation of lignin-derived phenols from biomass pyrolysis. *Bioresource Technology*, 124, 470–477. doi: 10.1016/j.biortech.2012.08.089.
31. I. Cybulska*, G. Brudecki, K. Rosentrater, J. Julson, **H. Lei**. 2012. Comparative study of organosolv lignins extracted from prairie cordgrass, switchgrass and corn stover. *Bioresource Technology*, 118C: 30-36. doi: 10.1016/j.biortech.2012.05.073.
30. I. Cybulska, **H. Lei***, J. Julson, G. Brudecki. 2012. Optimization of Modified Clean Fractionation of Prairie Cord Grass. *Int. J. Agr. Biol. Eng.*, 5(2): 42-51. doi: 10.3965/j.ijabe.20120502.00?
29. B. Hu, M. Min, W. Zhou, Y. Li, M. Mohr, Y. Cheng, **H. Lei**, Y. Liu, X. Lin, P. Chen, R. Ruan*. 2012. Influence of exogenous CO₂ on biomass and lipid accumulation of microalgae *Auxenochlorella protothecoides* cultivated in concentrated municipal wastewater, *Appl. Biochem. Biotechnol.*, 166(7):1661-1673. doi: 10.1007/s12010-012-9566-2.
28. I. Cybulska, G. Brudecki, **H. Lei***, J. Julson. 2012. Optimization of combined clean fractionation and hydrothermal post-treatment of prairie cord grass. *Energy & Fuels*, 26(4): 2303–2309. doi: 10.1021/ef300249m.
27. Q. Wang, Z. Ou, **H. Lei**, X Zeng*, Y. Ying, W. Bai. 2012. Antimicrobial activities of a new formula of spice water extracts against foodborne bacteria. *J. food processing and preservation*, 36(4): 374-381. doi: 10.1111/j.1745-4549.2012.00691.x.
26. S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu, J. Julson, and R. Ruan. 2012. Biofuel production and kinetics analysis of microwave pyrolysis for Douglas fir sawdust pellet. *J. Analytic and Applied Pyrolysis*, 94: 163-169. doi: 10.1016/j.jaap.2011.12.004.
25. Q. Bu, **H. Lei***, S. Ren, L. Wang, Q. Zhang, J. Tang, and R. Ruan. 2012. Production of phenols and biofuels by catalytic microwave pyrolysis of lignocellulosic biomass. *Bioresource Technology*, 108:274-279. doi: 10.1016/j.biortech.2011.12.125.

2011 Published Peer-Reviewed Journal Papers (5):

24. Q. Bu, **H. Lei***, S. Ren, L. Wang, J. Holladay, Q. Zhang, J. Tang, and R. Ruan. 2011. Phenol and phenolics from lignocellulosic biomass by catalytic microwave pyrolysis. *Bioresource Technology*, 102: 7004–7007.
23. **H. Lei***, S. Ren, L. Wang, Q. Bu, J. Julson, J. Holladay, and R. Ruan. 2011. Microwave pyrolysis of distillers dried grain with solubles (DDGS) for biofuel production. *Bioresource Technology*, 102 (10) 6208–6213.
22. Y. Gao, W. Chen, **H. Lei***, Y. Liu, X. Lin, R. Ruan*. 2011. 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.*, 54(3): 1169-1174.

21. X. Lin, J. Zhang, **H. Lei***, Z. Jin, P. Chen, R. Roger*. 2011. Effects of different resistant starches on firmness and stickiness of dough by NMR evaluation. *Int. Agr. Eng. J.*, 19(4): 1-9.
20. W. Liu, C. Liu*, J. Liu, S. Yang, H. Zheng, **H. Lei**, R. Ruan, T. Li, Z. Tu, X. Song. 2011. Medium-chain fatty acids nanoliposomes for easy energy supply. *Nutrition*, 27: 700–706.

2010 Published Peer-Reviewed Journal Papers (6):

19. I. Cybulska, **H. Lei****, J. Julson. 2010. Hydrothermal pretreatment and enzymatic hydrolysis of prairie cord grass. *Energy & Fuels*, 24 (1): 718–727.
18. C. Yang, B. Zhang, J. Moen, K. Hennessy, Y. Liu, X. Lin, Y. Wan, **H. Lei***, P. Chen, and R. Ruan*. 2010. Fractionation and characterization of bio-oil from microwave-assisted pyrolysis of corn stover. *Int. J. Agr. Biol. Eng.*, 3(3): 54-61.
17. B. Zhang, C. Yang, J. Moen, Z. Le, K. Hennessy, Y. Wan, Y. Liu, **H. Lei**, P. Chen and R. Ruan*. 2010. Catalytic conversion of microwave-assisted pyrolysis vapors. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 32(18):1756-1762.
16. X. Lin*, L. Zhang, **H. Lei***, H. Zhang, Y. Cheng, R. Zhu, R. Ruan. 2010. Effect of drying technologies on quality of green tea, *Int. Agr. Eng. J.*, 19(3): 30-37.
15. H. Ding, Y. Gao, **H. Lei***, L. Luo, H. Chao, and R. Run*. 2010. The in vitro antioxidant effects of flavonoids of sweet potato vines. *Int. J. Food Properties.*, 13(2):360-368.
14. L. Gao, Y. Liu, **H. Lei***, H. Peng, R. Ruan*. 2010. Preparation of semirigid polyurethane foam (PUF) with liquefied bamboo residues. *J. Applied Polymer Sci.*, 116, 1694–1699.

2009 Published Peer-Reviewed Journal Papers (6):

13. J. Moen, C. Yang, B. Zhang, **H. Lei***, K. Hennessy, Y. Wan, Z. Le, Y. Liu, P. Chen, R. Ruan*. 2009. Catalytic microwave assisted pyrolysis of aspen. *Int. J. Agric. & Biol. Eng.*, 2009; 2(4): 70–75. Published in December 2009.
12. **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.
11. 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. *Int. J. Agric. & Biol. Eng.*, 2(2): 32-40.
10. 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.
9. 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. *Int. J. Agric. & Biol. Eng.*, 2(1): 40-50.
8. 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.

2008 Published Peer-Reviewed Journal Papers (3):

7. 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.
6. **H. Lei***, R. Ruan*, G. Fulcher, and B. van Lengerich. 2008. Color development in an extrusion cooked model system. *Int. J. Agric. & Biol. Eng.*, 1(2): 55-63.
5. **H. Lei***, G. Fulcher, R. Ruan*, and B. van Lengerich. 2008. Modeling mean residence time in a co-rotating twin screw extruder. *Cereal Chemistry*, 85(2):230-237.

2007 Published Peer-Reviewed Journal Papers (1):

4. **H. Lei***, G. Fulcher, R. Ruan*, and B. van Lengerich. 2007. Assessment of color development due to twin-screw extrusion of rice-glucose-lysine blend using image analysis. *LWT Journal of Food Sci. Tech.*, 40: 1224-1231.

2006 Published Peer-Reviewed Journal Papers (1):

3. **H. Lei***, G. Fulcher, R. Ruan*, and B. van Lengerich. 2006. SME-Arrhenius model for WSI of rice flour in a twin screw extruder. *Cereal Chemistry*, 83(5): 574-581.

2005 Published Peer-Reviewed Journal Papers (1):

2. **H. Lei***, G. Fulcher, R. Ruan*, and B. van Lengerich. 2005. Empirical modeling of die pressure, shaft torque, SME, and product temperature of rice flour in a co-rotating twin-screw extruder. *Cereal Chemistry*, 82(5): 582-587.

2004 Published Peer-Reviewed Journal Papers (1):

1. R. Ruan*, **H. Lei***, P. Chen, S. Deng, X. Lin, Y. Li, W. F. Wilcke, and G. Fulcher. 2004. Ozone-aided corn steeping process. *Cereal Chemistry*, 81(2):182-187.

Peer-Reviewed Journal Articles under Review (10):

10. Y. Zhang, **H. Lei***, D. Duan, E. Villota, C. Liu, R. Ruan. 2018. New Insight into Mechanism of Hydrogen Evolution Reaction on MoP (001) from First Principles. *ACS Applied Materials & Interfaces*. Submitted 03.2018
9. S. Ren, **H. Lei***, L. Wang, Q. Bu, Y. Wei, and R. Ruan. 2018. Furfural production from microwave catalytic torrefaction of Douglas fir sawdust. *Journal of Analytical and Applied Pyrolysis*. Submitted in 03.2018
8. L. Zhu, **H. Lei***, Y. Zhang, X. Zhang, L. Wang, Q. Bu, Y. Wei. 2018. Production of hydrocarbons from biomass through *in situ* microwave-assisted catalytic pyrolysis using biomass carbon catalyst. *Sustainable Energy & Fuels*. Submitted in 02.2018
7. M. Qian, **H. Lei***, X. Zhang, E. Villota, Y. Zhang, D. Duan. 2018. The structural and chemical functionality of sulfur-free acid insoluble and acid-soluble lignins affected by the alkaline extraction from Douglas fir. *Biomass and Bioenergy*. March 2018 submitted
6. P. Chen, E. Anderson, M. Addy, R. Zhang, Y. Cheng, P. Peng, Y. Ma, L. Fan, Y. Zhang, Q. Lucas, S. Liu, N. Zhou, W. Zhou, **H. Lei***, Y. Wang, Y. Liu, R. Roger. 2018. Breakthrough

Technologies for Biorefining of Organic Solid and Liquid Wastes. Engineering. Submitted on Dec. 2017

5. Y. Wei, W. Ji*, Y. Fang, J Hong, **H. Lei**. 2018. Effects and mechanism of alkaline pretreatment on biochar support formation and its application to SO₃H groups functionalized catalyst synthesis. *Energy & Fuels*. Submitted Oct. 2017
4. Y. Zhang, **H. Lei***, Z. Yang, D. Duan, E. Villota, R. Ruan. 2018. From Glucose-Based Carbohydrates to Phenol-rich Bio-oil Integrated with Syngas Production via Catalytic Pyrolysis over Activated Carbon Catalyst. *Green Chemistry*. March 2018 submitted
3. Z. Yang, **H. Lei***, Y. Zhang, K. Qian, E. Villota, M. Qian, G. Yadavalli, H. Sun. 2018. Production of Renewable Phenol from Catalytic Pyrolysis of Douglas Fir Sawdust over Biomass-derived Activated Carbons. *Applied Energy*. Submitted Dec 2017.
2. Z. Yang, K. Qian; X. Zhang, **H. Lei***, Y. Zhang, M. Qian, E. Villota. 2018. Process Design and Economics for the Conversion of Lignocellulosic Biomass into Jet Fuel Range Cycloalkanes. *Energy*. Submitted Dec 2017.
1. G. Yadavalli, **H. Lei***, Z. yang, Y. Zhang, E. Villota, M. Qian. 2018. Kinetic study of alkaline extraction of protein from canola meal. *Biotechnology and Bioengineering*, Dec 2017.

INVITED PEER REVIEWED BOOK CHAPTER (4)

Invited 2017 Published Peer-Reviewed Book Chapters (1):

4. X. Zhang, H. Lei*, and R. Ruan. 2017. Microwave-assisted pyrolysis of lignocellulosic biomass. In *Encyclopedia of Agricultural, Food, and Biological Engineering*. Ed. D. R. Heldman and C. I. Moraru. CRC Press. ISBN 9781439811115.

Invited 2016 Published Peer-Reviewed Book Chapters (1):

3. Q. Bu, H. M. Morgan JR., J. Liang, H. Lei*, R. Ruan. 2016. Catalytic microwave pyrolysis of lignocellulosic biomass. In *Advances in Bioenergy*. Eds. Y. Li, X. Ge. pp. 69–123. Elsevier. ISBN: 9780128095225.

Invited 2014 Published Peer-Reviewed Book Chapters (1):

2. L. Wang, **H. Lei***, R. Ruan. 2014. Techno-economic analysis of microwave assisted pyrolysis for production of biofuels. In *Production of Biofuels and Chemicals with Microwave and Ultrasound*, Springer Book Series - Biofuels and Biorefineries". Ed. Z. Fang, R. L. Smith, Jr., X. Qi. Springer. ISBN 978-94-017-9612-5, vol. 3, pp251-263.

Invited 2013 Published Peer-Reviewed Book Chapters (1):

1. I. Cybulska, G. Brudecki, **H. Lei***. 2013. Hydrothermal pretreatment of lignocellulosic biomass. In *Green Biomass Pretreatment and Processing Methods for Bioenergy Production*. Ed. T. Gu. Springer. ISBN: 978-94-007-6052-3.

GRANTS

38. **H. Lei (PI/PD)**, Nano cellulose-based nanoparticle catalysts for bio-jet fuel ranged cycloalkanes production. USDA/NIFA. 03/2018-02/2022.

37. Z. Yang (PI/PD), **H. Lei (Co-PI/PD)**, J. Canin, H. Sun, Bio-phenols production from lignocellulosic biomass. USDA NIFA. 09/2016-12/2017.
36. **H. Lei (PI)**, Conversion of biomass feedstock to bio-oils by microwave pyrolysis, Creative Energy Systems, a Nevada S-Corporation with offices in Larkspur, CO. 10/2016-12/2019.
35. **H. Lei (PI)**, Microwave drying of biomass feedstock with high moisture content, Creative Energy Systems, a Nevada S-Corporation with offices in Larkspur, CO. 06/2016-12/2019.
34. **H. Lei (PI)**, service test microwave pyrolysis from a biomass feedstock, Creative Energy Systems, a Nevada S-Corporation with offices in Larkspur, CO. 09/2015-09/2018.
33. **H. Lei (PI)**, Bio-oils from microwave pyrolysis of biomass, Creative Energy Systems, a Nevada S-Corporation with offices in Larkspur, CO. 01/2015-12/9999.
32. **H. Lei (PI)**, Conversion of biomass feedstock to bio-oils by microwave pyrolysis, Creative Energy Systems, a Nevada S-Corporation with offices in Larkspur, CO. 12/2014-12/9999.
31. **H. Lei (PI/PD)**, Aromatic hydrocarbons from agricultural and forest wastes using biomass derived carbon catalysts. USDA NIFA. 01/2016-12/2020.
30. **H. Lei (PI/PD)**, K. Zhong, L. Scudiero, T. Marsh, P. Tozer, Applying Abundant Plants to Develop Battery Materials and Study the Benefits on Agricultural Economy. USDA NIFA. 12/2014-12/2018.
29. **H Lei (PI)**. High energy dense bio-fuels from a versatile conversion system: feedstocks and processes for securing bio-aromatic hydrocarbons, Commercialization Gap Fund, WSU Office of Commercialization, WSU Office of Commercialization, the Offices of the President and Provost in conjunction with the Vice President of Research, and the Washington Research foundation. 12/2014-03/2016.
28. **H Lei (PI/PD)**, Jun Liu (Tianjin Institute of Industrial Biotechnology, Chinese Academy of Science), R Ruan (University of Minnesota). Straw fast pyrolysis technology and key equipment cooperative research. China International Science and Technology Exchange Center Cooperation Program, China International Science and Technology Cooperation Office, Chinese Ministry of Science and Technology. 7/2015-6/2018.
27. A Ameli (PI), **H Lei (Co-PI)**, etc. A Differential Scanning Calorimeter for interdisciplinary research and education. Chancellor's Equipment Grant Program. 09/2016-09/2016.
26. **H Lei (PI)**. Acquisition of a High Performance Microtherm-Split-Tube Furnace Reactor Integrated with Micro Parr Reactor, Chancellor's Equipment Grant Program. 11/2014-12/2015.
25. **H Lei (PI)**. Hydrogen saving process for cycloalkanes (naphthenes) in jet fuels from diverse Washington state forest biomasses. Joint Center for Aerospace Technology and Innovation, Joint Industry-University Research Program. 07/2014-06/2015.

24. **H Lei (PI)**. Aromatic hydrocarbons for aviation biofuels from Lignocellulosic Biomass. Joint Center for Aerospace Technology and Innovation, Joint Industry-University Research Program. 07/2013-06/2014.
23. **H. Lei (PI)**. WSU Research and Development. 7/2014-6/2015.
22. W.H. K. Zhong, M. Grant Norton, Louis Scudiero, Thomas Marsh, **Hanwu Lei (Co-PI)**, Advanced Lithium-ion Batteries Incorporating Bio-and Nano-materials and the Effects on the Agricultural Economy. WSU Research Advancement Challenge (RAC) Competition program. 10/2012-09/2013.
21. R. Cavalieri (PI). Co-led by WSU and MIT, including an additional 14 university partners and more than 50 industry and national laboratory partners throughout the United States. FAA Center of Excellence for Alternative Jet Fuel and Environment. Federal Aviation Administration. **H. Lei** sub-project: Lignocellulose biomass conversion to aromatic hydrocarbons for alternative jet fuels. US Federal Aviation Administration. 09/2013 - 8/2023.
19. **H. Lei (PI)**. WSU Research and Development. 7/2011-6/2014.
20. **H. Lei (PI)**. WSU Research and Development. 7/2010-6/2011.
18. **H. Lei (PI)**. Torrefaction as Biomass Pretreatment for Fluid-Bed Pyrolysis. US DOE Office of Biomass Program through PNNL. 11/2011-3/2013.
17. B. Ahring and **H. Lei (Co-PI)**. USDA NARA New Vista Green Fuels and Chemicals. 8/2010 - 5/2013.
16. **H. Lei (PI)**. WSU Biological Systems Engineering RA Funds. 1/2012 - 6/2013.
15. **H Lei (PI)**. Torrefaction as a pretreatment method to improve biofuel quality. WSU Office of Research Competitive Program. 05/2010-08/2012.
14. D. C. Elliott and **H. Lei (Co-PI)**. Infrastructure: Create a more flexible, more reliable, and higher capacity U.S. energy infrastructure. DOE Laboratory Directed Research and Development Program. 11/2009-10/2011.
13. National Renewable Energy Laboratory, Pacific Northwest National Laboratory, Albemarle Corporation, Amyris Biotechnologies, Argonne National Laboratory, BP Products North America Inc., Catchlight Energy, LLC, Colorado School of Mines, Iowa State University, Los Alamos National Laboratory, Pall Corporation, RTI International, Tesoro Companies Inc., University of California, Davis, UOP, LLC, Virent Energy Systems, Washington State University (B. Ahring, **H Lei**), National Advanced Biofuels Consortium (NABC). US DOE. 08/2010-08/2013.
12. **H. Lei (PI/PD)** and J. Julson. Development of microwave torrefaction/pyrolysis of biomass and biochar utilization. DOE through SunGrant Program. 06/2009-6/2012.
11. Collaborating institutions: South Dakota State U, SDSMT, Kansas State U, North Carolina State U, U New York at Stony Brook, U Hawaii. Center for Biofuels Research and Development. NSF, I/UCRC Program. 10/2008-9/2013. **Team Member of SDSU**

10. R. Ruan, Schmidt, Kiittelson, P. Chen, **H. Lei (Co-PI)**, Tiffany, D. Raynie, W. Gibbons, K. Muthukumarappan, Kittelson. Develop sustainable renewable energy systems for practical utilization of bulky biomass. US DOD through SunGrant Program. 9/2007-8/2011.
9. **H. Lei (PI/PD)** and J. Julson. Hydrothermal pretreatment and clean fractionation of lignocelluloses biomass for production of biobased products and fuels. SD research and Commercialization Council. 07/2008-06/2012.
8. **H. Lei (PI/PD)**, J. Julson, K. Muthukumarappan, D. Raynie, R. Gelderman. Development of a novel pyrolytic process for the conversion of corn biomass to biofuels and char residue. SD Corn Utilization Council. 7/2008-6/2010.
7. **H. Lei (PI/PD)**, V. Kelley, J. Julson, K. Muthu, S. A. Clay, G. Warmann. Development of an interactive input/output process and cost model with consideration of impacts of the end use of the biochar on the carbon status of the fuels or products made in the thermochemical conversion process. USDA. 7/2008-6/2010.
6. **H. Lei (PI/PD)** and J. Julson. Biomass torrefaction and catalytic pyrolysis to improve biofuel quality. SDSU Agricultural Experimental Station. 10/2008-9/2010.
5. **H. Lei (PI/PD)**, C. R. Keierleber, J. Julson. Development of corn ethanol process – liquefaction without alpha amylase. SDSU Bentley and Griffith Undergraduate Research Program. 6/2008-12/2009.
4. D. D. Malo, S.A. Clay, T.E. Schumacher, H.J. Woodard, D.E. Clay, and R.H. Gelderman, **H. Lei (Co-PI)**, and J. Julson. Interactions of biochar source/properties impacts on soil properties, c sequestration potential, and crop management. US DOE. 8/2008-7/2010.
3. R. Ruan (PI, UMN) and **H. Lei (Co-PI)**. Evaluation of ethanol production from extrusion-cooked corn starch. Buhler Group Inc. 1/2007-12/2007.
2. R. Ruan (PI, UMN) and **H. Lei (Co-PI)**. Extrusion scale-up and systematical analysis of screw configurations. General Mills Inc. 1/2006-12/2006.
1. R. Ruan (PI), P. Chen (UMN), R. Barros (UMN), F. Rigelhof (UMN), M. French (UMN), **H. Lei (Co-PI)**. Extraction, characterization and utilization of anthocyanins from red corn. French Ag Research Inc. 7/2004-12/2006.

PROCEEDING ARTICLES (22)

2017 Proceedings (2):

22. E. M. Villota, **H Lei***, Z. Yang, Y. Zhang, G. Yadavalli, M. Qian, K. Qian, S. M. Villota, L. Zhu. 2017. Microwave-assisted Carbonization of Phosphoric Acid Activated Biomass. 2017 ASABE Annual International Meeting, Paper#1701213, doi:10.13031/aim.201701213
21. G. Yadavalli, **H. Lei***, Z. Yang, Y. Zhang, E. Villota, M. Qian, L. Zhu. 2017. The effect of canola protein extraction conditions on the kinetic parameters of a two-site extraction model. 2017 ASABE Annual International Meeting, Paper#1701289, doi:10.13031/aim.201701289

2015 Proceedings (2):

20. L. Zhu, **H. Lei***, X. Zhang, G. Yadavalli, Y. Wei, Y. Liu. 2015. Preparation and characterization of biochar and activated carbon based solid acid catalysts for catalytic microwave pyrolysis. 2015 ASABE Annual International Meeting, New Orleans, Louisiana, July 26 - 29, 2015
19. X. Zhang, **H. Lei***, L. Zhu, G. Yadavalli, Y. Wei, Y. Liu, D. Yan. 2015. Renewable jet fuel range alkanes from integrated catalytic processes of Douglas fir sawdust. 2015 ASABE Annual International Meeting, New Orleans, Louisiana, July 26 - 29, 2015

2014 Proceedings (3):

18. Y. Wei, **H. Lei***, L. Wang, L. Zhu, X. Zhang, Y. Liu. Advanced upgrading of pyrolysis bio-oil via liquid-liquid extraction and esterification by zeolite catalysis. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014. doi: 10.13031/aim.20141893057
17. L. Zhu, **H. Lei***, L. Wang, X. Zhang, Y. Wei, Y. Liu, G. Yadavalli. Characterization of surface functional groups in corn stover biochar derived from microwave-assisted pyrolysis. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014. doi: 10.13031/aim.20141893447
16. X. Zhang, **H. Lei***, L. Wang, Y. Wei, L. Zhu, Y. Liu, G. Yadavalli. Aromatic Hydrocarbons from Microwave-induced Pyrolysis of Cellulose over ZSM-5. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014. doi: 10.13031/aim.20141894632

2013 Proceedings (8):

15. L. Wang, **H. Lei***, Q. Bu, L. Zhu. Aromatic hydrocarbons production from catalysis of douglas fir sawdust pellets pyrolysis vapor over zeolite catalyst. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013. <http://www3.aiche.org/proceedings/content/Annual-2013/extended-abstracts/P320497.pdf>
14. L. Zhu, **H. Lei***, L. Wang. Catalytic Microwave Pyrolysis of Douglas Fir Pellets With Carbon Catalysts Derived From Corn Stover. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013. <http://www3.aiche.org/proceedings/content/Annual-2013/extended-abstracts/P320456.pdf>
13. Y. Wei, **H. Lei***. Advanced Upgrading of Pyrolysis Oil Via Liquid-Liquid Extraction. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013. <http://www3.aiche.org/proceedings/content/Annual-2013/extended-abstracts/P316352.pdf>
12. Q. Bu, **H. Lei***, L. Wang, and J. Tang. Biofuel production and kinetics study of catalytic microwave pyrolysis of douglas fir pellet over activated carbon supported metal catalyst. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013. <http://www3.aiche.org/proceedings/content/Annual-2013/extended-abstracts/P307886.pdf>
11. L. Wang, **H. Lei***, Q. Bu, L. Zhu, Y. Liu, J. Lee, S. Chen, and J. Tang. 2013. Catalytic upgrading of Douglas fir sawdust pellet vapors over Zn/ZSM-5 catalysts in a packed-bed

catalysis reactor. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting, 2013(3): 1869-1888. doi: <http://dx.doi.org/10.13031/aim.20131594800>.

10. Q. Bu, **H. Lei***, L. Wang, and J. Tang. 2013. Renewable phenols and fuel production from catalytic pyrolysis of lignin using microwave irradiation heating. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting, 2013 (2): 1707-1740. doi: <http://dx.doi.org/10.13031/aim.20131594593>.
9. L. Zhu, **H. Lei***, L. Wang, Q. Bu, Y. Wei, Y. Liu, and J. Liang. 2013. Carbon catalyst from corn stover and its application to catalytic microwave pyrolysis. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting, 2013(3): 1854-1860. doi: <http://dx.doi.org/10.13031/aim.20131594788>
8. Y. Wei and **H. Lei***. 2013. Advanced upgrading of pyrolysis oil via liquid-liquid extraction. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting, 2013(2): 1701-1706. doi: <http://dx.doi.org/10.13031/aim.20131594590>

2012 Proceedings (1):

7. Q. Bu, **H. Lei***, S. Ren, L. Wang, Y. Liu, J. Liang, Y. Wei, Q. Zhang, J. Tang, and R. Ruan. 2012. Phenols and fuels from catalytic microwave pyrolysis of lignocellulosic biomass. American Society of Agricultural and Biological Engineers (ASABE) 2012 Annual International Meeting, 2012(2): 1147-1162. doi: [10.13031/2013.41768](http://dx.doi.org/10.13031/2013.41768)

2011 Proceedings (4):

6. **H. Lei***, S. Ren, J. Julson, L. Wang, Q. Bu, and R. Ruan. 2011. Microwave torrefaction of corn stover and tech-economic analysis. ASME 2011 International Manufacturing Science and Engineering Conference, MSEC 2011. ISBN: 978-0-7918-4430-4, 1: 685-692.
5. S. Ren, **H. Lei***, J. Julson, L. Wang, Q. Bu, and R. Ruan. 2011. Microwave torrefaction of corn stover. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, 2011(6): 4579-4591. doi: [10.13031/2013.37301](http://dx.doi.org/10.13031/2013.37301)
4. L. Wang, **H. Lei***, S. Ren, Q. Bu, J. Tang, Q. Zhang, and R. Ruan. 2011. Microwave assisted pyrolysis of Douglas fir pellets over ZSM-5 zeolite catalysts. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, 2011(6): 5241-5252. doi: [10.13031/2013.37342](http://dx.doi.org/10.13031/2013.37342)
3. S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu, and R. Ruan. 2011. Microwave pyrolysis of Douglas fir sawdust pellet. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, 2011(2): 1334-1348. doi: [10.13031/2013.37300](http://dx.doi.org/10.13031/2013.37300)

2010 Proceedings (2):

2. I. Cybulska, **H. Lei***, and J. Julson. 2010. Hydrothermal pretreatment and enzymatic hydrolysis of prairie cord grass. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, 2011(3): 2312-2334. doi: [10.13031/2013.29737](http://dx.doi.org/10.13031/2013.29737)

1. I. Cybulska, **H. Lei***, and J. Julson. 2010. Integrated process of clean fractionation and hydrothermal treatment for prairie cord grass. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, 2011(3): 2349-2376. doi: 10.13031/2013.32003

RESEARCH MENTORSHIP AND ADVISING ACTIVITY

Supervised Postdoctoral Research Associate (4)

Yayun Zhang, PhD, Department of Biological Systems Engineering, WSU (Postdoctoral Research Associate since Oct. 2016). Postdoctoral project: Fundamental studies, modelling and computing development of biomass conversion pathways, kinetics, mechanism, and techno-economic analysis.

Zixu Yang, PhD, Department of Biological Systems Engineering, WSU (Postdoctoral Research Associate Oct. 2016-Dec. 2017). Postdoctoral project: Fundamental studies and development of carbon based catalysts and zeolite based catalysts in catalytic processes, bio-oil upgrading, and biochar utilization for fuels and chemicals production.

Kezhen Qian, PhD, Department of Biological Systems Engineering, WSU (Postdoctoral Research Associate since Feb. 2017-Dec. 2017). Postdoctoral project: Development of carbon based catalysts and zeolite based catalysts in catalytic processes, bio-oil upgrading, and biochar utilization for fuels and chemicals production.

Lu Wang, PhD, Department of Biological Systems Engineering, WSU (postdoctoral from Sep. 2013-Feb 2015); Post-doctoral project: catalysis processes for jet fuels from lignocellulosic biomass

Supervised Post-MS Research Associate (3)

Yupeng Liu, MS, Department of Biological Systems Engineering, WSU (post-MS from May. 2015-Dec. 2016); Post-MS project: *Lignin separation and catalytic conversion for jet fuels production*

Gayatri Yadavalli, **MS**, Department of Biological Systems Engineering, WSU (post-MS from Jan. 2015-June 2017); Post-MS project: *CO₂ absorbent and Protein separation*

Di Yan, **MS**, Department of Biological Systems Engineering, WSU (post-MS from Jan. 2015-Dec. 2016); Post-MS project: *Microwave pyrolysis and activated carbon*

Supervised Visiting Scholar/Professor (1)

Xiang Shen, PhD, Associate Professor from China University of Geosciences, WSU BSEL (Visiting Professor from March 2014-March 2015); Project: catalysis conversions for lignin and sugars; Co-supervised with Dr. B. Ahring

Advised 15 PhD and 5 MS Students as Major Professor/Advisor (20)

as Major Professor/Advisor for Graduated PhD Students (8)

8. Lei Zhu, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Aug. 2012-Nov. 2016); PhD dissertation: Development of microwave pyrolysis biochar as carbon catalyst for aviation biofuels production (Graduated Spring 2017)

7. Xuesong Zhang, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Jan. 2013-Aug. 2016). PhD dissertation: *Upgrading bio-oils from Douglas fir pellets pretreated by lime from packed-bed catalysis over Ni/HZSM-5 coupled with microwave-assisted pyrolysis* (Graduated Spring 2016)
6. Yi Wei, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Aug. 2011-Aug. 2015; Now Associate Professor at Zhejiang University of Technology); PhD dissertation: *pyrolysis oil upgrading via liquid extraction, esterification and upgrading via zsm-5* (Graduated Spring 2015)
5. Shoujie Ren, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Jan. 2010-Dec. 2012; Now post-doc at University of Tennessee); PhD dissertation: *Catalytic microwave torrefaction and pyrolysis of douglas fir pellet to improve biofuel quality* (Graduated Fall 2012)
4. Lu Wang, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Aug. 2010-Aug. 2013; Now Associate Professor at Hefei University of Technology; post-doc at Washington State University); PhD dissertation: *Aromatic hydrocarbons production from catalyst assisted microwave pyrolysis of Douglas fir sawdust pellet* (Graduated Summer 2013)
3. Quan Bu, **PhD**, Department of Biological Systems Engineering, WSU (Research Assistant from Aug. 2010-Aug. 2013; Now Assistant Professor at Nanjing Forestry University); PhD dissertation: *Catalytic microwave pyrolysis of biomass for renewable phenols and fuels* (Graduated Summer 2013)
2. Rui Zhou, **PhD**, Biological and Agricultural Engineering, SDSU (Research Assistant from Jan. 2008-Aug. 2015); PhD dissertation: *Microwave pyrolysis of biomass and kinetics* (Graduated Spring 2015).
1. Iwona Cybulska, **PhD**, Department of Agricultural and Biosystems Engineering, SDSU (Research Assistant from Oct. 2008-May 2012; Now post-doc at Masdar Institute of Science and Technology); PhD dissertation: *Pretreatment methods for lignocellulosic materials employed to produce fuel ethanol and value-added products* (Graduated Spring 2012)

as Major Professor/Advisor for Graduated MS Students (4)

4. Cindy Angelia, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Aug. 2017) (Graduated Summer 2017)
3. Yupeng Liu, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2011-May. 2015) MS thesis: *Torrefaction of Douglas fir pellets and catalytic upgrading of torrefaction vapors* (Graduated Spring 2015)
2. Gayatri Yadavalli, **MS**, Department of Environmental Engineering, WSU (Aug. 2013-Dec. 2014); MS thesis: *Chemical activation of biochar produced by microwave pyrolysis of biomass for use in water treatment* (Graduated Fall 2014)
1. Jing Liang, **MS**, Department of Biological Systems Engineering, WSU (Research Assistant from Aug. 2011-Aug. 2013; Now PhD student at University of California, Riverside); MS

project title: *Formate-assisted microwave pyrolysis of Douglas fir pellet* (Graduated Summer 2013)

as Major Professor/Advisor for Current PhD Students (4)

4. Wendy Mateo, PhD Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2017-Aug. 2021); PhD dissertation: Development of carbon catalysts for high value chemicals and jet fuels (in progress)
3. Elmar Villota, PhD Research Assistant, Department of Biological Systems Engineering, WSU (Jan. 2015-Dec. 2017); PhD dissertation: Development of carbon catalysts for high value chemicals and jet fuels (in progress)
2. Marie Qian, PhD Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Dec. 2018); PhD dissertation: *Lignin separation and catalytic conversion for bio jet fuels production* (in progress)
1. Denge Duan, PhD Research Assistant, Department of Biological Systems Engineering, WSU and Nanchang University (Aug. 2016-Aug. 2020); PhD dissertation: Development of catalysts for high value chemicals and biofuels (in progress)

as Major Professor/Advisor for Un-graduated PhD Students (3)

3. Charlie Shaw, PhD Research Assistant, Department of Biological Systems Engineering / Environmental Science, WSU (Jan. 2014-Oct. 2016)
2. Xiaolu Zhu, PhD Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Aug. 2016)
1. Jouchin Chan, PhD Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Jan. 2016)

as Major Professor/Advisor for Current MS Students (1)

1. Shiela Villota, MS Research Assistant, Department of Biological Systems Engineering, WSU and Central Luzon State University (Jan. 2016-Aug. 2018) (in progress)

as Major Professor/Advisor for Undergraduate Students (4)

4. Rania AL Wand, Undergraduate Research Assistant, Department of Biological Systems Engineering, WSU (Graduated Fall 2017)
3. Joanne AL Wand, Undergraduate Research Assistant, Department of Biological Systems Engineering, SDSU (Graduated Fall 2017)
2. Christine Rae Keierleber, Undergraduate Research Assistant, Department of Agricultural and Biosystems Engineering, SDSU (Graduated Fall 2010)
1. Pauline Robin, Undergraduate Research Assistant, Department of Agricultural and Biosystems Engineering, SDSU (Graduated Fall 2009)

Served as Committee Chair on Ph.D. Program of Study Committees (15)

15. Wendy Mateo, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)

14. Elmar Villota, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)
13. Marie Qian, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)
12. Dengle Duan, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU and Nanchang University (in progress)
11. Xiaolu Zhu, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (August 2015-July 2016)
10. Jouchin Chan, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (August 2015-Dec 2016)
9. Charlie Shaw, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (Jan. 2014-July 2017)
8. Lei Zhu, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated fall 2016)
7. Xuesong Zhang, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated spring 2016)
6. Yi Wei, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Spring 2015)
5. Lu Wang, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
4. Quan Bu, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
3. Shoujie Ren, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Fall 2012)
2. Iwona Cybulska, PhD, Major in Biological and Agricultural Systems Engineering, SDSU (Graduated Spring 2012)
1. Rui Zhou, PhD, Major in Biological and Agricultural Systems Engineering, SDSU (Graduated Spring 2015)

Served as Committee Member on Ph.D. Program of Study Committees (21)

21. Anamaria Pinheiro Pires, PhD Research Assistant/Jan. 2017/Dec. 2020 (in progress);
20. Michael Apasiku, PhD Research Assistant/Aug. 2016/Aug. 2019 (passed PhD preliminary exam in Fall 2017; in progress).
19. Na Pang, PhD Research Assistant/Jan. 2015/Dec. 2019 (passed PhD preliminary exam in Spring 2017; in progress);

18. Nanditha Murali, PhD Research Assistant/Aug. 2012/Aug. 2017 (passed PhD preliminary exam in Fall 2015; in progress).
17. Shuai Zhang, PhD Research Assistant/Aug. 2013/Aug. 2017 (Graduated in Summer 2017).
16. Mohammadali Azadfar, PhD Research Assistant/Aug. 2012/Aug. 2016 (Graduated Spring 2016);
15. Wendy Mateo, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)
14. Elmar Villota, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)
13. Marie Qian, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (in progress)
12. Dengle Duan, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU and Nanchang University (in progress)
11. Xiaolu Zhu, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (August 2015-July 2016)
10. Jouchin Chan, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (August 2015-Dec 2016)
9. Charlie Shaw, PhD Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (Jan. 2014-July 2017)
8. Lei Zhu, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated fall 2016)
7. Xuesong Zhang, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated spring 2016)
6. Yi Wei, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Spring 2015)
5. Lu Wang, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
4. Quan Bu, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
3. Shoujie Ren, PhD, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Fall 2012)
2. Iwona Cybulska, PhD, Major in Biological and Agricultural Systems Engineering, SDSU (Graduated Spring 2012)

1. Rui Zhou, PhD, Major in Biological and Agricultural Systems Engineering, SDSU (Graduated Spring 2015)

Served as Committee Chair on M.S. Program of Study Committees (5)

5. Shiela Villota, MS Research Assistant, Department of Biological Systems Engineering, WSU and Central Luzon State University (Jan. 2016-Aug. 2018) (in progress)
4. Cindy Angelia, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Aug. 2017) (Graduated Summer 2017)
3. Jing Liang, MS, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
2. Gayatri Yadavalli, MS Research Assistant, Major in Environmental Engineering, WSU (Graduated Fall 2014)
1. Yupeng Liu, MS Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Spring 2015)

Served as Committee Member on M.S. Program of Study Committees (10)

10. Shiela Villota, MS Research Assistant, Department of Biological Systems Engineering, WSU and Central Luzon State University (Jan. 2016-Aug. 2018) (in progress)
9. Lisa Middleton, MS Research Assistant, Department of Environmental Science, (Aug. 2016-Aug. 2019) (in progress)
8. Cindy Angelia, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2015-Aug. 2017) (Graduated Summer 2017)
7. Pei-Yu Leu, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2013-June 2016 (Graduated Summer 2016)
6. Sergio Baravalle, MS Research Assistant, Department of Biological Systems Engineering, WSU (Aug. 2013-Aug. 2015 (Graduated Summer 2015)
5. Yupeng Liu, MS Research Assistant, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Spring 2015)
4. Benjamin Garrett, MS Research Assistant, Department of Chemical Engineering, WSU (Aug. 2011-Aug. 2014 (Graduated Summer 2014)
3. Gayatri Yadavalli, MS Research Assistant, Major in Environmental Engineering, WSU (Graduated Fall 2014)
2. Jing Liang, MS, Major in Biological and Agricultural Systems Engineering, WSU (Graduated Summer 2013)
1. Charlie Shaw, MS Research Assistant, Major in Environmental Science, WSU (Graduated Summer 2012)

COURSES TAUGHT BY SEMESTER AND INSTRUCTOR RATINGS

2017 Teaching

- **H. Lei (100% contribution).** Taught BSysE 593 Renewable Energy Technologies, 3cr, Fall 2017.
- **H. Lei (100% contribution).** Taught BSysE 552 Advanced Biological Systems Engineering Topics: Mass Balances, Energy Balances & Unit Operation, 3cr, Spring 2017.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 4 PhD Students, Fall 2017.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 4 PhD Students, Spring 2017.
- **H. Lei.** BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Spring 2017.
- **H. Lei.** Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2016 Teaching

- **H. Lei (100% contribution).** Taught BSysE 551 Advanced Biological Systems Engineering Topics: Energy Balances & Unit Operation, 3cr, Spring 2016.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Fall 2016.
- **H. Lei.** BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Fall 2016.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 4 PhD Students, Spring 2016.
- **H. Lei.** BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Spring 2016.
- **H. Lei.** ENVR_SCI 800, Doctoral Research, Dissertation, and/or Examination, Taught 1 PhD student, Spring 2016.
- **H. Lei.** Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2015 Teaching

- **H. Lei (100% contribution).** Taught BSysE 593 Renewable Energy Technologies, 3cr, Fall 2015. Overall Average Evaluation: 4.8 out of 5.
- **H. Lei (100% contribution).** Taught BSysE 552 Advanced Biological Systems Engineering Topics, 3cr, Spring 2015.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 5 PhD Students, Fall 2015.
- **H. Lei.** BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Fall 2015.
- **H. Lei.** ENVR_SCI 800, Doctoral Research, Dissertation, and/or Examination, Taught 1 PhD student, Fall 2015.
- **H. Lei.** BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Spring 2015.
- **H. Lei.** BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Spring 2015.

- **H. Lei.** ENVR_SCI 800, Doctoral Research, Dissertation, and/or Examination, Taught 1 PhD student, Spring 2015.
- **H. Lei.** Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2014 Teaching

- **H. Lei (100% responsibility).** Taught ENVR_SCI 490/590 Biomass Conversions for Bioenergy and Bioproducts, 2cr, Fall 2014. Overall Average Evaluation: 4.60 out of 5.
- **H. Lei (50% responsibility)** and S Sablani. Taught BSysE 598 Graduate Seminar, 1cr, Fall 2014. Overall Average Evaluation: 3.99 out of 5.
- B. Arhing, K. Thomsen, **H. Lei** (75 minutes lecture). Guest-Lectured CHE 581 Advanced Topics in Chemical Engineering, 3 cr, Fall 2014.
- **H. Lei.** BSysE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Fall 2014.
- **H. Lei.** BSysE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Fall 2014.
- **H. Lei.** CE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Fall 2014.
- **H. Lei.** BSysE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Spring 2014.
- **H. Lei.** BSysE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Spring 2014.
- **H. Lei.** CE 700, Master's Special Problems, Directed Study and/or Examination, Taught 1 MS student, Spring 2014.
- **H. Lei.** Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2013 Teaching

- **H. Lei (100% responsibility).** Taught BSysE 593 Renewable Energy Technologies, 3cr, Fall 2013. Overall Average Evaluation: 4.86 out of 5.
- **H. Lei (100% responsibility).** Taught ENVR_SCI 490/590 Biomass Conversions for Bioenergy and Bioproducts, 2cr, Spring 2013. Overall Average Evaluation: 5 out of 5.
- B. Arhing, K. Thomsen, **H. Lei** (75 minutes lecture). Guest-Lectured CHE 581 Advanced Topics in Chemical Engineering, 3 cr, Fall 2013.
- **H. Lei.** BSysE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Fall 2013.
- **H. Lei.** BSysE 700, Master's Special Problems, Directed Study and/or Examination, Taught 2 MS students, Fall 2013.
- **H. Lei.** BSysE 800, Doctoral Research, Dissertation, and/or Examination, Taught 5 PhD Students, Spring 2012.
- **H. Lei.** BSysE 700, Master's Special Problems, Directed Study and/or Examination, Taught 2 MS students, Spring 2012.
- **H. Lei.** Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2012 Teaching

- **H. Lei (100% responsibility).** Taught BSysE 551 Advanced Biological Systems Engineering Topics, 3cr, Fall 2012.

- **H. Lei (100% responsibility)**. Taught ENVR_SCI 490/590 Biomass Conversions for Bioenergy and Bioproducts, 2cr, Spring 2012. Overall Average Evaluation: 4.65 out of 5.
- B. Arhing, K. Thomsen, **H. Lei (10% responsibility)**. Co-taught CHE 581 Advanced Topics in Chemical Engineering, 3 cr, Fall 2012.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 5 PhD Students, Fall 2012.
- **H. Lei**. BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 2 MS students, Fall 2012.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 4 PhD Students, Spring 2012.
- **H. Lei**. BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 2 MS students, Spring 2012.
- **H. Lei**. Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2011 Teaching

- **H. Lei (50% responsibility)** and S Sablani. Taught BSysE 598 Graduate Seminar, 1cr, Fall 2011. Overall Average Evaluation: 4.48 out of 5.
- **H. Lei (100% responsibility)**. Taught BSysE 593 Renewable Energy Technologies, 3cr, Fall 2011. Overall Average Evaluation: 5 out of 5.
- **H. Lei (100% responsibility)**. Taught ENVR_SCI 490/590 Biomass Conversions for Bioenergy and Bioproducts, 2cr, Spring 2011. Overall Average Evaluation: 5 out of 5.
- B. Arhing, K. Thomsen, **H. Lei (10% contribution)**, J. Holladay, S. Butner. Co-Taught ChE 581 Introduction to Biorefineries, 3 cr, Fall 2011. Overall Avg. Evaluation: 4.80 out of 5.
- **H. Lei (100% responsibility)**. Provided one day workshop for a teacher and 10 high school students: Biomass thermochemical conversions to biofuels and bioproducts. Yakima Valley/TriCities MESA program, August 25th.
- **H. Lei**. Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.
- **H. Lei (100% contribution)**. Prepared course materials for BSysE 593 Renewable Energy Technologies, Spring 2011.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 4 PhD Students, Fall 2011.
- **H. Lei**. BSyE 700, Master's Special Problems, Directed Study and/or Examination, Taught 2 MS students, Fall 2011.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Spring 2011.
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2010 Teaching

- B. Arhing, K. Thomsen, **H. Lei (10% responsibility)**, B. Yang, X. Zhang. Co- Taught ChE 581 Introduction to Biorefineries, 3cr, Fall 2010. Overall Average Evaluation: 4.70 out of 5.
- **H. Lei (100% responsibility)**. Provided one day workshop for a teacher and 10 students: Biomass thermochemical conversions to biofuels and bioproducts. Yakima Valley/TriCities MESA program, June 18th.
- **H. Lei**. Made one presentation at BSyE 598 graduate seminar, Fall 2011.

- **H. Lei (100% contribution)**. Prepared course materials for ES/RP 490 and ES/RP 590, Fall 2010.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 3 PhD Students, Fall 2010.
- **H. Lei**. BSyE 800, Doctoral Research, Dissertation, and/or Examination, Taught 1 PhD student, Spring 2010.
- **H. Lei**. Participated in a teaching project “Biobased Energy Educational Material Exchange System” (BEEMS) led by Dr. Yebo Li at Ohio State University funded by the USDA Higher Education Challenge (HEC) Grants Program.

2009 Teaching

- **H. Lei**. AE 800, Doctoral Research, Dissertation, and/or Examination, Taught 2 PhD students, Spring 2009.

2008 Teaching and Advising

- J. Julson and **H. Lei (20% responsibility)**. Co-teaching AE 343 Physical Properties of Biological Materials. 3 cr, Fall 2008.
- **H. Lei**. AE 800, Doctoral Research, Dissertation, and/or Examination, Taught 2 PhD Students, Fall 2008.
- **H. Lei**. AE 800, Doctoral Research, Dissertation, and/or Examination, Taught 2 PhD Students, Spring 2008.

2002-2007 Teaching

- **H. Lei**. Teaching Assistant: BAE 4713 Biological Processing Engineering, BBE 4733 Renewable Energy Technologies, BAE 8703 Managing Water in Food and Biological Systems

INVITED PRESENTATIONS (7)

7. **H. Lei***. 2016. Aromatics and Cycloalkanes/Naphthenes for Jet Fuels from Lignocellulosic Biomass. 2016 International Symposium on Energy Economics and Management, Beijing, July 5-10, 2016
6. **H. Lei***. 2016. Processes, biofuels, and bioproducts from biomass. 2016 meeting with China University of Mining and Technology (Beijing), Beijing, July 6, 2016
5. **H. Lei***. 2015. Green engineering of processes, biofuels, and bioproducts from biomass. 2015 Delegation from Shanghai Environmental Protection Bureau, Academy of Environmental Sciences, and Shanghai Geodetic Institute, Puyallup, WA, April 10, 2015
4. **H. Lei***. 2014. Aromatic hydrocarbons for aviation biofuels from lignocellulosic biomass. 2014 JCATI Research Symposium: Advancing Public-Private Partnerships in Aerospace, Pullman, WA
3. **H. Lei***, S. Ren, J. Julson, L. Wang, Q. Bu. 2011. Microwave torrefaction of corn stover and tech-economic analysis, 6th ASME 2011 International Manufacturing Science and Engineering Conference (MSEC), June 2011
2. **H. Lei***. 2010. The effects of pretreatment on biomass conversions. Washington State University BSyE 598 Graduate Seminar, November 2010

1. **H. Lei***. 2009. Thermochemical process for bioenergy and bioproducts, Osher Lifelong Learning Institute, January 2009

INTERNATIONAL CONFERENCE PRESENTATIONS (78)

2017 International Conference Papers and Presentations (8):

78. E. M. Villota, **H Lei***, Z. Yang, Y. Zhang, G. Yadavalli, M. Qian, K. Qian, S. M. Villota, L. Zhu. 2017. Microwave-assisted Carbonization of Phosphoric Acid Activated Biomass. 2017 ASABE Annual International Meeting, Spokane, WA, Jul 16-19, 2017.
77. G. Yadavalli, **H. Lei***, Z. Yang, Y. Zhang, E. Villota, M. Qian, L. Zhu. 2017. The effect of canola protein extraction conditions on the kinetic parameters of a two-site extraction model. 2017 ASABE Annual International Meeting, Spokane, WA, Jul 16-19, 2017
76. Y. zhang, **H. Lei***, Z. Yang, E. Villota, G. Yadavalli, M. Qian, L. Zhu. 2017. The DFT Studies of Ethane Reforming with Carbon Dioxide on Ni (111) Catalyst Surface 2017 ASABE Annual International meeting, Spokane, WA, Jul 16-19, 2017
75. Z. Yang, **H. Lei***, Y. Zhang, E. Villota, G. Yadavalli, M. Qian, L. Zhu. 2017. Enhanced Production of Phenols-rich Bio-oil from Biomass via Catalysis over Biochar-derived Activated Carbon, 2017 ASABE Annual International Meeting, Spokane, WA, Jul 16-19, 2017
74. Z. Yang, **H. Lei***, Y. Zhang, E. Villota, G. Yadavalli, M. Qian, L. Zhu. 2017. Preparation of Nanocellulose Crystals via Microwave-assisted Acid Hydrolysis. 2017 ASABE Annual International Meeting, Spokane, WA, Jul 16-19, 2017
73. L. Zhu, **H. Lei***, X. Zhang, G. Yadavalli, M. Qian, Z. Yang, K. Qian, Y. Zhang. 2016. *Development of Microwave Pyrolysis Biochar as Carbon Catalysts for High Value Chemicals and Hydrocarbons*. 2017 International Biomass Conference & Expo, Minneapolis, Minnesota, April 10-12, 2017
72. N. Zhou, S. Liu, Y. Zhang, L. Fan, Y. Cheng, E. Anderson, Y. Wang, P. Chen, Y. Liu, **H. Lei**, R. Ruan*. 2017. ZSM-5 Coating on SiC Foam Support As a Composite Catalyst for Fast Microwave-Assisted Pyrolysis of Biomass. 2017 AIChE Annual Meeting, Minneapolis, MN, October 29 - November 3, 2017
71. S. Liu, Y. Zhang, L. Fan, N Zhou, Y. Cheng, E. Anderson, Y. Wang, P. Chen, Y. Liu, **H. Lei**, R Ruan*. 2017. Bio-Fuel Production from Sequential Two-Step Catalytic Fast Microwave-Assisted Biomass Pyrolysis. 2017 AIChE Annual Meeting, Minneapolis, MN, October 29 - November 3, 2017

2016 International Conference Papers and Presentations (5):

70. M. Qian, X. Zhang, **H. Lei***, L. Zhu, J. C. Chan, X. Zhu, Y. Liu, G. Yadavalli, D. Yan. 2016. Catalytic separation and depolymerization of lignin for effective production of aromatic hydrocarbons. 2016 ASABE Annual International Meeting, Orlando, Florida, July 17 - 20, 2016
69. L. Zhu, **H. Lei***, X. Zhang, Y. Liu, G. Yadavalli, D Yan, M. Qian, X. Zhu, J. C. Chan. 2016. Hydrocarbon Fuels Produced by Microwave-assisted Pyrolysis of Low Density

Polyethylene (LDPE) over Carbon Catalysts. 2016 ASABE Annual International Meeting, Orlando, Florida, July 17 - 20, 2016

68. X. Zhu, G. Yadavalli, **H. Lei***, X. Zhang, M. Qian, J. C. Chan, L. Zhu, Y. Liu, , D Yan. Protein based solid electrolyte from abundant Canola meal protein. 2016 ASABE Annual International Meeting, Orlando, Florida, July 17 - 20, 2016

67. **H. Lei***. 2016. Aromatics and Cycloalkanes/Naphthenes for Jet Fuels from Lignocellulosic Biomass. 2016 International Symposium on Energy Economics and Management, Beijing, July 5-10

66. **H. Lei***. 2016. Processes, biofuels, and bioproducts from biomass. 2016 meeting with China University of Mining and Technology (Beijing), Beijing, July 6, 2016

2015 International Conference Presentations (2):

65. X. Zhang, **H. Lei***, L. Zhu, G. Yadavalli, Y. Wei, Y. Liu, D. Yan. 2015. Renewable jet fuel range alkanes from integrated catalytic processes of Douglas fir sawdust. 2015 ASABE Annual International Meeting, New Orleans, Louisiana, July 26 - 29, 2015

64. L. Zhu, **H. Lei***, X. Zhang, G. Yadavalli, Y. Wei, Y. Liu. 2015. Preparation and characterization of biochar and activated carbon based solid acid catalysts for catalytic microwave pyrolysis. 2015 ASABE Annual International Meeting, New Orleans, Louisiana, July 26 - 29, 2015

2014 International Conference Presentations (4):

63. Y. Wei, **H. Lei***, L. Wang, L. Zhu, X. Zhang, Y. Liu. Advanced upgrading of pyrolysis bio-oil via liquid-liquid extraction and esterification by zeolite catalysis. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014

62. L. Zhu, **H. Lei***, L. Wang, X. Zhang, Y. Wei, Y Liu, G. Yadavalli. Characterization of surface functional groups in corn stover biochar derived from microwave-assisted pyrolysis. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014

61. X. Zhang, **H. Lei***, L. Wang, Y. Wei, L. Zhu, Y. Liu, G. Yadavalli. Upgraded bio-oil from packed-bed catalysis over Ni/HZSM-5 with the addition of ethanol vapor coupled with microwave pyrolysis of Douglas fir pellets. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014

60. L. Wang, **H. Lei***, Q. Bu, S. Ren, Y. Wei, L. Zhu, X. Zhang, Y. Liu, G. Yadavalli. Comparison of aromatic hydrocarbon production and distribution between in-situ and ex-situ catalytic pyrolysis of wood sawdust. 2014 ASABE International Meeting, Montreal, Quebec Canada July 13 – July 16, 2014

2013 International Conference Presentations (10):

59. S. Ren, **H. Lei***, S. Chen, and J. Wu. Biomass and torrefied biomass catalytic pyrolysis and bio-oil upgrading over a biomass derived carbon catalyst. 2013 International Conference on the Thermochemical Conversion Science, Chicago, IL, 3-6 September 2013

58. L. Wang, **H. Lei***, S. Ren, Q. Bu, J. Liang, Y. Wei, Y. Liu, J. Tang. Aromatic hydrocarbons production from catalysis of douglas fir sawdust pellets pyrolysis vapor over

- zeolite catalyst. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013
57. L. Zhu, **H. Lei***, L. Wang, Q. Bu, J. Liang, Y. Wei, Y. Liu. Catalytic Microwave Pyrolysis of Douglas Fir Pellets With Carbon Catalysts Derived From Corn Stover. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013
56. Y. Wei, **H. Lei***, Q. Bu, J. Liang, Y. Liu, S. Ren, L. Wang. Advanced Upgrading of Pyrolysis Oil Via Liquid-Liquid Extraction. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013
55. Q. Bu, **H. Lei***, L. Wang, and J. Tang. Biofuel production and kinetics study of catalytic microwave pyrolysis of douglas fir pellet over activated carbon supported metal catalyst. 2013 AIChE Annual Meeting, San Francisco, California, November 3 – 8, 2013
54. Q. Bu, **H. Lei***, S. Ren, L. Wang, Y. Liu, J. Liang, Y. Wei, Q. Zhang, J. Tang. Renewable phenols and fuel production from catalytic pyrolysis of lignin using microwave irradiation heating. 2013 ASABE International Meeting, Kansas City, Missouri, July 21-24, 2013
53. S. Ren, **H. Lei***, L. Wang, Q. Bu, Y. Liu, J. Liang, Y. Wei, S. Chen, J. Wu. Thermal behavior and kinetic study for woody torrefied biomass pyrolysis by TGA. 2013 ASABE International Meeting, Kansas City, Missouri, July 21-24, 2013
52. L. Wang, **H. Lei***, Q. Bu, L. Zhu, Y. Liu, J. Lee, S. Chen, J. Tang. Catalytic upgrading of Douglas fir sawdust pellet vapors over Zn/ZSM-5 catalysts in a packed-bed catalysis reactor. 2013 ASABE International Meeting, Kansas City, Missouri, July 21-24, 2013
51. L. Zhu, **H. Lei***, L. Wang, Q. Bu, J. Liang, Y. Wei, Y. Liu. Carbon catalysts from Corn Stover and its Application to Catalytic Microwave Pyrolysis. 2013 ASABE International Meeting, Kansas City, Missouri, July 21-24, 2013
50. Y. Wei, **H. Lei***, Q. Bu, J. Liang, Y. Liu, S. Ren, L. Wang. Advanced analysis of products from organosolv lignin by microwave pyrolysis. 2013 ASABE International Meeting, Kansas City, Missouri, July 21-24, 2013

2012 International Conference Presentations (8):

49. S. Ren, **H. Lei***, L. Wang, Q. Bu, Y. Liu, J. Liang, Y. Wei, S. Chen, J. Wu, and R. Ruan. Furfural production from microwave catalytic torrefaction of Douglas fir sawdust pellets. 2012 AIChE Annual Meeting, Pittsburgh, PA in Oct.-Nov. 2012
48. J. Liang, **H. Lei***, Y. Liu, Y. Wei, L. Wang, Q. Bu, S. Ren, J. Tang, Q. Zhang. A review on renewable hydrogen generation by reforming of glycerol. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012
47. Y. Wei, **H. Lei***, Q. Bu, J. Liang, Y. Liu, S. Ren, L. Wang, J. Tang, Q. Zhang. Renewable hydrocarbons produced from glucose by aqueous-phase reforming process. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012
46. Y. Liu, **H. Lei***, S. Ren, A. Zacher, Q. Bu, J. Liang, Y. Wei, L. Wang, Q. Zhang, J. Tang. Biomass torrefaction and bio-oil upgrading over HZSM-5. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012

45. S. Ren, **H. Lei***, L. Wang, Q. Bu, Y. Liu, J. Liang, Y. Wei, S. Chen, J. Wu, and R. Ruan. Optimum conditions and characteristics of products from microwave torrefaction of Douglas fir sawdust pellet. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012
44. S. Ren, **H. Lei***, A. Zacher, Y. Liu, L. Wang, Q. Bu, J. Liang, Y. Wei, S. Chen, J. Wu. High quality biofuel production from torrefied biomass. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012
43. Q. Bu, **H. Lei***, S. Ren, L. Wang, Y. Liu, J. Liang, Y. Wei, Q. Zhang, J. Tang, and R. Ruan. Phenols and fuels from catalytic microwave pyrolysis of lignocellulosic biomass. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012
42. L. Wang, **H. Lei***, S. Ren, Q. Bu, J. Liang, Y. Wei, Y. Liu, J. Tang, Q. Zhang, and R. Ruan. Aromatic hydrocarbons from catalytic conversion of microwave assisted pyrolysis of pine wood over ZSM-5 Zeolite. 2012 ASABE International Meeting, Dallas, Texas, July 29-Aug 1, 2012

2011 International Conference Presentations (5):

41. S. Ren, **H. Lei***, J. Julson, L. Wang, Q. Bu. 2011. The effects of reaction temperature and time on microwave torrefaction of corn stover. 2011 ASABE International Meeting, Louisville, Kentucky, Aug 7-10, 2011
40. S. Ren, **H. Lei***, J. Julson, L. Wang, Q. Bu. 2011. Microwave pyrolysis of douglas fir sawdust pellet. 2011 ASABE International Meeting, Louisville, Kentucky, Aug 7-10, 2011
39. L. Wang, **H. Lei***, S. Ren, Q. Bu. 2011. Microwave assisted pyrolysis of Douglas fir over ZSM-5 Zeolite catalysts. 2011 ASABE International Meeting, Louisville, Kentucky, Aug 7-10, 2011
38. Q. Bu, **H. Lei***, S. Ren, and L. Wang. 2011. Biofuel production from one-step conversion using formic acid-alcohol as reaction medium. 2011 ASABE International Meeting, Louisville, Kentucky, Aug 7-10, 2011
37. R. Ruan*, P. Chen, J. Zhou, M. Min, Y. Cheng, M. Mohr, Y. Li, B. Hu, X. Ma, L. Li, Y. Zhao, Z. Du, X. Wang, Y. Li, S. Deng, **H. Lei***, X. Lin, Y. Liu, Y. Wan, B. Martinez. 2011. Mass culture of algae for biofuel production and wastewater treatment in northern climates. 4th Congress of the International Society for Applied Phycology, Halifax, Canada

2010 International Conference Presentations (5):

36. R. Zhou, **H. Lei***, J. Julson. 2010. Fast Pyrolysis Optimization of Corn Stover, Switch Grass and Prairie Cordgrass for the Production of Bio-Oil and Volatiles. Paper # 1009439. 2010 ASABE Annual International Meeting, Pittsburgh, Pennsylvania, June 20- 23, 2010
35. **H. Lei***, S. Ren, J. Julson. 2010. Microwave Torrefaction of Corn Stover, Paper # 1009448. 2010 ASABE Annual International Meeting, Pittsburgh, Pennsylvania, June 20-23, 2010

34. **H. Lei***, R. Zhou, and J. Julson. 2010. Comparison of Productions from the Pyrolysis of Three Biomasses: Corn Stover, Switch Grass and Prairie Cordgrass. paper# 1009834. 2010 ASABE Annual International Meeting, Pittsburgh, Pennsylvania, June 20- 23, 2010
33. I. Cybulska, **H. Lei***, J. Julson. 2010. Optimization of Clean Fractionation as a Biomass Pretreatment Method. paper# 1008847. 2010 ASABE Annual International Meeting, Pittsburgh, Pennsylvania, June 20- 23, 2010
32. I. Cybulska, **H. Lei***, J. Julson. 2010. Hydrothermal Pretreatment and Enzymatic Hydrolysis of Prairie Cord Grass. paper# 1008844. 2010 ASABE Annual International Meeting, Pittsburgh, Pennsylvania, June 20- 23, 2010

2009 International Conference Presentations (2):

31. **H. Lei***, S. Ren, R. Zhou, and J. Julson. Particle size of corn stover on pyrolysis. 2009 ASABE Annual International Meeting, Reno, Nevada, June 21-24
30. **H. Lei***, S. Ren, R. Zhou, and J. Julson. Optimization of pyrolysis conditions for the production of biooil and biogas from corn distiller's dried grains with solubles (DDGS). 2009 ASABE Annual International Meeting, Reno, Nevada, June 21-24

2008 International Conference Presentations (7):

29. **H. Lei***, K. Hennessey, Y. Liu, X. Lin, Y. Wan and R. Ruan. Optimization of hydrothermal pretreatment of corn stover. 2008 ASABE Annual International Meeting, Providence, Rhode Island, June 29- July 2, 2008
28. **H. Lei***, K. Petrofsky, A. Hohn, X. Cao, P. Chen, R. Ruan. Microscopic Examination of Structural Changes in Wheat bran due to Pulverization and Enzymatic Hydrolysis. 2008 ASABE Annual International Meeting, Providence, Rhode Island, June 29- July 2, 2008 (
27. C. Yang, J. Moen, B. Zhang, K. Hennessy, **H. Lei**, Y. Liu, P. Chen and R. Ruan*. 2008. Fractionation and characterization of bio-oil from biomass pyrolysis. 30th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA
26. J. Moen, B. Zhang, C. Yang, Z. Le, K. Hennessy, **H. Lei**, Y. Liu, P. Chen and R. Ruan*. 2008. Catalytic Microwave-Assisted Pyrolysis of High-diversity Grassland Perennials. 30th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA
25. K. Hennessy, B. Zhang, C. Yang, **H. Lei**, Y. Liu, P. Chen and R. Ruan*. 2008. A continuous plug-flow system for hydrothermal processing of aqueous biomass. 30th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA
24. R. Ruan, K. Petrofsky, **H. Lei***, A. Hohn, P. Chen, L. Marquart. 2008. High-pressure homogenization and enzymatic treatment of bran. IFT Symposium: Designing and delivering whole grains with enhanced health attributes. 2008 IFT Annual Meeting, New Orleans, Louisiana, June 28, 2008 - July 2, 2008
23. R. Ruan*, Y. Li, X. Lin, X. Ye, **H. Lei**, P. Chen. 2008. Magnetic resonance imaging of foods. IFT Symposium: Water in Foods. 2008 IFT Annual Meeting, New Orleans, Louisiana, June 28, 2008 - July 2, 2008

2007 International Conference Presentations (3):

22. **H. Lei***, R. G. Fulcher, R. Ruan, B. van Lengerich. 2007. Prediction of water solubility index of rice extrudates from a co-rotating twin-screw extruder. 2007 ASABE Annual International Meeting, Minneapolis, Minnesota, June 17-20, 2007
21. **H. Lei***, R. G. Fulcher, R. Ruan, B. van Lengerich. 2007. Changes in CIElab color parameters in twin-screw extruded rice-glucose-lysine blend. 2007 ASABE Annual International Meeting, Minneapolis, Minnesota, June 17-20, 2007
20. **H. Lei***, R. G. Fulcher, R. Ruan, B. van Lengerich. 2007. Color development in an extrusion-cooked model system. 2007 IFT Annual Meeting, Chicago, Illinois. July 27-August 1, 2007

2006 International Conference Presentations (3):

19. **H. Lei***, R. G. Fulcher, R. Ruan, B. van Lengerich. 2006. Assessment of color development due to twin-screw extrusion of rice-glucose-lysine blend using computer vision. Paper No. 066100. 2006 ASABE Annual International Meeting, Portland, Oregon, July 9 - 12, 2006 (
18. **H. Lei***, R. G. Fulcher, R. Ruan, B. van Lengerich. 2006. Reaction kinetics of color development in an extrusion-cooked model system. Paper No. 066113. 2006 ASABE Annual International Meeting, Portland, Oregon, July 9 - 12, 2006
17. R. Ruan*, S. Deng, X. Lin, **H. Lei**, P. Chen. 2006. Non-thermal plasma disinfection of foods. In Symposium: "Nonthermal Processing: Food Quality and Chemistry", 2006 American Chemical Society (ACS) Annual Meeting, Atlanta, Georgia, March 26-30, 2006

2005 International Conference Presentations (5):

16. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2005. Mean residence time analysis for a co-rotating twin-screw extruder. Paper No. 31050. 2005 IFT Annual Meeting, New Orleans, Louisiana, July 15-20, 2005
15. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2005. Modeling extrusion system parameters in a co-rotating twin-screw extruder. Paper No. 31005. 2005 IFT Annual Meeting, New Orleans, Louisiana, July 15-20, 2005
14. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2005. Residence time distribution and mean residence time in a co-rotating twin-screw extruder. Paper No. 056112. 2005 ASAE Annual International Meeting, Tampa, Florida, July 17-20, 2005
13. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2005. Modeling die Pressure, die temperature, shaft torque, and SME in a co-rotating twin-screw extruder. Paper No. 056113. 2005 ASAE Annual International Meeting, Tampa, Florida, July 17-20, 2005
12. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2005. Prediction of water solubility index of rice extrudate in a co-rotating twin-screw extruder. 2005 International Conference of Cereal Science and Technology, Veyna, Austria, June 29-July 1, 2005

2004 International Conference Presentations (2):

11. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2004. Twin screw extrusion of rice flour-effects of extrusion processing conditions on extrudate characteristics. Paper No. 25837. 2004 IFT Annual Meeting, Las Vegas, Nevada, July 12-16, 2004

10. **H. Lei***, G. Fulcher, R. Ruan, and B. van Lengerich. 2004. Influence of processing on the extrudate characteristics of rice flour. Paper No. 046013. 2004 ASAE Annual International Meeting, Ottawa, Canada, August 1-4, 2004

2003 International Conference Presentations (3):

9. **H. Lei***, G. Fulcher, R. Ruan, and K. Schmitz. 2003. Effects of processing conditions on cereal fibers by twin screw extrusion. Paper No. 036072. 2003 ASAE Annual international Meeting, Las Vegas, Nevada, July 27-30, 2003
8. **H. Lei***, G. Fulcher, R. Ruan, and K. Schmitz. 2003. Effects of processing conditions on wheat bran by twin screw extrusion. Paper No. 20066. 2003 IFT Annual Meeting, Chicago, Illinois, July 12-16, 2003
7. **H. Lei***, R. Ruan, P. Chen, S. Deng, X. Lin, G. Fulcher, W. F. Wilcke. 2003. Ozonation steeping in corn wet milling process. Paper No. 20132. 2003 IFT Annual Meeting, Chicago, Illinois, July 12-16, 2003

2002 and Before International Conference Presentations (6):

6. R. Ruan, **H. Lei***, P. Chen, S. Deng. 2002. Study on ozone-aided corn steeping processing. Paper No. 036072. 2002 ASAE Annual International Meeting/CIGR World Congress, Chicago, Illinois, July 29 - August 1, 2002
5. X. Pan, R. Ruan*, **H. Lei**, X. Lin, Y. Liu, P. Chen, V. Morey, T. Yang. 2002. Preparation of polyurethane and polyester from liquefied starch. 2002 ASAE Annual International Meeting, Chicago, Illinois, July 29 - August 1, 2002
4. H. Ma, R. Ruan*, P. Chen, **H. Lei**. 2002. A study of a new ozone generator induced by pulse streamer corona discharge plasma. 2002 ASAE Annual International Meeting, Chicago, Illinois, July 29 - August 1, 2002
3. **H. Lei***. 1998. A study of improving production quality of the ready-to-serve rice. In 1998 Chinese National Agricultural Product Drying and Storing Machinery Symposium, Kunming, China
2. **H. Lei***. 1996. Probe into wheat starch and husk powder producing technology. In 1996 Chinese National Agricultural Product Drying and Storing Machinery New Technology Development Symposium, Jinan, China
1. **H. Lei***. 1994. The nutrition value of wheat ectoderm and its extraction method. In 1994 Chinese National Agricultural Products Drying and Processing Technology and Machinery Symposium, Chengdu, China (

International Webinar (2):

2. **H. Lei (Coordinator and Lead Speaker)**, C. Liang. 2015. AOC Webinar -- Agricultural, Biological, and Food Engineers' professional development – Shining Resume-Make your Resume a Sales and Marketing Document. Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE): reach out students, teach, lead, and connect these potential future leaders for their professional development. April 2015.

1. **H. Lei (Coordinator and Lead Speaker)**, F. Yu, J. Wei, P. Li. 2014. AOC Webinar -- Job Search: Finding a Job in Academia or Industry? Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE): reach out students, teach, lead, and connect these potential future leaders for their professional development. March 2014.

REGIONAL CONFERENCE PRESENTATIONS (30)

2017 Regional Conference Presentations (3):

33. **H. Lei***. 2017. Cycloalkanes and Aromatics for Jet Fuels from Diverse Lignocellulosic Biomasses. 2017 Inaugural Clean Technology Showcase, Washington Clean Technology Alliance, Bell Harbor Conference Center, Seattle, WA, June 26, 2017
32. **H. Lei***. 2017. Biomass thermochemical conversions for biofuels and bioproducts. 2017 Meeting with MSS Sustainable LLC/ USS International LLP/ North America Green Pulp Inc., Richland, WA, May 25, 2017
31. **H. Lei***. 2017. Biofuels and bioproducts from lignocellulose biomass”, 2016 Meeting with Creative Energy Systems Inc. / Washington Bio-oils Inc. / NC RJ Reynolds Tobacco Co. Richland, WA, January 18, 2017

2016 Regional Conference Presentations (3):

30. **H. Lei**. 2016. Biofuels and bioproducts from lignocellulose biomass”, 2016 Meeting with Creative Energy Systems Inc. / Washington Bio-oils Inc. / NC RJ Reynolds Tobacco Co. Richland, WA, December 15, 2016
29. **H. Lei***. 2016. Microwave pyrolysis for biofuels and bioproducts. 2016 Meeting with MSS Sustainable LLC/ USS International LLP/ Qilu University of technology / North America Green Pulp Inc., Richland, WA, May 29, 2016
28. X. Zhang, **H. Lei***, G. Yadavalli, L. Zhu, M. Qian, Z. Zhu. 2016. Synthesis of high-density jet fuel from plastics via catalytically integral processes. 2016 WSU ShowCase Conference, Pullman, WA, March 25, 2016

2015 Regional Conference Presentations (7):

27. **H. Lei***, L. Zhu, X. Zhang, Y. Wei, Y. Liu, G. Yadavalli. Jet fuels of aromatics and cycloalkanes from integrated catalytic processes of diverse lignocellulosic biomasses. 2015 Inaugural Clean Technology Showcase, Washington Clean Technology Alliance, Bell Harbor Conference Center, Seattle, WA, June 22, 2015
26. **H. Lei***. 2015. Biofuels and bioproducts from lignocellulose biomass. 2015 Meeting with Creative Energy Systems Inc. / Washington Bio-oils Inc. / NC RJ Reynolds Tobacco Co. Richland, WA, June 11, 2015.
25. **H. Lei***. 2015. Biofuels and bioproducts from lignocellulose biomass. 2015 Meeting with MSS Sustainable LLC/ USS International LLP/ Qilu University of technology, Richland, WA, May 2, 2015
24. **Invited presentation: H. Lei***. 2015. Green engineering of processes, biofuels, and bioproducts from biomass. 2015 Delegation from Shanghai Environmental Protection

Bureau, Academy of Environmental Sciences, and Shanghai Geodetic Institute, Puyallup, WA, April 10, 2015

23. X. Zhang, L. Zhu, G. Yadavalli, Y. Wei, Y. Liu, D. Yan, **H. Lei***. 2015. Cycloalkanes and aromatics for jet fuels from integrated catalytic processes of diverse lignocellulosic biomasses, 2015 JCATI Research Symposium: Advancing Public-Private Partnerships in Aerospace, Seattle, WA, April 20, 2015
22. L. Zhu, **H. Lei***, X. Zhang, G. Yadavalli, Y. Wei, Y. Liu. 2015. Production of hydrocarbons from biomass through *in situ* microwave-assisted catalytic pyrolysis using carbon catalyst. 2015 WSU ShowCase Conference, Pullman, WA, March 28, 2015
21. X. Zhang, **H. Lei***, G. Yadavalli, L. Zhu, Y. Wei, Y. Liu. 2015. Production of gasoline-range hydrocarbons from microwave-induced pyrolysis of low-density polyethylene. 2015 WSU ShowCase Conference, Pullman, WA, March 28, 2015

2014 Regional Conference Presentations (7):

20. **H. Lei***. 2014. Processes, Biofuels, and Bioproducts from Lignocellulosic Biomass. Washington State University Congressional and State Staff Fact Finding Tour August 12, 2014 through August 14, 2014
19. Peer-Reviewed: **H. Lei***. 2014. Aromatic Hydrocarbons for Aviation Biofuels from Microwave-assisted Catalytic Pyrolysis of Lignocellulosic Biomass. 2014 Inaugural Clean Technology Showcase, Washington Clean Technology Alliance, Bell Harbor Conference Center, Seattle, WA
18. **H. Lei***. 2014. Aromatic hydrocarbons for aviation biofuels from lignocellulosic biomass. 2014 JCATI Research Symposium: Advancing Public-Private Partnerships in Aerospace, Pullman, WA
17. L. Zhu, X. Zhang, L. Wang, Y. Wei, Y. Liu, G. Yadavalli, S. Ren, Q. Bu, **H. Lei***. 2014. Aromatic Hydrocarbons for Aviation Biofuels from Microwave-assisted Catalytic Pyrolysis of Lignocellulosic Biomass. 2014 JCATI Research Symposium: Advancing Public-Private Partnerships in Aerospace, Pullman, WA
16. X. Zhang, **H. Lei***, L. Wang, Y. Wei, L. Zhu, Y. Liu, G. Yadavalli. 2014. Hydrocarbons from microwave-assisted catalytic pyrolysis of pretreated Douglas fir. 2014 WSU ShowCase Conference, Pullman, WA
15. **H. Lei***. 2014. Processes, biofuels, and bioproducts. 2014 WSU and PNNL workshop, Richland, WA
14. L. Zhu, **H. Lei***, L. Wang, X. Zhang, Y. Wei, Y. Liu, G. Yadavalli. 2014. Influence of Microwave-assisted Pyrolysis Conditions on Physicochemical Characteristics of Corn Stover Biochar. 2014 WSU ShowCase Conference, Pullman, WA

2013 Regional Conference Presentations (1):

13. Q. Bu, **H. Lei***, L. Wang, Q. Zhang, J. Tang and R. Ruan. Catalytic pyrolysis of lignin for phenols and fuel production by microwave-assisted heating. 2013 WSU ShowCase Conference, Pullman, WA

2012 Regional Conference Presentations (1):

12. **H. Lei***. 100% Self-sustainable biomass microwave pyrolysis -energy consumption. 2012 Terra Power/WSU Meeting, Richland, WA

2011 Regional Conference Presentations (4):

11. **H. Lei***. Microwave pyrolysis and catalytic bio-oil upgrading. 2011 Honeywell UOP/WSU Meeting, Pullman, WA
10. L. Wang, **H. Lei***, S. Ren, Q. Bu, J. Tang, Q. Zhang, and R. Ruan. Microwave assisted pyrolysis of Douglas fir over ZSM-5 Zeolite. 2011 WSU ShowCase Conference, Pullman, WA
9. S. Ren, **H. Lei***, J. Julson, L. Wang, Q. Bu, and R. Ruan. The Effects of Reaction Temperature and Time on Microwave Torrefaction of Corn Stover. 2011 WSU ShowCase Conference, Pullman, WA
8. Q. Bu, **H. Lei***, S. Ren, L. Wang, and R. Ruan. Biofuel production from one-step conversion using formic acid-alcohol as reaction medium. 2011 WSU ShowCase Conference, Pullman, WA

2010 Regional Conference Presentations (6):

7. **H. Lei***. 2010. Biofuels and bioproducts from biomass. In 2010 Energy Independence Day, Olympia, WA
6. **H. Lei***. 2010. Biomass thermochemical conversions to biofuels. USDA-AFRI_Bioenergy meeting at Portland, OR
5. B. Ahring, **H. Lei**, B. Yang, and X. Zhang. 2010. Advance knowledge in bioproducts and bioenergy research and create value in washington state economy. In 2010 Seattle Future Energy Conference-Bioenergy Research Symposium, Seattle, WA
4. D. Elliott*, **H. Lei***, S. Ren, A. Zacher, T. Hart. 2010. Infrastructure compatible fuels and chemicals from biomass. 2010 DOE-PNNL Bioenergy Conference, Richland, WA
3. **H. Lei*** and S. Ren. 2010. Particle Size of Corn Stover on Microwave Assisted Pyrolysis. 2010 WSU ShowCase Conference, Pullman, WA
2. D. D. Malo, S. A. Clay*, T.E. Schumacher, H. J. Woodard, D. E. Clay, R. H. Gelderman, **H. Lei** and J. L. Julson. Interactions of biochar source/properties impacts on soil properties, c sequestration potential, and crop management. In 2010 SunGrant Annual Meeting, Reno, NV

2009 and before Regional Conference Presentations (1):

1. **H. Lei***, G. Fulcher, R. Ruan, C. Ng, D. Green, and B. van Lengerich. 2006. Reaction kinetics modeling of rice flour extrusion in a twin screw extruder. General Mills internal conference, Minneapolis

PATENTS AND INVENTION DISCLOSURE (18)**2017 Patents**

18. **H. Lei** and L. Wang. 2017. Filed Patent (USPTO 14/606,694). Aromatic hydrocarbons from lignocellulose biomass. Patent filed and revised in August 2017

2016 Patents and Invention Disclosures (1)

17. **H. Lei**, X Zhang. 2016. Filed patent (USPTO 62385841). From intact biomass to renewable cycloalkanes for jet fuels. Patent filed in Sep. 2016

2015 Patents and Invention Disclosures (3)

16. **H. Lei**, G. Yadavalli. 2015. Carbon dioxide capture using ammonium sulfate surface modified activated biomass carbon. Invention disclosure submitted in July 2015
15. **H. Lei**, X Zhang. 2015. From intact biomass to renewable cycloalkanes for jet fuels. Invention disclosure submitted in July 2015
14. **H. Lei** and L. Wang. 2015. Filed patent (USPTO 27158.8047.US01). Aromatic hydrocarbons from lignocellulose biomass. Patent filed in February 2015

2014 Patents and Invention Disclosures

13. **H. Lei**. 2014. Fuels, chemicals, and hydrogen-rich syngas production from microwave assisted carbon catalysis of lignocellulosic biomass. Invention disclosure submitted in April 2014
12. **H. Lei** and L. Wang. 2014. Filed patent (USPTO 61938416). Aromatic hydrocarbons from lignocellulose biomass. Patent filed in February 2014

2012 Patents and Invention Disclosures

11. **H. Lei** and L. Wang. 2012. Aromatic hydrocarbons from lignocellulose biomass. Invention disclosure submitted in Nov. 2012

2011 Patents and Invention Disclosures

10. **H. Lei**, Q. Bu, S. Ren, and L. Wang. 2011. Filed patent (USPTO 61483132). Microwave Assisted Pyrolysis and Phenol Recovery. Patent filed in May 2011
9. **H. Lei**, Q. Bu, S. Ren, and L. Wang. Methods and Synthesis of Phenol and Phenolics from Lignocellulose Biomass and Related Biomass Derived Phenol-formaldehyde (PF) Resin / Polyurethane (PU) Foam and Hydrocarbon Biofuels. Invention disclosure submitted in Jan. 2011

2010 Patents and Invention Disclosures

8. **H. Lei** and S. Ren. Catalytic microwave torrefaction/pyrolysis of biomass for biofuels and bioproducts. Invention disclosure submitted in Oct. 2010
7. **H. Lei**. Feedstock-flexible plasma gasification system for biofuels and bioproducts. Patent disclosure submitted in July, 2010
6. **H. Lei** and S. Ren. 2010. Filed patent (US 61404560), Method and apparatus for biomass torrefaction and pyrolysis

2009 Patents and Invention Disclosures

5. **H. Lei** and S. Ren. 2009. Novel catalyst and catalytic microwave pyrolysis for high quality biofuels and chemicals production with zero total acid number and enhanced aromatic compounds. Invention disclosure
4. **H. Lei** and S. Ren. 2009. Filed patent (US 61278157), Method and apparatus for biomass torrefaction and pyrolysis for biofuels and chemicals production
3. **H. Lei**, J. Julson, and I. Cybulska. 2009. Method of fractionating lignocellulosic material into lignin, cellulose and dissolved sugars with enhanced delignification and cellulose digestibility. Invention disclosure

2008 Patents and Invention Disclosures

2. **H. Lei**, J. Julson, and C. Keierleber. 2009. Process for producing corn ethanol - liquefaction and saccharification without alpha amylase and glucoamylase enzymes. Invention disclosure

2007 Patents and Invention Disclosures

1. 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

HONORS AND AWARDS

2017 Honors and Awards

32. **ACS Publications Award of Certificate of Recognition**, for help on advance scientific excellence and made ACS the most trusted, most cited, and most read publisher, 2017
31. Awarded **Recognized Reviewer Status** for instrumental in enabling the progress of science, technology and medicine for reviews for Elsevier journals, 2017
30. Listed in **Who's Who in the World**, 2017

2016 Honors and Awards

29. Won "**Highly Cited Research**" from *Biosystems Engineering*. "Thermal behaviour and kinetic study for woody biomass torrefaction and torrefied biomass pyrolysis by TGA". The internationally respected *Biosystems Engineering* (formerly JAER) is the official scientific journal of The European Society of Agricultural Engineers (EurAgEng).
28. **Dr. Hanwu Lei's research featured in a top journal:** The August 2016 issue of the journal of Green Chemistry features the research article from Dr. Lei's group, "Catalytic co-pyrolysis of lignocellulosic biomass with polymers: a critical review." (Front cover based on a design by Drs. Xuesong Zhang and Hanwu Lei; Dr. Xuesong Zhang is the recent PhD graduate from Dr. Lei's group). Green Chemistry is a top journal (Impact Factor: 8.506) and the frontiers of the interdisciplinary science of alternative sustainable technologies and publishes cutting-edge research.
27. Listed in **Who's Who in America**, 70th Edition (2016)
26. Listed as "**2016 Top 20 Articles**" published on the same topic at BioMedLib: Bu Q, Lei H, Wang L, Wei Y, Zhu L, Zhang X, Liu Y, Yadavalli G, Tang J. Bio-based phenols and fuel

production from catalytic microwave pyrolysis of lignin by activated carbons. *Bioresour Technol.* 162:142-7.

2015 Honors and Awards

25. “**Best Paper Award 2015**” from *Bioresource Technology*. The published paper “A review of catalytic hydrodeoxygenation of lignin-derived phenols from biomass pyrolysis” appears among the ten top cited papers contributing to the *Bioresource Technology* 2014 Impact Factor. Dr. Hanwu Lei and his co-authors are contributing such high quality work to the journal, and helping to secure *Bioresource Technology's* continued position as a high impact journal in its field of biomass, biological waste treatment, and bioenergy.
24. “**Outstanding Services**”, Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE) extends its sincere appreciation in recognition of outstanding services to Dr. Hanwu Lei at the 2015 Annual Meeting of ASABE, New Orleans, LA, July 2015.
23. Listed as “**2015 Top 20 Articles**” published on the same topic at BioMedLib: **H. Lei***, S. Ren, L. Wang, Q. Bu, J. Julson, J. Holladay, and R. Ruan. Microwave pyrolysis of distillers dried grain with solubles (DDGS) for biofuel production. *Bioresource Technology*, 102 (10) 6208–6213.
22. 2015 CleanTech ShowCase Travel Grant Award of \$500, WSU Offices of Research, Economic development, And Commercialization, June 2015
21. Listed in **Who's Who in Science and Engineering**, 12th Edition (2016-2017)
20. Listed in **Who's Who in America**, 69th Edition (2015)
19. **Elsevier Reviewer Recognition, Certificate of Reviewing**, Elsevier, Amsterdam, The Netherlands, 2015

2014 Honors and Awards

18. **Early Career Award**, Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE), July 2014. The purpose of this award is to recognize outstanding career achievement by a young AOC member in the profession of Agricultural, Biological and Food Engineering. The award is to honor achievement through education, research, innovation, development, extension, consulting, administration, international collaboration, and other professional activities.
17. Listed as “**2014 Top 20 Articles**” published on the same topic at BioMedLib: **H. Lei***, S. Ren, L. Wang, Q. Bu, J. Julson, J. Holladay, and R. Ruan. Microwave pyrolysis of distillers dried grain with solubles (DDGS) for biofuel production. *Bioresource Technology*, 102 (10) 6208–6213.
16. Listed in Who's Who in America, 68th Edition (2014)

2013 Honors and Awards

15. Listed as “**2013 Top 20 Articles**” published on the same topic at BioMedLib: #1. **H. Lei***, S. Ren, L. Wang, Q. Bu, J. Julson, J. Holladay, R. Ruan. Microwave pyrolysis of distillers dried grain with solubles (DDGS) for biofuel production. *Bioresour Technol.*, 102 (10):6208-13; #16. Q. Bu Q, **H. Lei***, S. Ren, L. Wang, Q. Zhang, J. Tang, R. Ruan.

Production of phenols and biofuels by catalytic microwave pyrolysis of lignocellulosic biomass. *Bioresour Technol.*, 108: 274-9.

14. Listed in Who's Who in America, 67th Edition (2013)

2012 Honors and Awards

13. **"Certificate of Appreciation"** for valuable contribution and dedicated service in the peer review of manuscripts submitted to ACS journals, Journals Publishing Group, American Chemical Society, 2012
12. **"Guest of Honor"** in 2012 American Chemical Society Annual Meeting of Author & Reviewer Reception, San Diego, CA, March 2012.
11. Listed as **"2012 Most Downloaded Articles"** in *J. Analytic and Applied Pyrolysis*: S. Ren, **H. Lei***, L. Wang, Q. Bu, S. Chen, J. Wu, J. Julson, and R. Ruan. 2012. Biofuel production and kinetics analysis of microwave pyrolysis for Douglas fir sawdust pellet. *J. Analytic and Applied Pyrolysis*. 94: 163-169.
10. Listed in Who's Who in Science and Engineering, 11th Edition (2011-2012)

2009 and before Honors and Awards

9. **Orville and Enolia Bentley Research Award**, C. R. Keierleber, **H. Lei***, J. Julson. 2009. Development of corn ethanol process – liquefaction without alpha amylase
8. **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
7. "A Future Leader in Agricultural Engineering", International Commission of Agricultural Engineering, XV CIGR World Congress, Chicago, 2002
6. **First Place Paper Award** of "A study of improving producing quality of the ready-to-serve rice" at Chinese National Agricultural Product Drying and Storing Machinery New Technology Development Symposium, Kunming, 1998
5. **First Place Paper Award** of "The nutrition value of wheat ectoderm and its extraction method" at Chinese National Agricultural Product Drying and Storing Machinery New Technology Development Symposium, Chengdu, 1994
4. Excellent Graduate Dissertation, Wuxi University of Light Industry, China, 1992
3. Excellent Student Leading Cadre of Institute, Wuxi University of Light Industry, China, 1990
2. The First Scholarship of Institute, Wuxi University of Light Industry, China, 1990
1. The Second Scholarship of Institute, Wuxi University of Light Industry, China, 1989

MY STUDENTS' ACHIEVEMENTS/AWARDS (20)

2017 My Students' Achievements/Awards (2)

21. **Engineering Research and Development for Technology (ERDT) Faculty Development Scholarship:** PhD student Wendy Mateo, under the supervision of Dr. **H. Lei**, won Engineering Research and Development for Technology (ERDT) Faculty Development Scholarship, University of the Philippines (\$177,018 for 4 years), August 2017.
20. **Travel Award:** PhD student Elmar Villota, under the supervision of Dr. **H. Lei**, won a travel award of about \$1,000 from WSU Department of Biological Systems Engineering to attend the 2017 American Society of Agricultural and Biological Engineers (ASABE) International Conference to be held at Spokane, Washington in July 2017. Elmar made an oral presentation titled “Microwave-assisted Carbonization of Phosphoric Acid Activated Biomass” at the conference.

2016 My Students' Achievements/Awards (1)

19. PhD student Lei Zhu (Aug. 2012-Nov. 2016), under the supervision of Dr. **H. Lei**, won **scholarship for Summer School on Sustainable Chemistry for Sustainable Development**. Lei Zhu was one of the 15 scholarship recipients from around the world, and the only one selected from the United States, to attend the 2nd Summer School on Sustainable Chemistry for Sustainable Development in Germany.

2015 My Students' Achievements/Awards (5)

18. **Graduate Studies Achievement Award:** PhD student Xuesong Zhang (Aug. 2012-Aug. 2016), under the supervision of Dr. **H. Lei**, won 2015-2016 WSU BSYSE Outstanding Graduate Student Award - Alfred and Genevieve Gallucci Scholarship of \$500, November 2015.
17. **Graduate Studies Achievement Award:** PhD student Lei Zhu (Aug. 2012-Aug. 2016), under the supervision of Dr. **H. Lei**, won 2015-2016 WSU BSYSE Outstanding Graduate Student Award - Alfred and Genevieve Gallucci Scholarship of \$500, November 2015.
16. **“ACS Summer Program”:** Lei Zhu, a doctoral student under the guidance of Dr. **H. Lei**, was selected for American Chemical Society Summer School on Green Chemistry and Sustainable Energy. Lei Zhu, is one of 33 United States-based students to be selected for the June 17-24 American Chemical Society Summer School on Green Chemistry and Sustainable Energy, to explore scientific solutions to the global challenges of sustainable energy through presentations by leading researchers, collaborative projects and discussions. The ACS summer program was open to graduate students and postdoctoral scholars in the United States, Canada and Latin America. Sixty students attended the program in 2015.
15. **China Scholarship Council (CSC) Scholarship:** PhD student Xiaolu Zhu (Aug. 2015-Aug. 2019), under the supervision of Dr. **H. Lei**, won China Scholarship Council (CSC) Scholarship (\$1300 per month for 4 years), May 2015.
14. **Graduate Leadership and Service Award:** PhD student Lei Zhu, under the supervision of Dr. **H. Lei**, won 2015 Graduate Leadership and Service Award from the Association of Overseas Chinese Agricultural, Biological and Food Engineers.

2014 My Students' Achievements/Awards (4)

13. **Graduate Studies Achievement Award:** PhD student Lei Zhu (Aug. 2012-Aug. 2016), under the supervision of Dr. **H. Lei**, won 2014 WSU BSYSE Outstanding Graduate Student Award - Alfred and Genevieve Gallucci Scholarship of \$500, May 2014.
12. **Travel Award:** PhD student **Yi Wei**, under the supervision of Dr. **H. Lei**, won a travel award of about \$2,858 from WSU Department of Biological Systems Engineering to attend the 2014 American Society of Agricultural and Biological Engineers (ASABE) International Conference to be held at Montreal, QC Canada in July 2014. Yi will make an oral presentation titled "Advanced upgrading of pyrolysis bio-oil via liquid-liquid extraction and esterification by zeolite catalysis" at the conference.
11. **Travel Award:** PhD student **Xuesong Zhang**, under the supervision of Dr. **H. Lei**, won a travel award of about \$2,858 from WSU Department of Biological Systems Engineering to attend the 2014 American Society of Agricultural and Biological Engineers (ASABE) International Conference to be held at Montreal, QC Canada in July 2014. Xuesong will make an oral presentation titled "Upgraded bio-oil from packed-bed catalysis over Ni/HZSM-5 with the addition of ethanol vapor coupled with microwave pyrolysis of Douglas fir pellets" at the conference.
10. **Travel Award:** PhD student **Lei Zhu**, under the supervision of Dr. **H. Lei**, won a travel award of about \$2,858 from WSU Department of Biological Systems Engineering to attend the 2014 American Society of Agricultural and Biological Engineers (ASABE) International Conference to be held at Montreal, QC Canada in July 2014. Lei will make an oral presentation titled "Characterization of Surface Functional Groups in Corn Stover Biochar Derived from Microwave-assisted Pyrolysis" at the conference.

2013 My Students' Achievements/Awards (3)

9. **Graduate Studies Achievement Award:** PhD student Quan Bu (Aug. 2010-Aug. 2013), under the supervision of Dr. **H. Lei**, won WSU BSYSE Graduate Studies Achievement Award - Alfred and Genevieve Gallucci Scholarship of \$1000, May 2013.
8. **CSC Scholarship:** PhD student Xuesong Zhang (Jan. 2013-Dec. 2016), under the supervision of Dr. **H. Lei**, won China Scholarship Council (CSC) Scholarship (\$1300 per month for 4 years), May 2013; it is highly competitive nationally, especially difficult to be awarded for current students who are already enrolled in US universities; only 8 US-universities enrolled students were awarded CSC Scholarship in the years before 2013
7. **Paper Award:** PhD student Lu Wang (Aug. 2010-Aug. 2013), under the supervision of Dr. **H. Lei** (co-author), won Second Place Paper Award of "Catalytic upgrading of Douglas fir sawdust pellet vapors over Zn/ZSM-5 catalysts in a packed-bed catalysis reactor". Paper No. 1594800. AOC Paper Competition of ASABE Annual International Meeting, Kansas City, Missouri in July 2013

2012 My Students' Achievements/Awards (4)

6. **Paper Award:** PhD student Shoujie Ren (Jan. 2010-Dec. 2012), under the supervision of Dr. **H. Lei** (co-author), won Third Place Paper Award of "Optimum conditions and characteristics of products from microwave torrefaction of Douglas fir sawdust pellet ". Paper No. 121337334. AOC Paper Competition of ASABE Annual International Meeting, Dallas, Texas in July 2012

5. **CSC Scholarship:** PhD student Lei Zhu (Aug. 2012-Aug. 2016), under the supervision of Dr. **H. Lei**, won China Scholarship Council (CSC) Scholarship (\$1300 per month for 4 years), May 2012
4. **Travel Award:** PhD Student Shoujie Ren (Jan. 2010-Dec. 2012), under the supervision of Dr. **H. Lei**, won a travel award of \$450 from WSU Graduate & Professional Student Association (GPSA) to attend the 2012 American Institute of Chemical Engineers (AIChE) Annual Conference to be held at Pittsburgh, PA in Oct-Nov 2012. Shoujie made an oral presentation titled “Furfural Production from Microwave Catalytic Torrefaction of Douglas Fir Sawdust Pellets” at the conference.
3. **Travel Award:** PhD Student student Quan Bu (Aug. 2010-Aug. 2013), under the supervision of Dr. **H. Lei**, won a travel award of \$450 from WSU Graduate & Professional Student Association (GPSA) to attend the 2012 American Society of Agricultural and Biological Engineers (ASABE) International Conference to be held at Dallas, Texas in July 2012. Quan made an oral presentation titled “Phenols and fuels from catalytic microwave pyrolysis of lignocellulosic biomass” at the conference.

2011 My Students' Achievements/Awards (2)

2. **CSC Scholarship:** PhD student Yi Wei (Aug. 2011-Aug. 2015), under the supervision of Dr. **H. Lei**, won China Scholarship Council (CSC) Scholarship (\$1300 per month for 4 years), May 2011
1. **National Science Foundation Travel Award:** PhD student Shoujie Ren (Jan. 2010-Dec. 2012), under the supervision of Dr. **H. Lei**, won a travel award of \$447 from University of Florida (UF) travel office through the National Science Foundation to attend the ASME 2011 International Manufacturing Science and Engineering Conference (MSEC) to be held at the Oregon State University, Corvallis, OR in June 2011. Shoujie made an oral presentation titled “Microwave torrefaction of corn stover and technical analysis” at the conference.

DEPARTMENTAL, COLLEGE, AND UNIVERSITY SERVICE

- **Committee Chair** of WSU TriCities BSEL Safety Committee, September 2017-present
- **Committee Member** of WSU TriCities Graduate Studies Committee, Since Oct. 2016
- **Committee Member** of WSU BSE Graduate Program Committee, Since Aug. 2015
- **Committee member** of WSU BSE Undergraduate Degree Program Committee, Feb. 2014-present
- **Committee member** of WSU Outreach, Engagement, and Economic Development SubCommittee for 120 Day Study of 2014-2019 WSU Strategic Planning, August 2014-March 2015
- **Committee Member** of WSU TriCities BSEL Safety Committee, Since July 2016
- **Committee member** of Graduate Studies Committee: Reviewed all graduate applicants and recruited graduate students to the program of Bioproducts and Bioenergy Engineering at WSU, 2009-present
- **Committee Chair** of Ph.D. Program of Study Committees for 13 PhD students at WSU
- **Committee Chair** of Ph.D. Program of Study Committees for 2 PhD students at SDSU
- **Committee Chair** of M.S. Program of Study Committees for 5 MS students at WSU
- **Committee member** of Ph.D. Program of Study Committees for 21 PhD students at WSU
- **Committee member** of M.S. Program of Study Committees for 10 MS student at WSU

- **Coordinator** on the department graduate seminar series, Fall 2014
- **Coordinator** on the department graduate seminar series, Fall 2011
- **Judge** on 2012-2013 MESA USA National Engineering Competition at WSU, April, 2013
- **Volunteer** for MESA day at WSU-Tricities, April, 2013
- Shared my awarded proposal at WSU OGRD, 2012-present
- 5-year plan development for the program of Bioproducts and Bioenergy Engineering at WSU, 2011
- Communicated with professors and professionals nationally and internationally to identify best potential graduate students. 2009-present
- Email/phone communicated and advised for many potential graduate applicants, 2009-present
- Wrote reference letters and helped students' placement and employment
- Hosted the Department Retreat at WSU-TriCities, October 2010
- Hosted Biomass Engineering Club's students' visit at WSU TriCities and Bioproducts, Sciences and Engineering Laboratory, April 2013
- Wrote reference letter for post-docs for their faculty employment application
- Provided one day workshop for WSU MESA program, August 2011
- Provided one day workshop for WSU MESA program, July 2010
- Represented WSU at TriCities Fueling for Follies: Biofuels, Boats, and Butch, July 2012
- Represented WSU at TriCities Fueling for Follies: Biofuels, Boats, and Butch, July 2011
- Represented WSU at Energy Independence Day hosted by 8th District Senator Jerome Delvin, Olympia WA, February 2010.
- Attended department faculty meetings, WSU-Tricities Advisory Council meeting, WA-AustrAlliance meeting, etc

PROFESSIONAL AFFILIATIONS

- **Professional member** of American Society of Agricultural and Biological Engineers (2002-present)
- **Professional member** of Association of Oversea Chinese Agricultural, Food and Biological Engineers (2002-present)
- **Lifetime Member** of Alpha Epsilon (The Honor Society of Agricultural, Food, and Biological Engineering) (2002-present)
- **Professional member** of American Association of Cereal Chemists (2003-2009)
- **Professional member** of Institute of Food Technologists (2002-2009)

PROFESSIONAL ACTIVITIES

- **Division Editor**, Division of Renewable Energy System, "International Journal of Agricultural and Biological Engineering", 2008 to present
- **Editorial Board Member** of *Journal of Sustainable Bioenergy Systems* (JSBS), since 2012
- **Associate Editor**, Division of Agro-Product and Food Processing Engineering "International Journal of Agricultural and Biological Engineering" 2008 to present
- **Editorial Board Member** of "International Journal of Agricultural and Biological Engineering", 2008 to present
- **Editorial Board Member** of "Journal of Global Ecology and Environment", 2015 to present
- **Editorial Board Member** of "Annals of Material Science", 2017 to present

- **Program Chair** of PRS 280 Bioprocessing for Value Added Products Session, ASABE BE-28 Bioconversion and Bioprocess Committee (August 2015-July 2016)
- **Elected Member At-Large of the Executive Board**, Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE), 2013-2015
- **Director of Professional Development**, Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE), 2013-2015
- **Committee Member**, BE-28 Bioconversion and Bioprocess Committee, American Society of Agricultural and Biological Engineers (ASABE), since July 2013
- **Judge** on Boyd-Scott Graduate Research Award of ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems, PhD research papers, April-May, 2015
- **Judge** on Boyd-Scott Graduate Research Award of ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems, PhD oral presentations at ASABE meeting, July, 2015
- **Judge** on Boyd-Scott Graduate Research Award of ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems, MS research papers, April-May, 2014
- **Member of Judging Panel** for AOC student ASABE paper competition, Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE), 2014
- **Judge** on Boyd-Scott Graduate Research Award of ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems, PhD research papers, April-May, 2013
- **Judge** on Boyd-Scott Graduate Research Award of ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems, PhD oral presentations at ASABE meeting, July, 2013
- **Judge** on 2012-2013 MESA USA National Engineering Competition
- **Member of the Peer Review Panel** for Sigma Xi Competition: Research proposals and papers, March 2009
- **Conference Program Chair**, FPE 23 Thermo-Chemical Conversion Poster Session, ASABE international Annual Meeting, July, 2008

INVITED PROGRAM PANELIST/REVIEWER (over 180 proposals reviewed)

- Invited Grant Panelist on USDA, US DOE Federal Programs (over 110 Proposals Reviewed)
- Invited Grant Reviewer on USDA, US DOE Federal Programs (over 50 Proposals Reviewed)
- Invited Grant Reviewer on International Programs (over 10 Proposals Reviewed)
- Invited Grant Reviewer on US Regional Programs (over 10 Proposals Reviewed)

INVITED TECHNICAL REVIEWER (over 250 Manuscripts reviewed)

- *ACS Catalysis*
- *ACS Sustainable Chemistry & Engineering*

- *Applied Biochemistry and Biotechnology*
- *Applied Energy*
- *Applied Catalysis B: Environmental*
- *Applied Microbiology and Biotechnology*
- *Bioenergy Research*
- *Biofuels*
- *Biomass and Bioenergy*
- *Bioresource Technology*
- *Biotechnology for Biofuels*
- *Biotechnology Progress*
- *Bioprocess and Biosystems Engineering*
- *Catalyst Today*
- *Cereal Chemistry*
- *Chemical Papers*
- *Chemical Society Reviews*
- *CRC Press/ Taylor and Francis Group*
- *Frontiers of Chemistry*
- *Fuel*
- *Fuel Processing Technology*
- *Energies*
- *Energy Conversion and Management*
- *Energy and Fuels*
- *Green Chemistry*
- *Industrial & Engineering Chemistry Research*
- *International Agricultural Engineering Journal*
- *International Journal of Agricultural and Biological Engineering*
- *International Journal of Chemical Reactor Engineering*
- *International Journal of Green Energy*
- *International Journal of Hydrogen Energy*
- *International Journal of Food Properties*
- *John Wiley & Sons*
- *Journal of Analytical and Applied Pyrolysis*
- *Journal of Applied Polymer Science*
- *Journal of Biobased Materials and Bioenergy*
- *Journal of Cleaner Production*
- *Journal of Chemical Technology & Biotechnology*
- *Journal of Food Science*
- *Journal of Sustainable Bioenergy Systems*
- *Molecular Catalysis*
- *Proceedings of the ASME*
- *Process Biochemistry*
- *Progress in Energy and Combustion Science*
- *The Organic Reactions Catalysis Society*
- *RSC Advances*
- *Scientific Research and Essays*
- *Sustainable Energy & Fuels*
- *The Organic Reactions Catalysis Society*
- *Transactions of the ASABE*