

Curriculum Vitae

BIN YANG

Associate Professor
Bioproducts, Sciences & Engineering Laboratory
Department of Biological Systems Engineering
Washington State University, Tri-Cities
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PROFESSIONAL EXPERIENCE

- 2015~present **Associate Professor**
Department of Biological Systems Engineering and Bioproducts,
Sciences & Engineering Laboratory,
Washington State University – Tri-Cities, Richland, Washington.
- 2009~2015 **Assistant Professor**
Department of Biological Systems Engineering and Bioproducts,
Sciences & Engineering Laboratory,
Washington State University – Tri-Cities, Richland, Washington.
- 2006~2009 **Associate Research Engineer (Step III)**
Bourns College of Engineering,
Center for Environmental Research and Technology (CE-CERT),
University of California, Riverside, California
- 2001~2006 **Research Scientist**
Thayer School of Engineering,
Dartmouth College, Hanover, New Hampshire.
- 1998~2001 **Post-doctoral Scholar**
Wood Science Department,
University of British Columbia, Vancouver, Canada.
- 1996~1998 **Post-doctoral Fellow**
College of Life Science,
Huazhong Agricultural University, Wuhan, China.
- 1995~1998 **Chief Scientific Advisor**
HuanTai Food & Biotechnology Inc., Shenzhen, China.
- 1986~1990 **Research Associate**
Shaanxi Institute of Microbiology, Chinese Academy of Science.

EDUCATION

- July, 1996 **Doctor of Philosophy, Food Engineering**
South China University of Technology, Guangzhou, China
- July, 1993 **Master of Engineering, Chemical Engineering**
Northwest University, Xi'an, China
- July, 1986 **Bachelor of Science, Microbiology**
Northwest University, Xi'an, China

EXTRAMURAL FUNDING

| NAME | SUPPORTING AGENCY | TOTAL \$ AMOUNT | EFFECTIVE AND EXPIRATION DATES | TITLE OF PROJECT |
|-------------------|----------------------------|-----------------|--------------------------------|--|
| Bin Yang PI | NSF-I-Corps | \$50,000 | 9/15/2016- 3/16/2017 | Jet Fuel from Biomass Derived Lignin |
| Bin Yang Co-PI | DOE-EERE | \$2,500,000 | 12/1/2016- 11/30/2019 | Up-grading Lignin- containing Pretreatment Residues for Bioplastics |
| Bin Yang PI | DOE-NREL | \$85,001 | 10/1/2015- 7/31/2017 | Selective Conversion of NREL's Technical Lignins to Cyclic Hydrocarbons |
| Bin Yang PI | JCATI | \$93,523 | 7/1/2015- 9/30/2016 | Catalytic Upgrading of Biomass-Derived Lignin to New Biojet Fuel and Its Qualification and Performance Testing |
| Bin Yang PI | Chancellor's Seed Grant | \$5,000 | 2/10/15-7/1/15 | Modeling the Transformation of Biomass-Derived Lignin to Biofuels |
| Bin Yang Co-PI | DOE-SBIR Phase II | \$65,688 | 1/1/15-7/28/16 | Pretreatment of Sub- millimeter Biomass Particles |
| Bin Yang PI | Sun Grant-DOT | \$199,946 | 8/1/2013- 8/31/2016 | Catalytic Production of Aviation Fuel Hydrocarbons from Lignocellulosic Biomass-Derived Lignin |

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|-------------------|-------------------------------------|-------------|-------------------|---|
| Bin Yang PI | DOE-NERL | \$58,000 | 8/30/13-12/31/14 | Development of Innovative Catalytic Technologies to Convert NREL's Technical Lignins to Aromatic Hydrocarbons |
| Bin Yang Co-PI | DOE-SBIR Phase I | \$27,242 | 6/1/13-3/15/14 | Low-Energy Rotary Shear for Sub-millimeter Particle Production |
| Bin Yang Co-PI | DOE | \$2,400,000 | 1/30/13-6/31/17 | Synthetic Design of Microorganisms for Lignin Fuel |
| Bin Yang PI | NSF | \$100,664 | 9/1/12-8/31/14 | EAGER: Aqueous Phase Catalytic Processing of Lignin to Hydrocarbons |
| Bin Yang PI | DOE-NERL | \$60,000 | 6/1/12-5/30/13 | Biomass Lignin and Extractives Upgrading Research |
| Bin Yang PI | DOD-DARPA Young Faculty Award | \$300,000 | 10/1/11-7/1/15 | Jet Fuel Production from lignin in Remote Locations |
| Bin Yang PI | OFF OF RESEARCH-- WSU | \$ 1,000 | 2/16/10 –6/30/10 | Development of Fundamental-Based Tools to Facilitate Scale-up of Biorefinery |
| Bin Yang PI | EPA P3 | \$ 10,000 | 6/1/09 –5/30/10 | Using Waste to Clean Up the Environment: Cellulosic Ethanol, the Future of Fuels |
| Bin Yang Co-PI | Logos Technologies DARPA | \$ 504,000 | 4/1/08 – 9/30/09 | Production of JP-8 range Alkanes from Lignocellulosic Biomass |
| Bin Yang Co-PI | DARPA BAA 08-48 | \$ 480,000 | 4/1/08 – 9/30/09 | Catalysts for Production of JP-8 Range Molecules from Lignocellulosic Biomass |
| Bin Yang PI | Mendel Biotechnologies | \$ 171,635 | 7/15/08 – 6/15/09 | Production of Fermentable Sugars from New Energy Crop- <i>Miscanthus</i> |
| Bin Yang Co-PI | USDA-CSRES | \$ 491,757 | 9/1/08 – 8/30/11 | Advanced Continuous Biomass Hydrolysis and Fermentation |
| Bin Yang PI | Dartmouth College | \$ 160,000 | 3/1/07 – 8/31/08 | Biomass Conversion Research |
| Bin Yang | Genencor | \$ 50,000 | 4/1/07–10/30/08 | Pretreatment research |

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|-------------------|------------------------------|------------|-------------------|--|
| PI | International | | | |
| Bin Yang PI | UCEI | \$ 35,000 | 7/1/07 – 8/31/08 | The Potential of Municipal Solid Waste for Conversion to Bioethanol: A Technical and Economical Evaluation |
| Bin Yang Co-PI | DOE | \$ 833,623 | 9/28/07 – 12/3/08 | Technologies for Biological Conversion of Switchgrass to Ethanol |
| Bin Yang Co-PI | Mascoma Corp. | \$ 318,320 | 9/1/07 – 9/2/08 | Pretreatment and Enzymatic Hydrolysis |
| Bin Yang PI | Dartmouth College, USDA | \$ 97,000 | 5/1/06 – 8/31/08 | Application of Lignin Blockers to Continuous Enzymatic Hydrolysis and Coupled Batch Hydrolysis and Fermentation Systems |
| Bin Yang Co-PI | USDA NRI | \$ 410,000 | 9/1/04 – 9/1/08 | Lignin Blockers for Lower Cost Enzymatic Hydrolysis of Pretreated Cellulose |
| Bin Yang Co-PI | BCI 2002 DOE Phase I SBIR | \$ 30,000 | 1/1/02 – 10/1/03 | Integration of an advanced cellulose- producing ethanologenic bacteria with pretreatment to significantly reduce the cost of ethanol from biomass |

HONORS & AWARDS

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| DARPA Young Faculty Award | 2011 |
| Nomination for WSU Tri-Cities Outstanding Teaching Award | 2017 |
| Nomination for WSU Tri-Cities Outstanding Teaching Award | 2016 |
| Invited Guest Professor, Jiansu University, Zhenjiang, China | 2012 |
| Who's Who in Engineering Higher Education | 2012 |
| Invited Guest Professor, China Agricultural University, Beijing, China | 2006 |
| China National Postdoctoral Fellowship Award | 1996-1998 |
| Outstanding Graduate Student Tsang Hin-chi Award of Guangdong Province | 1996 |
| Outstanding Graduate Student Jianli Huo Award of SCUT | 1995 |
| “Application of Cellulase A ₁₀ in the recovery Petroleum” won the Science Development prize of China, Fourth Grade (participants) | 1989 |

- “Solid Fermentation of Soybean Sauce” won Shaanxi Science accomplishment award (the second author) 1988
- “The Cloning of DNA Fragments of Cellulases from *Sporayotophaga*” won the first place research paper prize of the Academy of Science, China. 1989

RESEARCH PUBLICATIONS

Peer-reviewed

1. Daochen Zhu, Changxiao Xie, Weimin Zhang, Jianzhong Sun, Weijun Qian, and **Bin Yang***, “Biodegradation of Lignin by *Bacillus ligniniphilus* L1” *Biotechnology for Biofuels*, 10:44, DOI 10.1186/s13068-017-0735-y. 2017.
2. Wang, Hongliang; Ruan, Hao; Feng, Maoqi, Qin, Yuling; Job, Heather; Luo, Langli; Wang, Chongmin; Chen, Xiaowen; Tucker, Melvin, and **Bin Yang***, “Ru-based Bimetallic Catalysts Supported on Zeolite Y for Hydrodeoxygenation of Lignin to Hydrocarbons”, *ChemSusChem*, 2017. Accepted.
3. Wang, Hongliang, Feng, Maoqi, and **Bin Yang***, “Catalytic hydrodeoxygenation of anisole: an insight into the role of metals on transalkylation reactions in bio-oil upgrading”, *Green Chemistry*, 2017. DOI: 10.1039/C6GC03198F.
4. Libing Zhang, Li Fu, **Hongfei Wang***, and **Bin Yang***, “Vibrational Signatures of Cellulose Surface and Bulk Probed by Sum Frequency Generation Vibrational Spectroscopy,” *Scientific Report*, 2017. **7**, 44319; doi: 10.1038/srep44319.
5. Jian Shi, Dong Wu, Libing Zhang, Blake A. Simmons, Seema Singh, **Bin Yang**, and **Charles E. Wyman***, “Dynamics Changes of Substrate Reactivity and Enzyme Adsorption on Partially Hydrolyzed Cellulose”, *Biotechnology and Bioengineering*, Vol. 114, No. 3, 503-515, 2017.
6. Xiuqing Zhang, Zhangyang Xu, Zhou Chen, Xiaoyan Tan, Jing Hu, **Bin Yang***, Junshe Sun, “Intraspecific variation and phylogenetic relationships are revealed by ITS 1 secondary structure analysis and single-nucleotide polymorphism in *Ganoderma lucidum*”, *PLoS ONE*, 2017, 12(1): e0169042. doi:10.1371/journal.pone.0169042.
7. Hongliang Wang, Libing Zhang, Yunqiao Pu, and **Bin Yang***, “Effects of Lignin Structure on Hydrodeoxygenation Reactivity of Pinewood Lignin to Valuable Chemicals”, *ACS Sustainable Chemistry & Engineering*, 2017. DOI: 10.1021/acssuschemeng.6b02563, Publication Date (Web): 05 Jan 2017.
8. Yucai He, Xiaolu Li, Peiyu Leu, John R. Cort, and **Bin Yang***, “Lipid Production from Dilute Alkali Corn Stover Lignin by *Rhodococcus* Strains,” *ACS Sustainable Chemistry & Engineering*, 2016. DOI: 10.1021/acssuschemeng.6b02627, Publication Date (Web): January 9, 2017.
9. Yucai He, Xiaolu Li, Xiaoyun Xue, Marie S Swita, Andy Smith, and **Bin Yang***, “Biological Conversion of The Aqueous Byproduct from Hydrothermal Liquefaction of Algal and Pine Wood with Rhodococci,” *Bioresource Technology*, 2017, 224: 457–464.
10. Libing Zhang, Yunqiao Pu, John R. Cort, Art J. Ragauskas, a, and **Bin Yang***, “Revealing the Molecular Structure Basis for the Recalcitrance of Hardwood and Softwood in Dilute Acid Flowthrough Pretreatment,” *ACS Sustainable Chemistry & Engineering*, 2016. DOI: 10.1021/acssuschemeng.6b01491, Publication Date (Web): October 3, 2016

11. Hongliang Wang, Libing Zhang, Hao Ruan, John R. Cort, and **Bin Yang***, “The ZnCl₂ Induced Catalytic Upgrading of Softwood Lignin to Aromatics/Hydrocarbons”, *Green Chemistry*, 2016, 18, 2802-2810. DOI: 10.1039/c5gc02967.
12. Yu-Cai He*, Feng Liu, Lei Gong, Jun-Hua Di, Yun Ding, Cui-Luan Ma, Dan, Ping Zhang, Zhi-Cheng Tao, Cheng Wang, and **Bin Yang**, “Enzymatic in situ saccharification of chestnut shell with high ionic liquid-tolerant cellulases from *Galactomyces sp.* CCZU11-1 in a biocompatible ionic liquid-cellulase media,” *Bioresource Technology*, 2016, 201, 133-139.
13. Yan Lishi, Pu Yunqiao, Bowden Mark, Ragauskas Arthur, and **Bin Yang***, “Physiochemical Characterization of Flowthrough Pretreated Lignocellulosic Biomass,” *ACS Sustainable Chemistry & Engineering*, 2016, 4 (1), pp 219–227, DOI: 10.1021/acssuschemeng.5b01021.
News: Treated with care: Analyzing a new pre-treatment process for biofuel production
<http://www.separationsnow.com/details/ezine/1518c555cda/Treated-with-care-Analyzing-a-new-pre-treatment-process-for-biofuel-production.html?tzcheck=1,1,1,1,1,1,1,1,1&tzcheck=1>
14. Libing Zhang, Lishi Yan, Zheming Wang, Dhrubojyoti Iascar, Marie Swita, John R. Cort, and **Bin Yang***, “Characterization of Lignin Derived from Water-only and Dilute Acid Flowthrough Pretreatment of Poplar Wood at Elevated Temperatures,” *Biotechnology for Biofuels*, 2015, 8 (1):1-14 doi: 10.1186/s13068-015-0377-x.
15. H. Wang, H. Ruan, H. Pei, H. Wang, X. Chen, M. P. Tucker, J. R. Cort, and **B. Yang***, “Biomass-derived Lignin to Jet Fuel Range Hydrocarbons via Aqueous Phase Hydrodeoxygenation,” *Green Chemistry*, 2015, 17, 5131-5135, DOI: 10.1039/C5GC01534K.
News: Breakthrough WSU invention to turn forests into jet fuel
<http://www.bizjournals.com/seattle/blog/techflash/2015/12/breakthrough-wsu-invention-to-turn-forests-into.html>
16. Yu-Cai He*, Yun Ding, Yu-Feng Xue, **Bin Yang**, Feng Liu, Cheng Wang, Zheng-Zhong Zhu, Qing Qing, Hao Wu, Cheng Zhu, Zhi-Cheng Tao, Dan-Ping Zhang, “Enhancement of enzymatic saccharification of corn stover with sequential Fenton pretreatment and dilute NaOH extraction,” *Bioresource Technology*, 2015, 193:324–330.
17. Libing Zhang, Zhou Lu, Luis Velarde, Li Fu, Yunqiao Pu, Shi-you You Ding, Arthur J. Ragauskas, Hongfei Wan, and **Bin Yang***, “Vibrational Spectral Signature of Cellulose Microfibrils Using High Resolution Broadband Sum Frequency Generation Vibrational Spectroscopy (HR-BB-SFG-VS),” *Cellulose*. 22:1469–1484 2015, DOI 10.1007/s10570-015-0588-0.
18. Xie S, Qin X, Cheng Y, Laskar D, Qiao W, Sun S, Reyes L, Wang X, Dai Y, Sattler S, Kao K, **Yang B**, Zhang X, and Yuan S*, “Simultaneous Conversion of All Cell Wall Components by Oleaginous Fungus without Chemi-physical Pretreatment,” *Green Chemistry*, 17:1657-1667, 2015. DOI: 10.1039/c4gc01529k.
19. Jeon J, Zhang L, Laskar L, Lemmon J, Choi D, Nandasiri M, Hashmi A, Xu J., Motkuri R, Fernandez C, Liu J, Lutkenhaus J, Tucker M, McGrail P, **Yang B***, and Nune K*, “Controlling Porosity in Lignin-Derived Nanoporous Carbon for Supercapacitor Applications”, *ChemSusChem*, 8(3): 428–432, 2015.
20. Yan L, Greenwood A, Hossain A, and **Yang B***. “A Comprehensive Mechanistic Kinetic Model for Dilute Acid Hydrolysis of Switchgrass Cellulose to Glucose, 5-HMF and Levulinic Acid,” *RSC Advances*, 4, 23492-23504, 2014, DOI: 10.1039/C4RA01631A.

21. Yan L, Zhang L, and **Yang B***. “Enhancement of Total Sugar and Lignin Yields through Dissolution of Poplar Wood by Hot Water and Dilute Acid Flowthrough Pretreatment,” *Biotechnology for Biofuels*, 2014, 7:76 doi:10.1186/1754-6834-7-76.
22. Laskar D, Tucker M, Chen X, Helms D, and **Yang B***. “Noble-Metal Catalyzed Hydrodeoxygenation of Biomass-Derived Lignin to Aromatic Hydrocarbons,” *Green Chemistry*, 2014, 16 (2), 897 – 910. DOI: 10.1039/c3gc42041h.
23. Yan L, Laskar D, Lee S, and **Yang B***. “Aqueous Catalytic Conversion of Agarose to 5-Hydroxymethylfurfural by Metal Chlorides”. *RSC Advances*, 3:24090–24098, 2013.
24. Laskar D, Zeng J, Yan L, Chen S, and **Yang B***. “Characterization of Lignin Derived from Water-only Flowthrough Pretreatment of *Miscanthus*,” *Industrial Crops and Products*, 50: 391–399, 2013.
25. Laskar D, Wang H, Lee J, and **Yang B***. “Pathways for Biomass-Derived Lignin to Hydrocarbon Fuels,” *Biofuels, Bioproducts & Biorefining*, 7:602–626, 2013. DOI: 10.1002/bbb.1422. Invited.
26. Zhang T, Jakob K, Wyman CE, **Yang B***. "Rapid selection and identification of *Miscanthus* species with enhanced total glucose and xylose yields from hydrothermal pretreatment followed by enzymatic hydrolysis," *Biotechnology for Biofuels*, 5:56, 2012. Doi:10.1186/1754-6834-5-56.
27. Lindedam J*, Andersen SB, DeMartini JD, Bruun S, Jørgensen H, Felby C, Magid J, **Yang B**, Wyman CE. "Cultivar variation and selection potential relevant to the production of cellulosic ethanol from wheat straw," *Biomass and Bioenergy*, 37: 221-228, 2012.
28. Tao, L.; Aden, A.; Elander Richard*, T.; Pallapolu Venkata, R.; Lee, Y. Y.; Garlock Rebecca, J.; Balan, V.; Dale Bruce, E.; Kim, Y.; Mosier Nathan, S.; Ladisch Michael, R.; Falls, M.; Holtzapple Mark, T.; Sierra, R.; Shi, J.; Ebrik Mirvat, A.; Redmond, T.; **Yang, B.**; Wyman Charles, E.; Hames, B.; Thomas, S.; Warner Ryan, E., “Process and techno-economic analysis of leading pretreatment technologies for lignocellulosic ethanol production using switchgrass,” *Bioresource Technology*, 102 (24), 11105-14. 2011.
29. Rebecca J. Garlock, Venkatesh Balan, Bruce E. Dale*, V. Ramesh Pallapolu, Y. Y. Lee, Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch, Mark T. Holtzapple, Matthew Falls, Rocio Sierra, Jian Shi, Mirvat A. Ebrik, Tim Redmond, **Bin Yang**, Charles E. Wyman, Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander, Bonnie Hames, Steve Thomas, Ryan E. Warner. “Comparative Material Balances around Leading Pretreatment Technologies for the Conversion of Switchgrass to Soluble Sugars,” *Bioresource Technology*, 102 (24): 11063-11071, 2011.
30. Venkata Ramesh Pallapolu, Y. Y. Lee, Rebecca J. Garlock, Venkatesh Balan, Bruce E. Dale* Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch, Matthew Falls, Mark T. Holtzapple, Rocio Sierra, Jian Shi, Mirvat A. Ebrik, Tim Redmond, **Bin Yang**, Charles E. Wyman, Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander, Bonnie Hames, Steve Thomas, Ryan E. Warner. “Effects of Enzyme Loading and β -Glucosidase Supplementation on Enzymatic Hydrolysis of Switchgrass Processed by Leading Pretreatment Technologies,” *Bioresource Technology*, 102(24): 11115-1120, 2011.
31. Matthew Falls, Jian Shi, Mirvat A. Ebrik, Tim Redmond, **Bin Yang**, Charles E. Wyman*, Rebecca Garlock, Venkatesh Balan, Bruce E. Dale, V. Ramesh Pallapolu, Y.Y. Lee, Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch, Bonnie Hames, Steve Thomas, Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander, Rocio Sierra, Mark T. Holtzapple. “Investigation of Enzyme Formulation on Pretreated Switchgrass,” *Bioresource Technology*, 102(24):11072-11079, 2011.

32. Jian Shi, Mirvat A. Ebrik, **Bin Yang**, Rebecca J. Garlock, Venkatesh Balan, Bruce E. Dale, V. Ramesh Pallapolu, Y.Y. Lee, Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch, Mark T. Holtzaple, Matthew Falls, Rocio Sierra, Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander, Bonnie Hames, Steve Thomas, Ryan E. Warner, and Charles E. Wyman*. "Application of Cellulase and Hemicellulase to Pure Xylan, Pure Cellulose, and Switchgrass Solids from Leading Pretreatments," *Bioresource Technology*, 102(24): 11080-11088, 2011.
33. Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch*, V. Ramesh Pallapolu, Y. Y. Lee, Rebecca Garlock, Venkatesh Balan, Bruce E. Dale, Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander, Matthew Falls, Rocio Sierra, Mark T. Holtzaple, Jian Shi, Mirvat A. Ebrik, Tim Redmond, **Bin Yang**, Charles E. Wyman, and Ryan E. Warner. "Comparative Study on Enzymatic Digestibility of Switchgrass Varieties and Harvests Processed by Leading Pretreatment Technologies," *Bioresource Technology*, 102(24): 11089-11096, 2011.
34. Bryon S. Donohoe, Todd B. Vinzant, Richard T. Elander*, Venkata Ramesh Pallapolu, Y. Y. Lee, Rebecca J. Garlock, Venkatesh Balan, Bruce E. Dale, Youngmi Kim, Nathan S. Mosier, Michael R. Ladisch, Matthew Falls, Mark T. Holtzaple, Rocio Sierra, Jian Shi, Mirvat A. Ebrik, Tim Redmond, **Bin Yang**, Charles E. Wyman, Bonnie Hames, Steve Thomas, Ryan E. Warner. "Surface and Ultrastructural Characterization of Raw and Pretreated Switchgrass," *Bioresource Technology*, 102 (24): 11097-11104, 2011.
35. **B. Yang***, Z. Dai, S. Ding, C. Wyman, "Enzymatic Hydrolysis of Cellulosic Biomass," *Biofuels*, 2(4): 421-450, 2011. Invited.
36. S. Brethauer, M. Studer, **B. Yang**, C. Wyman*, "The effect of bovine serum albumin on batch and continuous enzymatic cellulose hydrolysis mixed by stirring or shaking", *Bioresource Technology*, 102(10): 6295-6298, 2011.
37. J. Shi, Y. Pu, **B. Yang***, A. Ragauskas, C. Wyman, "Comparison of microwave to fluid sand baths for heating tubular reactors for hydrothermal and dilute acid batch pretreatment of corn stover", *Bioresource Technology*, 102(10): 5952-5961, 2011.
38. Lindedam, J*.; B, S.; DeMartini, J.; Joergensen, H.; Felby, C.; **Yang, B.**; Wyman, C. E.; Magid, J. Near infrared spectroscopy as a screening tool for sugar release and chemical composition of wheat straw. *Journal of Biobased Materials and Bioenergy*, 4(4), 378-383, 2010.
39. Q. Qing, **B. Yang**, C. Wyman*, "Xylooligomers Are Strong Inhibitors of Cellulose Hydrolysis by Enzymes", *Bioresource Technology*," 101(24): 9624-9630, 2010.
40. Q. Qing, **B. Yang**, C. Wyman*, "Impact of Surfactants on Pretreatment of Corn Stover," *Bioresource Technology*, 101(15): 5941-5951, 2010.
41. Jungho Jae, Geoffrey Tompsett, Yu-Chuan Lin, Torren Carlson, Jiacheng Shen, Taiying Zhang, **Bin Yang**, Charles E. Wyman, W. Curtis Conner and George Huber*, "Depolymerization of Lignocellulosic Biomass to Fuel Precursors: Maximizing Carbon Efficiency by Combining Hydrolysis with Pyrolysis," *Energy & Environmental Science*, 2010, 3, 358-365.
42. C. Wyman*, **B. Yang**, "Cellulosic biomass could help meet California's transportation fuel needs," *California Agriculture*, 63(4): 185-190, 2009. Invited.
43. Jian Shi, Mirvat Ebrik, **Bin Yang***, and Charles E. Wyman, "The Potential of Cellulosic Ethanol Production from Municipal solid waste: A Technical and Economic Evaluation" UC Energy Institute, 2009. <http://escholarship.org/uc/item/99k818c4#page-3>.
44. **B. Yang***, C. Wyman, "Pretreatment: the key to unlocking low cost cellulosic ethanol," *BioFPR*, 2:26-40, 2008. Invited.

45. **B. Yang***, C. Wyman, "Biotechnology for Cellulosic Ethanol," Asia Pacific Biotechnology News, 11, 9, 555-563, 2007. Invited.
46. **B. Yang***, C. Wyman, "Advancing cellulosic ethanol technology in China," Chemistry in Progress, 17, 7/8, 1072-1075, 2007. Invited.
47. **B. Yang**, C. Wyman*, "Characterization of the degree of polymerization of xylooligomers produced by flowthrough hydrolysis of pure xylan and corn stover with water", Bioresource Technology, 99:5756-5762, 2008.
48. **B. Yang***, Y. Lu, "Perspective: The promise of cellulosic ethanol production in China," Journal of Chemical Technology and Biotechnology, 82, 1, 6-10, 2007. Invited
49. **B. Yang**, C. Wyman*, "BSA treatment to enhance enzymatic hydrolysis of cellulose in lignin containing substrates," Biotechnology and Bioengineering, 94, 4, 611-617, 2006.
50. **B. Yang**, D. Willies, C. Wyman*, "Changes in the enzymatic hydrolysis rate of Avicel cellulose with conversion," Biotechnology and Bioengineering, 94, 4, 1122-1128, 2006.
51. **B. Yang**, C. Wyman*, "Effect of Hemicellulose and Lignin Removal for Batch and Flowthrough Pretreatment on the Enzymatic Digestibility of Corn Stover Cellulose," Biotechnology and Bioengineering, 86, 1, 88-98, 2004.
52. Y. Lu, **B. Yang**, D. Gregg, S. Mansfield, J. Saddler*, "Cellulase adsorption and an evaluation of enzyme recycle during hydrolysis of steam-exploded softwood residues," Applied Biochemistry and Biotechnology, 98-100, 641- 654, 2002.
53. **B. Yang**, B. Abdel, S. Mansfield, J. Saddler*, "A fast and efficient alkaline peroxide treatment to enhance the enzymatic digestibility of steam exploded softwood substrates," Biotechnology and Bioengineering, 77, 6, 678-684, 2002.
54. H. Ingesson, **B. Yang**, A. Esteghlalian, J. Saddler, G. Zacchi*, "The effect of shaking regime on the rate and extent of enzymatic hydrolysis of cellulose," Journal of Biotechnology, 88, 177-182, 2001.
55. **B. Yang***, Y. Lu, K. Gao, Z. Deng, "Research on fermentation of sugarcane bagasse hydrolyzate to ethanol," Chinese Journal of Biotechnology, 13, 4, 253-261, 1996.
56. B. Yang, Y. Lu, K. Gao, Z. Deng, "Research on the PS-Ti ultrafiltration membrane bioreactor for enzymatic hydrolysis of pretreated bagasse and enzyme recovery," Membrane Science & Technology (Chinese), 18, 3, 15-22, 1998.
57. B. Yang, Y. Lu, Z. Tan, K. Gao, "Progress in studies on process of ethanol continuous fermentation coupling with membrane separation," Membrane Science & Technology (Chinese), 17, 1, 9-17, 1997.
58. B. Yang, Y. Lu, K. Gao, Z. Deng, "Studies on cellulase system from *Penicillium notatum* YB-7," Huazhong Agricultural University Journal (Chinese), 16, 5, 66-72, 1997.
59. B. Yang, K. Gao, "Kinetics for hydrolysis of lignocellulose's material in sugarcane bagasse with concentrated acid," South China University of Technology Journal (Chinese), 25, 8, 10-15, 1997.
60. B. Yang, Y. Lu, K. Gao, Z. Deng, "Research on fermentation hydrolyzate of sugarcane bagasse to ethanol," Shengwu Gongcheng Xuebao (Chinese), 13, 4, 380-386, 1997.
61. B. Yang, Y. Lu, K. Gao, Z. Deng, "Studies on the bagasse cellulolysis," Huazhong Agricultural University Journal (Chinese), 16, 4, 311-319, 1997.
62. B. Yang, K. Gao, "Study on the hydrolytic kinetics of the lignocellulose's material in the sugarcane Bagasse by concentration acid," Journal of South China University of Technology (Chinese), 25, 8, 10-16, 1997.

63. B. Yang, Y. Lu, K. Gao, Z. Deng, "Study on enzymatic hydrolysis of Bagasse I," Journal of Huazhong Agricultural University(Chinese),, 16, 4, 326-331, 1997.
64. B. Yang, Y. Lu, K. Gao, Z. Deng, "Study on enzymatic hydrolysis of Bagasse II," Journal of Huazhong Agricultural University(Chinese),, 16, 5, 614-622, 1997.
65. B. Yang, Z. Zhou, K. Gao, "Modern Theory of Food Nature" Journal of Guangzhou University(Chinese),, 10(3): 78-81, 1996.
66. B. Yang, T. Ziliu, K. Gao, "The application progress of membrane technology fruit and vegetable processing," (Chinese), 16, 1, 11-14, 1996.
67. B. Yang, L. Shang, B. Li, "Continuous fermentation of ethanol process coupling with separation by ultrafiltration membrane," Huaxue Gongcheng (Chinese), 24, 2, 46-53, 1996.
68. B. Yang, "The application of luminescent spectrum analysis in food industry," Food Research & Development(Chinese),, 12, 1, 3-7, 1996.
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70. B. Yang, Y. Tang, K. Gao, "Manufacture and application of flavor nucleotides," Zhongguo Tiaoweipin (Chinese), 3, 7-11, 1995.
71. B. Yang, K. Gao, "Preliminary evaluation of saccharification and conversion sugarcane bagasse to ethanol," Food & Fermentation Industry, 10, 27-34, 1995.
72. B. Yang, K. Gao, "Formation of hemicellulases with immobilized cells of *Aspergillus niger* sxi-1," Cellulose Science and Technology (Chinese), 3, 1, 42-45, 1995.
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INVITED PRESENTATIONS AND SEMINARS

1. "Overcoming the Challenges of the Next Generation Biofuels and Bioproducts Production," The 10th World Biofuels Symposium, China. Dongguan, December 10th, 2016.

2. "Aqueous Processing of Lignocellulosic Biomass to Advanced Biofuels", Graduate Seminar Series, Biological Engineering Department, Utah State University, Logan, Utah, October 26, 2016.

3. "Current & Future Challenges of Biorefinery", College of Food and Bioengineering, China Agricultural University, Beijing, China, September 14, 2016.

4. "Overcoming the Challenges of the Second Generation Biofuels Production" Department of Mechanical and Industrial Engineering Seminar, June 22nd, 2016, University of Illinois at Chicago, Chicago, IL.

5. "Production of Jet Fuels from Biomass-Derived Lignin". The National Advanced Biofuels Conference & Expo, June 21th, 2016, Milwaukee, WI.

6. "Upgrading Biomass to Aviation Fuel and Chemicals". The Boeing Company, March 23rd, 2015, Seattle, WA.

7. "The Promise and Challenges of Lignocellulosic Biofuels", Bioenergy Seminar, January 26, 2015, Walla Walla Community College, WA.

8. “Catalytic Transformation of Biomass-Derived Lignin to Jet Fuel”, *Frontiers in Biorefining 2014*, October, 23rd, 2014, St. Simons Island, GA.
9. “Advanced Technologies for Lignocellulosic Biofuels”, *Chemical Engineering Departmental Seminar*, September 11th, 2014, Penn State University, University Park, PA.
10. “Catalytic Upgrading Lignin to Hydrocarbons”, *Hybrid Processing for Biorenewable Fuels & Chemicals Production Symposium*, July 11, 2014, Denver, CO.
11. “Scaling-Up the New Generation Biorefinery with Synergies in Coproducts”, *JiangSu University*, November 12th, 2013, China.
12. “Breaking the Plant Biomass Recalcitrance to New Generation Biofuels”, *Texas A&M Agrilife*, August 21st, 2013, College Station, TX.
13. “Innovating Our Way to A Clean Energy Future — Role of Biomass”, *Outstanding Seminar Series on Biomass and Biofuels of JiangSu University*, December 11th, 2012, China.
14. “Pretreatment: A Vital Interface between Plant Biomass to Conversion Processes”, *Outstanding Seminar Series on Biomass and Biofuels of JiangSu University*, December 12th, 2012, China.
15. “Breaking the Plant Biomass Recalcitrance to Low Cost Biofuels”, *EBI Distinguished Speakers Seminar Series of UC Berkeley*, November 27th, 2012. Berkeley, California.
16. “Advanced Technologies for Biofuels and Bioproducts”, *International Biorefineries Workshop*, June 23st, 2012. Guangzhou, China.
17. “Key Factors for Implementation of Advanced, Cost-Effective Cellulosic Biofuels Technology in China”, *International Biofuels Workshop-COFCO*, March 31st, 2011. Beijing, China.
18. “What can we do for production of biofuels and biochemicals from cellulosic biomass?” *Weyerhaeuser Technology*, Seattle, WA, April 12, 2010.
19. “Powering Sustainable Transportation via Lower Cost Cellulosic Ethanol Production”, *International Cellulosic Ethanol Workshop-COFCO*, Dec. 1st, 2009. Beijing, China.
20. “Pretreatment: A Key to Low Cost Cellulosic Ethanol Production”, *the Society for Industrial Microbiology Annual Meeting & Exhibition*, July 30, 2009. Toronto, Canada.
21. “Overcoming the Recalcitrance of Cellulosic Biomass for Lower Cost Cellulosic Ethanol Production”, *Bioenergy-BioEco*, June 30th, 2009, Tianjin, China.
22. “Progress and Outlook for Low Cost Pretreatment of Cellulosic Biomass for Biological Production of Fuels and Chemicals”, *Workshop on Hydrolysis Route for Cellulosic Ethanol from Sugarcane*, February, 11, 2009. Campinas, Brazil.
23. “Biological Production of Low Cost Cellulosic Ethanol” *China-Canada-California (CCC) Forum Energy and the Environment: Climate Change, Agriculture, Biorefineries/Biofuels*, November, 3, 2008. Wuxi, China.
24. “Potential for Low Cost Pretreatment of Cellulosic Biomass for Biological Production of Fuels and Chemicals” *International Bioenergy & Bioproducts Conference of Tappi*, August, 25, 2008. Portland, OR.
25. “Technology Status and Need for Biological Production of Cellulosic Ethanol”, *US-Korea Conference of Science, Technology, and Entrepreneurship*, August 15, 2008. San Diego, CA.
26. “Challenges and Needs for Cellulosic Ethanol in China” *BIO International Conversion*, June 18, 2008. San Diego, CA.
27. “Advanced Technologies for Cellulosic Ethanol,” *The Critical Technology of Transformation of Renewable Biomass into Ethanol*, Beijing, China, April 2007, 60, 2007.

28. "Advancing Cellulosic Ethanol Technology," Institute of Microbiology Chinese Academy of science, Beijing, China, September 2007.
29. "Advancing Cellulosic Ethanol Technology", Advanced Bioenergy Technologies and Biofuels from Municipal Wastes, California Biomass Collaborative Forum, Sacramento, California. March 28, 2007.
30. "Cellulosic Ethanol: Sustainable Transportation from Waste and Plants", Emerging Technologies Forum, Integrated Waste Management Board, Sacramento, CA, April 17, 2006.
31. "Advances in Biomass Ethanol", Northwestern University, Xi'an, China, July 5, 2005.
32. "Opportunities and Challenges for Ethanol Production from Cellulosic Biomass" China Summit Forum on Industrial Biotechnology Development. April, 19, 2008. Tianjin, China.
33. "Cellulosic Biorefineries for Production of Ethanol as well as Other Products in China" The First Scientific Advisory Board Meeting of CSA November, 26, 2007. Tianjin, China.
34. "Cellulosic Ethanol for Low Carbon Emission Sustainable Fuels" The First International Workshop on Low Carbon Fuels and Climate in China September 7, 2007. Beijing, China.
35. "Cellulosic Ethanol for Sustainable Transportation and A Perspective for Production in China," The 1st World Biofuels Symposium, China. Beijing, September 2006.
36. "Perspectives of Bioethanol from Biomass in China", College of Food and Bioengineering, China Agricultural University, Beijing, China, June 26, 2005.

CONFERENCE PRESENTATIONS

1. Libing Zhang, Lishi Yan, and Bin Yang, "Physiochemical Characterization of Lignocellulosic Biomass Dissolution by Flowthrough Pretreatment", AIChE annual meeting, San Francisco, CA November 17th, 2016.
2. Hongliang Wang, Xiaowen Chen, Melvin Tucker, and Bin Yang, "Selective Conversion of Biomass-Derived Lignin to Cyclic Hydrocarbons Mechanisms of Hydrodeoxygenation Biomass-Derived Lignin to Its Substructure Based Hydrocarbons in Aqueous Phase", AIChE annual meeting, San Francisco, CA November 15th, 2016.
3. Rongchun Shen and Bin Yang, "Does Lignin Make Cents", AIChE annual meeting, San Francisco, CA November 15th, 2016.
4. Hongliang Wang, Hao Ruan, Rongchun Shen, Xiaowen Chen, Melvin Tucker, Nels Olson, Bin Yang, "Jet Fuel Hydrocarbons and Chemicals from Biomass derived Lignin" 2016 S-1041 Science and Engineering for a Biobased Industry and Economy Symposium, Albany, CA, August, 2016.
5. Bin Yang "Jet Fuels from Biomass-Derived Lignin", 2016 ASABE Annual International Meeting, Orlando, FL, July 18, 2016.
6. Libing Zhang, Dave Lanning, Jim Dooley, and Bin Yang "Towards the Optimal Sub-Millimeter Biomass Particles for Sugars Production at Low Cost", 2016 ASABE Annual International Meeting, Orlando, FL, July 18, 2016.
7. Libing Zhang, Yunqiao Pu, Art J. Ragauskas, and Bin Yang "Revealing the Molecular Structure Basis for the Recalcitrance of Hardwood and Softwood in Dilute Acid Pretreatment", 38th Symposium on Biotechnology for Fuels and Chemicals, Baltimore, MD, April 25th, 2016.
8. Yucai He, Peiyu Leu, Xiaolu Li, Libing Zhang, and Bin Yang "Co-fermentation of Carbohydrates and Lignin in Flowthrough-pretreated Poplar to Lipids with Oleaginous

- Rhodococci*”, 38th Symposium on Biotechnology for Fuels and Chemicals, Baltimore, MD, April 26th, 2016.
9. Hao Ruan, Yuling Qin, Hongliang Wang, Nels Olson, and Bin Yang, “Catalytic Upgrading of Biomass-Derived Lignin to New Bio Jet Fuel and Its Qualification”, JCATI Annual meeting, Spokane, WA, April 21, 2016.
 10. Hongliang Wang, Hao Ruan, Haisheng Pei, Libing Zhang, Huaming Wang, Xiaowen Chen, Melvin Tucker, John Cort, and Bin Yang, “Mechanisms of Hydrodeoxygenation Biomass-Derived Lignin to Its Substructure Based Hydrocarbons in Aqueous Phase”, AIChE annual meeting, Salt Lake City, UT, November 11th, 2015.
 11. Hongliang Wang, Hao Ruan, Libing Zhang, John Cort, and Bin Yang, “The ZnCl₂ Induced Catalytic Upgrading of Biomass-Derived Lignin to Aromatics”, AIChE annual meeting, Salt Lake City, UT, November 12th, 2015.
 12. Libing Zhang, Li Fu, Hongfei Wang, and Bin Yang, “Toward Dynamical Understanding of Fundamentals of Pretreatment of Cellulosic Biomass Via a High Resolution Broadband Sum Frequency Generation Vibrational Spectroscopy (HR-BB-SFG-VS)”, AIChE annual meeting, Salt Lake City, UT, November 13th, 2015.
 13. Shangxian Xie, Xing Qin, Dhrubojyoti D. Laskar, Su Sun, Luis H. Reyes, Susie Dai, Scott Sattler, Katy Kao, Bin Yang, Xiaoyu Zhang and Joshua Yuan, “Simultaneous Conversion of All Cell Wall Components By Oleaginous Fungus without Chemi-Physical Pretreatment”, AIChE annual meeting, Salt Lake City, UT, November 10th, 2015.
 14. Libing Zhang, Lishi Yan, Pei-yu Leu, Dave Lanning, Jim Dooley and Bin Yang* “Kinetic Study of Hot Water and Dilute Acid Pretreatment of Various Size Biomass Particles” 2015 ASABE Annual International Meeting, New Orleans, LA, July 29, 2015.
 15. Bin Yang “Aqueous Phase Hydrodeoxygenation of Biomass-Derived Lignin to Its Substructure Based Hydrocarbons and Chemicals”, 37th Symposium on Biotechnology for Fuels and Chemicals, San Diego, CA, April 27th, 2015.
 16. Hasan Coben, Xiaoyun Xue, Francisco J. Soto, Daochen Zhu, and Bin Yang “Pathways for Biological Conversion of Lignin to Lipids”, 37th Symposium on Biotechnology for Fuels and Chemicals, San Diego, CA, April 27th, 2015.
 17. Libing Zhang, Hongliang Wang, Marie Swita, John Cort, and Bin Yang “Kinetic Characterization of Softwood Aqueous Flowthrough Pretreatment under Neutral and Alkaline Conditions”, 37th Symposium on Biotechnology for Fuels and Chemicals, San Diego, CA, April 28th, 2015.
 18. Hongliang Wang, Hao Ruan, Haisheng Pei, Libing Zhang, Melvin Tucker, and Bin Yang, “Catalytic Production of Aviation Fuel Hydrocarbons from Softwood Derived Lignin”, AIChE annual meeting, Atlanta, GA, November 20th, 2014.
 19. Lishi Yan, Ava A Greenwood, Akram Hossain, and Bin Yang, “A Comprehensive Mechanistic Kinetic Model for Dilute Acid Hydrolysis of Switchgrass Cellulose to Glucose, 5-HMF and Levulinic Acid”, AIChE annual meeting, Atlanta, GA, November 20th, 2014.
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22. Bin Yang, Dhrubojyoti D. Laskar, and Melvin Tucker “Noble-Metal Catalyzed Hydrodeoxygenation of Biomass-Derived Lignin to Aviation Fuel”, 36th Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL, April 29th, 2014.
 23. Bin Yang, Dhrubojyoti D. Laskar, “Upgrading Biomass Derived Lignin for Hydrocarbon Production”, AIChE annual meeting, San Francisco, CA, November 8th, 2013.
 24. Libing Zhang, Dhrubojyoti D. Laskar, Ju-Won Jeon, Ronish Sharma, Padmaja Gunda, Satish Nune, Zheming Wang and Bin Yang, “Characterization of Lignin Intermediates and Carbonization of Lignin for Production of Electrode Materials”, 2013 ASABE Annual International Meeting, Kansas City, Missouri, July 24, 2013.
 25. Bin Yang, “Enzymatic Enhancement of the Biological Activities of Flavonoids from *Ganoderma*” The annual meeting of USDA_W2002 Nutrient Bioavailability--Phytonutrients and Beyond Lincoln, NB. June 3, 2013.
 26. Lishi Yan, Libing Zhang, and Bin Yang*, “Enhancement of Total Sugar and Lignin Yields through Dissolution of Poplar Wood by Water and/or Dilute Acid Flowthrough Pretreatment”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May 1st, 2013.
 27. Dhrubojyoti D. Laskar, Bin Yang*, Xiaowen Chen and Melvin Tucker, “Novel Catalytic Processing of Lignin to Aromatic Hydrocarbons”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May 2nd, 2013.
 28. Dhrubojyoti D. Laskar, Melvin Tucker, and Bin Yang, “Upgrading Biomass Derived Lignin for Hydrocarbon Production”, AIChE annual meeting, Pittsburgh, PA, November 1st, 2012.
 29. Dhrubojyoti D. Laskar, Lishi Yan, and Bin Yang, “Process development for selective lignin depolymerization and hydrodeoxygenation (HDO) reactions for efficient production of hydrocarbon fuels”, 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2012.
 30. Lishi Yan, Bin Yang, “Comparative Reaction Kinetics of Acid Hydrolysis of Plant Biomass and Algae Biomass” AIChE annual meeting, Minneapolis, MN, October 18, 2011.
 31. Bin Yang, “Role of Hemicellulose-Lignin Oligomers Dissolution in Flowthrough Pretreatment of Cellulosic Biomass” 33rd Symposium on Biotechnology for Fuels and Chemicals, Seattle, WA, May 2011.
 32. Bin Yang, “Advanced Enzymatic Hydrolysis of Lignocellulosic Biomass”, 2010 World Congress on Industrial Biotechnology and Bioprocessing, June 28, 2010. Washington DC.
 33. Bin Yang “Toward Understanding Fundamentals of Enzymatic Hydrolysis of Cellulose”, 2010 World Congress on Industrial Biotechnology and Bioprocessing, June 28, 2010. Washington DC.
 34. Jian Shi, Bin Yang*, and Charles Wyman, Evaluation of Cellulose Reactivity with CBH1 and/or EG2 during Hydrolysis, AIChE annual meeting, Nashville, TN, November 2009.
 35. Jian Shi, Mirvat Ebrik, Bin Yang*, and Charles Wyman, The Potential for Cellulosic Ethanol Production from Municipal Solid Waste, AIChE annual meeting, Nashville, TN, November 2009.
 36. Jiacheng Shen, Bin Yang, and Charles Wyman, Kinetic Study of Hydrochloric Acid-Catalyzed Hydrolysis of Cellulose to Levulinic and Formic Acid, AIChE annual meeting, Nashville, TN, November 2009.

37. Qing Qing, Bin Yang, and Charles Wyman, Understanding the Effects of Xylooligomers on Cellulose Enzymatic Hydrolysis, AIChE annual meeting, Nashville, TN, November 2009.
38. Taiying Zhang, Bin Yang, and Charles Wyman, Development of Comprehensive Models to Predict the Processability of Miscanthus in Biological Conversion, AIChE annual meeting, Nashville, TN, November 2009.
39. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman, Properties of Cellulase and Non-Cellulase Enzymes and Their Interactions with Switchgrass Processed by Leading Pretreatment Technologies, AIChE annual meeting, Nashville, TN, November 2009.
40. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman, Comparative Material Balances around Leading Pretreatment Technologies for the Conversion of Switchgrass to Soluble Sugars, AIChE annual meeting, Nashville, TN, November 2009.
41. Jian Shi, Charles E. Wyman, Bin Yang* "Key Factors Controlling Enzymatic Hydrolysis of Cellulosic Biomass", 2009 World Congress on Industrial Biotechnology and Bioprocessing, July 21, 2009. Montreal, Canada.
42. Taiying Zhang, Charles E. Wyman, Bin Yang* " Identification of Desirable Traits in Miscanthus to Enhance Total Sugar Yields in Biological Conversion," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
43. B. Yang, C. Wyman, "Advancing Cellulosic Ethanol Technology," Advanced Bioenergy Technologies and Biofuels from Municipal Wastes, Sacramento, CA, March 2007, 63, 2007.
44. B. Yang, R. Kumat, C. Wyman, "Evaluation of Enzymatic Digestibility of Solids Prepared by Leading Pretreatment Technologies," The 2007 World Congress on Industrial Biotechnology and Bioprocessing, Orlando, FL, March 2007, 61, 2007.
45. B. Yang, Y. Lu, C. Wyman, "Cellulosic Ethanol for Sustainable Transportation and A Perspective for Production in China," 2006 World Biofuels Symposium, China. Beijing, September 2006, 70, 2006
46. B. Yang, Y. Lu, J. Sun, D. Su, "The Potential for Cellulosic Ethanol Production in China," ISAF XV International Symposia on Alcohol Fuels, San Diego, CA, September 2005, 66, 2005
47. Bin Yang, Deidre M. Willies, and Charles E. Wyman. Improving Ethanol Yields by Lignin Blockers. The World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada. July 11-14. 2006 (Chair of Breakthrough in Enzymatic Bioprocessing).
48. Bin Yang, Deidre M. Willies, and Charles E. Wyman. Changes in the in the Enzymatic Digestion Rate of Cellulose with Conversion. The World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada. July 11-14. 2006 (Chair of Issues of Enzymatic Hydrolysis Lignocellulosic biomass).
49. B. Yang, Y. Lu, "Cellulosic Ethanol in China," 28rd Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN, April 2006, 67, 2006
50. B. Yang, C. Wyman, "Application of Lignin Blockers to Describe Adsorption of Cellulase on Cellulose of Pretreated Substrates and Their Hydrolysis," AIChE Annual Meeting (oral presentation), Austin, TX, November 2004, 1, 2004.
51. B. Yang, C. Wyman, "Can Cellulase Adsorption on Lignin be Reduced," 26th Symposium on Biotechnology for Fuels and Chemicals (oral presentation), Chattanooga, TN, May 2004, 67, 2004.
52. B. Yang, C. Wyman, "Effect of Hemicellulose and Lignin Removal for Batch and Flowthrough Pretreatment on the Enzymatic Digestibility of Corn Stover," In 25th Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO, May 2003, 1, 2003.

53. B. Yang, C. Wyman, "The Effect of Flowthrough Reactor Pretreatment on the Digestibility of Corn Stover Cellulose," AIChE Annual Meeting (oral presentation), Indianapolis, Indiana, November 2002, 56,
54. B. Yang, C. Liu, C. Wyman, "Comparison of Batch & Flowthrough Reactors for Hemicellulose Hydrolysis," 24th Symposium on Biotechnology for Fuels and Chemicals (Oral presentation), Edited by N.R. R. Laboratory, Breckenridge, CO, USA, May 2002, 77, 2002.
55. B. Yang, K. Gao, "Dietary fiber from bagasse," International Symposium Health Food '95 (English), GZ, China, January 1995, 162-165, 1995.

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1. Jian Shi, Mirvat Ebrik, Bin Yang*, and Charles E. Wyman, "Final Report of The Potential of Cellulosic Ethanol Production from Municipal solid waste: A Technical and Economic Evaluation" UC Energy Institute, 2009. <http://escholarship.org/uc/item/99k818c4>.
2. Taiying Zhang, Bin Yang*, and Charles E. Wyman, "Production of Fermentable Sugars from New Energy Crop-*Miscanthus*." Mendel Biotechnology, September 2009.
3. C. Wyman, B. Yang, "Final Report of Fundamental of Biomass Hydrolysis to Reduce Sugar Costs through a Concentrated Research Approach," United States Department of Energy under Solicitation Number DE-PS36-00G010182, 2004.
4. C. Wyman, B. Yang, " Lignin Blockers for Lower Cost Enzymatic Hydrolysis of Pretreated Cellulose," United States Department of Agriculture Cooperative State Research, Education and Extension Service, grant number, grant number 2004-35504-14668.
5. B. Yang, "Final Report of Bagasse to Ethanol," NSF- GD, China, 1996.

PATENTS

A. Disclosure of Invention

1. B, Yang and H. Wang, "Hydrodeoxygenation of lignin to hydrocarbons by using cheap bimetallic catalysts supported on zeolite Y", Application No. 62410203, October 19th, 2016.
2. B, Yang and H. Wang, "Catalytic Conversion of Biomass-derived Lignin to Polystyrene", Application No. 74152632, February 24th, 2016.
3. B, Yang and H. Wang, "Catalytic Upgrading Biomass-Derived Lignin to Jet Fuel Range Hydrocarbons and Chemicals", Application No. 62152732, April 24th, 2015.
4. B. Yang, "Convert Biomass-derived lignin to Avgas", Application No. 62037798, August 15th, 2014.
5. B. Yang, L. Yan, "Hydrothermal Flowthrough Pretreatment of Lignocelulosic Biomass to Maximize Fermentable Sugars and Lignin Yields" PCT/US14/47127, July 18th, 2014.
6. B. Yang, "Production of Polyethylene Terephthalate from Lignin", Application No. 62004838, May 29th, 2014.
7. B. Yang, "Accelerated Solvent Extraction for Lignin", Application. No. 61721385, Date: November 1st, 2012.
8. B. Yang, "Hydrothermal Pretreatment", Application. No. 61666102, Date: June 29th, 2012.

9. B. Yang, "Jet Fuel Production from Biomass Derived Lignin", Application. No. 61640502, Date: April 30th, 2012.
10. B. Yang, C. Wyman, "Lignin-blockers and Uses Thereof", Pub. No. US2011/0076725A1, Pub. Date: March 31st, 2011.
11. B. Yang, J. Shi, C. Wyman, " Non-catalytic additives to enhance biodegradation of cellulosic biomass," UCCASENO: 2009-207-1, Date Disclosed: April 2009, Date Filed: June 2009
12. L. Yang, B. Yang, " Synthetic Bioprocessing of Full Carbon from Cellulosic Biomass to Ethanol," Date Disclosed: September 2009, Date Filed: November, 2nd, 2009. Application Number: US 61/280,253.
13. B. Yang, C. Wyman, "Treatment of lignocellulosic biomass with surfactants," UCCASENO: 2007-462-1, WO 2008134037, Date Filed: April 2007.
14. C. Wyman, B. Yang, "Treatment of pretreated biomass with lignin blockers and/or their recovery," UCCASENO: 2008-207-1, Date Disclosed: August 2007, Date Filed: September 2007.
15. B. Yang, " Bioprocessing of Carbon Dioxide to Hydrocarbons," Date Disclosed: May 2010, Date Filed: June 17th, 2010. Application Number: US 61/355,932.

B. Granted Patents by the Patent and Trademark Office

1. B. Yang, D. Laskar, "Apparatus and Process for preparing reactive lignin with high yield from plant biomass for production of fuels and chemicals", Date Issues: December 13, 2016, U.S. Patent NO. 9,518,076.
2. B. Yang, C. Wyman, "Lignin-blockers and Uses Thereof," Date Issued: November 12, 2013, U.S. Patent No. 8,580,541 B2.
3. B. Yang, C. Wyman, "Lignin-blocking Treatment of Biomass Uses Thereof," Date Issued: October 2009, U.S. Patent No. 7,604,967.
4. B. Yang, C. Wyman, "Lignin-blockers and Uses Thereof", Date Issued: January 25th, 2011, U.S. Patent No. 7,875,444B2.
5. B. Yang, K. Gao, "Dietary Fiber Powder of Bagasse," Date Disclosed: January 1994, Date Issued: July 2000, Chinese Patent Z.L. 94101330.8

SYMPOSIA/CONFERENCE PROCEEDINGS

1. Xiaolu Li, YuCai He, Christopher Smith, Andrew J Schmid, and Bin Yang "Biological Conversion of Aqueous Wastes from a Pilot Hydrothermal Liquifaction Biorefinery to Lipids", 2016 ASABE Annual International Meeting, Orlando, FL, July 18, 2016.
2. Hongliang Wang, Yuling Qin, Langli Luo, Chongmin Wang, Xiaowen Chen, Melvin P. Tucker, and Bin Yang "Ru-Based Bimetallic Catalysts Supported on Zeolite H+-Y For The Hydrodeoxygenation of Softwood Lignin", 38th Symposium on Biotechnology for Fuels and Chemicals, Baltimore, MD, April 25th, 2016.
3. Hao Ruan, Yuling Qin, Hongliang Wang, Nels Olson, and Bin Yang, "Catalytic Upgrading of Biomass-Derived Lignin to New Bio Jet Fuel and Its Qualification", 38th Symposium on Biotechnology for Fuels and Chemicals, Baltimore, MD, April 26th, 2016.
4. Bin Yang. "lignin to Jet fuel" Defense Innovation Summit & SBIR/STTR Innovation Summit, Austin, TX, December 1st, 2015

5. Hongliang Wang, Heng Wang, Hao Ruan, Amity Andersen, Bojana Ginovska-Pangovska, John Cort, John Miller, and Bin Yang “Modeling the Transformation of Biomass-Derived Lignin to Biofuels” The 2015 Annual Meeting of the Pacific Coast Catalysis Society, Richland, WA. September, 17th, 2015.
6. Hongliang Wang, Hao Ruan, Haisheng Pei, Huaming Wang, Xiaowen Chen, Melvin P. Tucker, John R. Cort, and Bin Yang “Aqueous Phase Hydrodeoxygenation of Biomass-Derived Lignin to Jet Fuels” The 2015 Annual Meeting of the Pacific Coast Catalysis Society, Richland, WA. September, 17th, 2015.
7. Libing Zhang, Hongliang Wang, Lishi Yan, Bin Yang “Flowthrough Pretreatment of Biomass for Fermentable Sugars and Reactive Lignin Production” The 2015 S-1041- The Science and Engineering for a Biobased Industry and Economy Business Meeting and Symposium, Wooster, OH, August 10, 2015.
8. Hongliang Wang, Libing Zhang, Hao Ruan, and Bin Yang “The ZnCl₂ Induced Catalytic Upgrading of Softwood Lignin to Aromatics/Hydrocarbons”, 37th Symposium on Biotechnology for Fuels and Chemicals, San Diego, CA, April 28th, 2015.
9. Libing Zhang, Zhou Lu, Luis VelardeRuizEsparza, Li Fu2 Yunqiao Pu, Shi-You Ding, Arthur J. Ragauskas, Hongfei Wang, and Bin Yang “Vibrational spectral signatures of crystalline cellulose using high resolution broadband sum frequency generation vibrational spectroscopy (HR-BB-SFG-VS)”, 37th Symposium on Biotechnology for Fuels and Chemicals, San Diego, CA, April 28th, 2015.
10. Libing Zhang, Gildardo Soto, Haisheng Pei, Zheming Wang, and Bin Yang, “Flowthrough Pretreatment of Softwood”, 2014 ASABE and CSBE/SCGAB Annual International Meeting, July 15, 2014, Montreal, Quebec Canada.
11. Bin Yang, Dhrubojyoti D. Laskar, and Melvin Tucker, “Noble-Metal Catalyzed Hydrodeoxygenation of Biomass-Derived Lignin to Aviation Fuel”, 36th Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL, April 29th, 2014.
12. Lishi Yan, Libing Zhang, and Bin Yang “Kinetic Modeling of Dilute Acid Flowthrough Pretreatment of Poplar Wood”, 36th Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL, April 30th, 2014.
13. Libing Zhang, Dhrubojyoti D. Laskar, Lishi Yan and Melvin Tucker “Characterization of Lignin Derived from Water-only and Dilute Acid Flowthrough Pretreatment of Poplar Wood at Elevated Temperatures”, 36th Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL, April 30th, 2014.
14. Daochen Zhu, Javier Soto, Jungang Wang, Lindsay D. Eltis, Joshua Yuan, Art J. Ragauskas, Jianzhong Sun, and Bin Yang¹ “Bioprocessing of Biomass Derived Lignin to Lipids”, 36th Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL, April 29th, 2014.
15. Lishi Yan, Libing Zhang, and Bin Yang, “Dissolution of Lignocellulosic Biomass with Acidic Hot Water”, AIChE annual meeting, San Francisco, CA, November 7th, 2013
16. Lishi Yan, Libing Zhang, and Bin Yang*, “Enhancement of Total Sugar and Lignin Yields through Dissolution of Poplar Wood by Water and/or Dilute Acid Flowthrough Pretreatment”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May 1st, 2013.
17. Libing Zhang, Hongfei Wang, Shi-You Ding, Zhou Lu, Luis Velarde Ruiz Esparza, Yunqiao Pu, and Bin Yang*, “Characterization of Enzymatic Hydrolysis of Cellulose via Sum

- Frequency Generation Vibrational Spectroscopy”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May, 2013.
18. Dan K. Lehrburger, Dhrubojyoti Laskar, Lishi Yan, Libing Zhang, Bin Yang*, “Aqueous Phase Deconstruction and Upgrading of Biomass to Hydrocarbon Liquids and Chemicals”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May, 2013.
 19. Dhrubojyoti D. Laskar, Bin Yang*, Xiaowen Chen and Melvin Tucker, “Novel Catalytic Processing of Lignin to Aromatic Hydrocarbons”, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, May 1st, 2013.
 20. Dhrubojyoti D. Laskar, Melvin Tucker, and Bin Yang, “Upgrading Biomass Derived Lignin for Hydrocarbon Production”, AIChE annual meeting, Pittsburgh, PA, November 1st, 2012.
 21. Dhrubojyoti D. Laskar, Lishi Yan, and Bin Yang, “Process development for selective lignin depolymerization and hydrodeoxygenation (HDO) reactions for efficient production of hydrocarbon fuels”, 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2012.
 22. Shyretha Brown, Xianyi Zhang, Hongfei Wang, Ziyu Dai, Li Tan, and Bin Yang, “Dynamic Characterization of Enzymatic Hydrolysis of Cellulose via a Broadband Stimulated Raman Spectroscopy”, 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2012.
 23. Lishi Yan, Dhrubojyoti D. Laskar, Suh-Jane Lee, and Bin Yang, “Effects of diverse catalysts and reaction kinetics towards selective production of 5-hydroxymethyl furfural (HMF) from Algae Biomass”, 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2012.
 24. Lishi Yan, Bin Yang, “Comparative Reaction Kinetics of Acid Hydrolysis of Plant Biomass and Algae Biomass” AIChE annual meeting, Minneapolis, MN, October 18, 2011.
 25. Lishi Yan, Bin Yang, “Comparative Study of Acid Degradation of Switchgrass and Agar” 33rd Symposium on Biotechnology for Fuels and Chemicals, Seattle, WA, May 2011.
 26. Bin Yang, “Advanced Enzymatic Hydrolysis of Lignocellulosic Biomass”, 2010 World Congress on Industrial Biotechnology and Bioprocessing, June 28, 2010. Washington DC.
 27. Bin Yang, “Toward Understanding Fundamentals of Enzymatic Hydrolysis of Cellulose”, 2010 World Congress on Industrial Biotechnology and Bioprocessing, June 28, 2010. Washington DC.
 28. Jae, J., Lin, Y.-C., Carlson, T.R., Shen, J., Zhang, T., Yang, B., Wyman, C.E., Conner, W.C., Huber, G.W., Tompsett, G.A. 2010. Integrated process for depolymerization of lignocellulosic materials: Maximizing carbon efficiency by combining hydrolysis with pyrolysis. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, 2010, FUEL-226.
 29. Jae, J., Tompsett, G.A., Lin, Y.-C., Carlson, T., Shen, J., Zhang, T., Yang, B., Wyman, C.E., Conner, W.C., Huber, G.W. 2010. Integrated process for depolymerization of lignocellulosic materials: maximizing carbon efficiency by combining hydrolysis with pyrolysis. Prepr. Symp. - Am. Chem. Soc., Div. Fuel Chem., 55(1), 222-223.
 30. B. Yang*, Y. Pu, A.J. Ragauskas, J. Shi, C. Wyman, Toward understanding fundamentals of enzymatic hydrolysis of cellulose through a restart approach. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater beach, FL, April 2010.

31. B. Yang*, X. Zhang and B.K. Ahring, Further research on hot water flowthrough pretreatment. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater beach, FL, April 2010.
32. B.S. Donohoe, T.B. Vinzant, R.T. Elander, V.R. Pallapolu Y.Y. Lee, R. Garlock, V. Balan B.E. Dale, Y. Kim, N.S. Mosier, M.R. Ladisch, Falls, R. Sierra, M.T. Holtzapple, J. Shi, M.A. Ebrik, T. Redmond, B. Yang, C.E. Wyman, B.R. Hames, S.R. Thomas, R.E. Warner. Surface and ultrastructural characterization of raw and pretreated switchgrass from various leading pretreatment technologies. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater beach, FL, April 2010.
33. J. Shi, M.A. Ebrik, T. Redmond, B. Yang, C.E. Wyman, R. Garlock, V. Balan, B.E. Dale, V.R. Pallapolu, Y.Y. Lee, Y. Kim, N.S. Mosier, M.R. Ladisch, M.T. Holtzapple, M. Falls, R. Sierra, B.S. Donohoe, T.B. Vinzant, R.T. Elander, B.R. Hames, S.R. Thomas, Ceres, R.E. Warner. Interactions of cellulase and non-cellulase enzymes with ideal substrates and switchgrass processed by leading pretreatment technologies. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater beach, FL, April 2010.
34. R. Garlock, V. Balan, B.E. Dale, V.R. Pallapolu, Y.Y. Lee, Y. Kim, N.S. Mosier, M.R. Ladisch, M.T. Holtzapple, M. Falls, R. Sierra, J. Shi, M.A. Ebrik, T. Redmond, B. Yang, C.E. Wyman, B.S. Donohoe, T.B. Vinzant, R.T. Elander, B. Hames, S. Thomas, R.E. Warner. Comparative material balances around leading pretreatment technologies for the conversion of switchgrass to soluble sugars. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater beach, FL, April 2010.
35. Jian Shi, Bin Yang*, and Charles Wyman " Evaluation of Cellulose Reactivity with CBH1 and/or EG2 during Hydrolysis," AIChE annual meeting, Nashville, TN, November 2009.
36. Jian Shi, Mirvat Ebrik, Bin Yang*, and Charles Wyman " The Potential for Cellulosic Ethanol Production from Municipal Solid Waste," AIChE annual meeting, Nashville, TN, November 2009.
37. Jiacheng Shen, Bin Yang, and Charles Wyman " Kinetic Study of Hydrochloric Acid-Catalyzed Hydrolysis of Cellulose to Levulinic and Formic Acid," AIChE annual meeting, Nashville, TN, November 2009.
38. Qing Qing, Bin Yang, and Charles Wyman " Understanding the Effects of Xylooligomers on Cellulose Enzymatic Hydrolysis," AIChE annual meeting, Nashville, TN, November 2009.
39. Taiying Zhang, Bin Yang, and Charles Wyman " Development of Comprehensive Models to Predict the Processability of Miscanthus in Biological Conversion " AIChE annual meeting, Nashville, TN, November 2009.
40. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman" Properties of Cellulase and Non-Cellulase Enzymes and Their Interactions with Switchgrass Processed by Leading Pretreatment Technologies" AIChE annual meeting, Nashville, TN, November 2009.
41. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman" Comparative Material Balances around Leading Pretreatment Technologies for the Conversion of Switchgrass to Soluble Sugars " AIChE annual meeting, Nashville, TN, November 2009.
42. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman" Effects of Enzyme Loading and β -Glucosidase on Enzymatic Hydrolysis of Switchgrass Processed by Leading Pretreatment Technologies " AIChE annual meeting, Nashville, TN, November 2009.
43. Jian Shi, Mirvat A. Ebrik, Tim Redmond, Bin Yang, and Charles E. Wyman" Comparative Study on Enzymatic Digestibility of Upland and Lowland Switchgrass Varieties

Processed by Leading Pretreatment Technologies" AIChE annual meeting, Nashville, TN, November 2009.

44. Shi Jian, Bin Yang, Charles E. Wyman " Fundamentals of Enzymatic Hydrolysis of Cellulose through a Restart Approach," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
45. Jian Shi, Tim Redmond, Mirvat Ebrik, Bin Yang, and Charles Wyman " Sugar Yields from Switchgrass by Dilute Acid and Sulfur Dioxide Pretreatment and Subsequent Enzymatic Hydrolysis," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
46. Mirvat Ebrik, Jian Shi, Bin Yang, and Charles Wyman " Biological Conversion of Municipal Solid Wastes to Ethanol," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
47. Jian Shi, Bin Yang, and Charles Wyman " Limiting Factors of Enzymatic Hydrolysis of Lignocellulosic Biomass at High Solid Loading," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
48. Qing Qing, Bin Yang, and Charles Wyman " Understanding the Inhibition Effects of Xylooligomers on Enzymatic Hydrolysis of Cellulose," 31rd Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 2009.
49. S. Brethauer, M. Studer, B. Yang, C. Wyman, "Effect of BSA Treatment of Cellulosic Biomass on Batch and Continuous Enzymatic Hydrolysis," AIChE annual meeting, Philadelphia, PA, November, 2008.
50. D. Willies , B. Yang, C. Wyman, The Potential of Cellulosic Ethanol Production from Municipal Solid Wastes," AIChE annual meeting, Philadelphia , PA, November, 2008.
51. J. Shi, B. Yang, C. Wyman, "Evaluation of Cellulose Reactivity with Purified Enzyme Components during Hydrolysis," AIChE annual meeting, Philadelphia, PA, November, 2008.
52. Q. Qing, B. Yang, C. Wyman, "Advancing Hemicellulose and Cellulose Hydrolysis from Cellulosic Biomass by Surfactant Pretreatment," AIChE annual meeting, Philadelphia , PA, November, 2008.
53. J. Shi, B. Yang, C. Wyman, "Pretreatment and Enzymatic Hydrolysis of CAFI 3 Switchgrass," AIChE annual meeting, Philadelphia, PA, November, 2008.
54. J. Shi, B. Yang, C. Wyman, "The Potential of Cellulosic Ethanol Production from Municipal Solid Wastes," AIChE annual meeting, Philadelphia, PA, November, 2008.
55. Bin Yang, and Charles E. Wyman " Potential for Low Cost Pretreatment of Cellulosic Biomass for Biological Production of Fuels and Chemicals, Portland, OR, August, 2008.
56. Qing Qing, Bin Yang, Charles E. Wyman, " Advancing Hemicellulose and Cellulose Hydrolysis from Cellulosic Biomass by Surfactant Pretreatment," 30rd Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2008 (Oral Presentation).
57. Jian Shi, Bin Yang, Charles E. Wyman " Fundamentals of Enzymatic Hydrolysis of Cellulose Through a Restart Approach," 30rd Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2008.
58. Simone Brethauer, Michael Studer, Bin Yang and Charles E. Wyman, " Effect of BSA treatment of cellulosic biomass on batch and continuous enzymatic hydrolysis," 30rd Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2008.
59. Bin Yang, and Charles E. Wyman, " Opportunities and Challenges for Ethanol Production from Cellulosic Biomass," China Summit Forum on Industrial Biotechnology Development, Tianjin, China, April 19, 2008.

60. Bin Yang, Deidre Willies, Jian Shi and Charles E. Wyman, "Fundamentals of Enzymatic Hydrolysis of Cellulosic Biomass," 2008 World Congress on Industrial Biotechnology and Bioprocessing, Chicago, April 28, 2008.
61. B. Yang, "Advancing Cellulosic Ethanol Technology," Institute of Microbiology Chinese Academy of science, Beijing, China, September 2007.
62. B. Yang, C. Wyman, "Cellulosic Ethanol for Low Carbon Emission Sustainable Fuels," The First International Workshop on Low Carbon Fuels and Climate in China, Beijing, China, September 2007, 77, 2007.
63. C. Wyman, B. Yang, B. Dale, R. Elander, M. Holtzapple, M. Ladisch, Y. Lee, C. Mitchinson, J. Saddler, "Comparative hydrolysis, fermentation, and economic information for application of leading pretreatment technologies to corn stover and poplar," Abstracts of Papers, 234th ACS National Meeting, Boston, MA, United States, August 19-23, 2007, Boston, MA, August 2007, 1, 2007.
64. C. Wyman, B. Yang, D. Willies, "Lignin blockers to reduce costs of enzymatic hydrolysis of pretreated cellulose," Abstracts of Papers, 234th ACS National Meeting, Boston, MA, United States, August 19-23, 2007, Boston, MA, August 2007, 1, 2007.
65. R. Kumar, B. Yang, C. Wyman, "Evaluation of Enzymatic Digestibility of Solids Prepared by Leading Pretreatment Technologies," Gordon Research Conferences - Cellulases & Cellulosomes, Andover, NH, July 2007, 46, 2007.
66. Q. Qing, M. Studer, B. Yang and C. Wyman, "Impact of surfactants on pretreatment of corn stover," 29rd Symposium on Biotechnology for Fuels and Chemicals, Denver, CO, May 2007, 30, 2007.
67. B. Yang, C. Wyman, "Advanced Technologies for Cellulosic Ethanol," The Critical Technology of Transformation of Renewable Biomass into Ethanol, Beijing, China, April 2007, 60, 2007.
68. B. Yang, C. Wyman, C. Dale, R. Elander, M. Holtzapple, M. Ladisch, Y. Lee, C. Mitchinson, J. Saddler, "Comparative Sugar Recovery and Fermentation Data and Economic Projections for Application of Leading Pretreatment Technologies to Corn Stover and Poplar," 29rd Symposium on Biotechnology for Fuels and Chemicals, Denver, CO, April 2007, 1, 2007.
69. B. Yang, R. Kumat, C. Wyman, "Evaluation of Enzymatic Digestibility of Solids Prepared by Leading Pretreatment Technologies," The 2007 World Congress on Industrial Biotechnology and Bioprocessing, Orlando, FL, March 2007, 61, 2007.
70. B. Yang, C. Wyman, "Advancing Cellulosic Ethanol Technology," Advanced Bioenergy Technologies and Biofuels from Municipal Wastes, Sacramento, CA, March 2007, 63, 2007.
71. D. Willies, B. Yang, C. Wyman, "Adsorption and Desorption of Cellulase, Beta-Glucosidase, and BSA Protein on Pretreated Corn Stover," AIChE annual meeting, San Francisco, CA, November 2006, 1, 2006.
72. B. Yang, Y. Lu, C. Wyman, "Cellulosic Ethanol for Sustainable Transportation and A Perspective for Production in China," 2006 World Biofuels Symposium, China. Beijing, September 2006, 70, 2006.
73. B. Yang, D. Willies, C. Wyman, "Changes in the in the Enzymatic Digestion Rate of Cellulose with Conversion," The World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada, July 2006, 48, 2006.
74. B. Yang, D. Willies, C. Wyman, "Improving Ethanol Yields by Lignin Blockers," The World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada, July 2006, 54, 2006.

75. B. Yang, Y. Lu, "Cellulosic Ethanol in China," 28rd Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN, April 2006, 67, 2006.
76. D. Willies, B. Yang, C. Wyman, "Adsorption and desorption of cellulase, beta-glucosidase and BSA protein on pretreated corn stover, cellulose and lignin," 28rd Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN, April 2006, 1, 2006.
77. B. Yang, D. Willies, C. Wyman, "Protein Treatment to Reduce Non-Productive Cellulase Adsorption," 14th European Biomass Conference & Exhibition, Paris, France, October 2005, 1, 2005.
78. B. Yang, Y. Lu, J. Sun, D. Su, "The Potential for Cellulosic Ethanol Production in China," ISAF XV International Symposia on Alcohol Fuels, San Diego, CA, September 2005, 66, 2005 (Non-Refereed).
79. D. Willies, B. Yang, C. Wyman, "Application of A New Method to Determine Cellulase and Lignin-blocking Protein Adsorption on Cellulosic Substrates," 27th Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO, May 2005, 1, 2005.
80. B. Yang, C. Wyman, "Effect of Lignin on Xylan Hydrolysis in A Flowthrough Reactor," 27th Symposium on Biotechnology for Fuels and Chemicals, Denver, CO, May 2005, 40, 2005.
81. B. Yang, C. Wyman, "Recognition and Interrupting Hydrolysis of Cellulose," In 27th Symposium on Biotechnology for Fuels and Chemicals, Denver, CO, May 2005, 1, 2005.
82. D. Willies, B. Yang, C. Wyman, "Lignin Blockers for Lower Cost Enzymatic Hydrolysis," USDA NRI Project Director Awardee meeting, Washington, DC, February 2007, 1, 2004.
83. B. Yang, C. Wyman, "Application of Lignin Blockers to Describe Adsorption of Cellulase on Cellulose of Pretreated Substrates and Their Hydrolysis," AIChE Annual Meeting (oral presentation), Austin, TX, November 2004, 1, 2004.
84. O. Mirochnik, E. Attenius, B. Yang, D. Gregg, S. Duff, J. Saddler, "Progress in Softwood to Ethanol Process Design and Optimization," 26th Symposium on Biotechnology for Fuels and Chemicals, Chattanooga, TN, May 2004, 15, 2004.
85. C. Wyman, M. Brennan, A. Converse, M. Gray, S. Jacobsen, X. Li, C. Liu, T. Lloyd, S. Stuhler, B. Yang, "Anomalies in Mass Solubilization and Cellulose Digestibility for Pretreatment of Cellulosic Biomass by Hemicellulose Hydrolysis," In 26th Symposium on Biotechnology for Fuels and Chemicals (oral presentation), Chattanooga, TN, May 2004, 43, 2004.
86. B. Yang, C. Wyman, "Can Cellulase Adsorption on Lignin be Reduced," 26th Symposium on Biotechnology for Fuels and Chemicals (oral presentation), Chattanooga, TN, May 2004, 67, 2004.
87. G. Luli, B. Wood, B. Yang, C. Wyman, S. Zou, Y. Qian, L. Ingram, "Reducing the Cost of Lignocellulose Conversion to Ethanol Stover," In 25th Symposium on Biotechnology for Fuels and Chemicals (oral presentation), Breckenridge, CO, May 2003, 45, 2003.
88. B. Yang, C. Wyman, "Effect of Hemicellulose and Lignin Removal for Batch and Flowthrough Pretreatment on the Enzymatic Digestibility of Corn Stover," In 25th Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO, May 2003, 1, 2003.
89. C. Wyman, M. Brennan, A. Converse, M. Gray, S. Jacobsen, X. Li, C. Liu, T. Lloyd, S. Stuhler, B. Yang, "Hemicellulose hydrolysis: Deviations from customary first-order kinetic models and subsequent cellulose digestion relationships," Abstracts of Papers, 225th ACS National Meeting (oral presentation), New Orleans, LA, March 2003, 86, 2003.

90. B. Yang, C. Wyman, "The Effect of Flowthrough Reactor Pretreatment on the Digestibility of Corn Stover Cellulose," AIChE Annual Meeting (oral presentation), Indianapolis, Indiana, November 2002, 56, 2002.
91. B. Yang, C. Liu, C. Wyman, "Comparison of Batch & Flowthrough Reactors for Hemicellulose Hydrolysis," 24th Symposium on Biotechnology for Fuels and Chemicals (Oral presentation), Edited by N.R. R. Laboratory, Breckenridge, CO, USA, May 2002, 77, 2002.
92. O. Mirochnik, E. Attenius, B. Yang, D. Gregg, S. Duff, J. Saddler, "Progress in softwood to ethanol press design and optimization," 24th Symposium on Biotechnology for Fuels and Chemicals, Edited by N.R. E. Laboratory, Breckenridge, CO, April 2002, 1, 2002.
93. C. Liu, B. Yang, C. Wyman, "Hemicellulose and Lignin Dissolution Profiles of Hot Water Treatment of Corn Stover in the Flowthrough Reactor," In 23rd Symposium on Biotechnology for Fuels and Chemicals, Edited by N.R.E. Laboratory, Breckenridge, CO, April 2001, 54, 2001.
94. B. Yang, J. Saddler, "Fractionation of SO₂-steam pretreated softwoods and hardwoods," 23rd Symposium on Biotechnology for Fuels and Chemicals, Edited by N.R.E. Laboratory, Breckenridge, CO, April 2001, 23, 2001.
95. B. Yang, Y. Lu, D. Gregg, J. Saddler, "Fractionation of SO₂-steam pretreated Douglas fir to enhance enzymatic hydrolysis," 22nd Symposium on Biotechnology for Fuels and Chemicals, Edited by N.R.E. Laboratory, Gatlinburg, TN, April 2000, 46, 2000.
96. B. Yang, K. Gao, "Mechanical means and study pretreatment saccharification and conversion the ethanol from sugarcane bagasse," International Symposium cellulose & lignocellulosics'96, GZ, China, July 1996, 124-126, 1996.
97. B. Yang, K. Gao, "Dietary fiber from bagasse," International Symposium Health Food '95 (English), GZ, China, January 1995, 162-165, 1995.

TEACHING EXPERIENCE

Courses Taught

| University & Time | Course Name | Hours | Class Size | Course Credits | Percent participation |
|-------------------|--|-------|------------|----------------|-----------------------|
| WSU (Spring 2010) | Biomass Conversion Technologies (WSU ChE 481/581 & UI BAE 504) | 40 | 16 | 3 | 25% |
| WSU (Fall, 2010) | Introduction of Biorefinery (ChE 581) | 40 | 8 | 3 | 10% |
| WSU (Spring 2011) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 17 | 3 | 100% |
| WSU (Spring 2012) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 9 | 3 | 100% |
| WSU (Fall 2012) | Graduate Seminar (BSysE 598) | 20 | 63 | 1 | 50% |
| WSU (Spring 2013) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 12 | 3 | 100% |

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|-------------------|--|----|----|---|------|
| WSU (Spring 2014) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 12 | 3 | 100% |
| WSU (Fall 2014) | Advanced Biological Systems Engineering Topics (BSysE 552) | 40 | 3 | 3 | 100% |
| WSU (Spring 2015) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 9 | 3 | 100% |
| WSU (Fall 2015) | Advanced Biological Systems Engineering Topics (BSysE 552) | 40 | 5 | 3 | 100% |
| WSU (Fall 2016) | Advanced Biological Systems Engineering Topics (BSysE 552) | 40 | 5 | 3 | 100% |
| WSU (Spring 2016) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 8 | 3 | 100% |
| WSU (Spring 2017) | Biomass Biological Processing Engineering (BSysE 597) | 40 | 9 | 3 | 100% |

Undergraduate, Graduate Student, Postdocs, and Visiting Scholars supervised

| Student Name | Program Type | Year | | Principal Supervisor |
|-------------------|--------------------------|-------|--------|--|
| | | Start | Finish | |
| Hanna Ingesson | MA | 2000 | 2000 | Guido Zacchi & Saddler JN, Prof. (UBC, Canada) |
| John P. Welsh II | DC-presidential Project | 2002 | 2003 | Charles E Wyman, Prof. (Dartmouth, US) |
| Chelsea L. Wood | Women in Science Project | 2003 | 2004 | Charles E Wyman, Prof. (Dartmouth, US) |
| Fan Zhong | Women in Science Project | 2004 | 2005 | Charles E Wyman, Prof. (Dartmouth, US) |
| Deidre M. Willies | MS | 2004 | 2007 | Charles E Wyman, Prof. (Dartmouth, US) |
| Mitch McKnight | Undergraduate | 2006 | 2007 | Bin Yang (UCR) |
| Michael Studer | Postdoc | 2006 | 2007 | Charles E Wyman, Prof. And Bin Yang (UCR) |
| Simone Brethauer | Postdoc | 2007 | 2009 | Charles E Wyman, Prof. And Bin Yang (UCR) |
| Taiying Zhang | Postdoc | 2008 | 2009 | Charles E Wyman, Prof. And Bin Yang (UCR) |
| Jiachen Shen | Postdoc | 2009 | 2009 | Charles E Wyman, Prof. And Bin Yang (UCR) |
| Mirvat Ebrik | Lab Tech II | 2008 | 2009 | Charles E Wyman, Prof. And Bin Yang (UCR) |
| Jian Shi | Postdoc | 2008 | 2009 | Charles E Wyman, Prof. And Bin Yang (UCR) |

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|-----------------------------|---------------------------|---------|-----------|-------------------|
| Nguyen Vu | Undergraduate | 2007 | 2009 | Bin Yang (UCR) |
| Manjot Singh | Undergraduate | 2008 | 2009 | Bin Yang (UCR) |
| Lishi Yan | PhD student | 2010 | 2014 | Bin Yang (WSU-TC) |
| Derrick Klein | Undergraduate (BIO499) | 12/2010 | 5/2011 | Bin Yang (WSU-TC) |
| Erika Cristina Cutsforth | Undergraduate (BIO499) | 5/2011 | 9/2011 | Bin Yang (WSU-TC) |
| Katrina Peterson | Undergraduate (BIO499) | 9/2011 | 1/2012 | Bin Yang (WSU-TC) |
| Shyretha D. Brown | PhD student | 1/2012 | 9/2013 | Bin Yang (WSU-TC) |
| Dhrubojyoti Dey Laskar | Research Associate | 12/2011 | 1/11/2013 | Bin Yang (WSU-TC) |
| Scott Matthew Dawson | Undergraduate (BIO499) | 1/2012 | 6/2012 | Bin Yang (WSU-TC) |
| Tyler Matthew Rexus | Undergraduate (BIO499) | 8/2012 | 6/2013 | Bin Yang (WSU-TC) |
| Libing Zhang | PhD student | 8/2012 | 9/2016 | Bin Yang (WSU-TC) |
| Hao Ruan | PhD student | 8/2014 | Present | Bin Yang (WSU-TC) |
| Xiaoyun Xue | PhD student | 8/2014 | 9/2015 | Bin Yang (WSU-TC) |
| Roger Stringer | Undergraduate (BIO499) | 1/2013 | 9/2013 | Bin Yang (WSU-TC) |
| Gildardo Soto | Undergraduate (BIO499) | 9/2013 | 9/2014 | Bin Yang (WSU-TC) |
| Francisco Javier Soto | Undergraduate | 9/2013 | 9/2014 | Bin Yang (WSU-TC) |
| Daniel K. Lehrburger | PhD student | 1/2013 | 1/2015 | Bin Yang (WSU-TC) |
| Jungang Wang | PhD student | 8/2013 | 1/2014 | Bin Yang (WSU-TC) |
| Sergio Baravalle | MS student | 8/2013 | 5/2015 | Bin Yang (WSU-TC) |
| Daochen Zhu | Postdoc Researcher | 2/2014 | 8/2014 | Bin Yang (WSU-TC) |
| Haisheng Pei | Postdoc Researcher | 2/2014 | 12/2014 | Bin Yang (WSU-TC) |
| Yessica Lewis Carnley | Undergraduate (ENV499) | 9/2014 | 5/2015 | Bin Yang (WSU-TC) |
| Christopher Smith | Undergraduate (ENV499) | 1/2015 | Present | Bin Yang (WSU-TC) |
| Andrews Whitney | Undergraduate (ENV499) | 9/2014 | 5/2015 | Bin Yang (WSU-TC) |
| Hongliang Wang | Postdoc Researcher | 7/2014 | Present | Bin Yang (WSU-TC) |
| Pei-Yu Leu | MS student | 1/2015 | 6/2016 | Bin Yang (WSU-TC) |

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|--------------------------|---------------------------|--------|---------|-------------------|
| Hasan Coban | Postdoc Researcher | 1/2015 | 8/2015 | Bin Yang (WSU-TC) |
| Francisco Javier Soto | Research Assistant | 2/2015 | 7/2015 | Bin Yang (WSU-TC) |
| Xiaolu Li | PhD student | 8/2015 | Present | Bin Yang (WSU-TC) |
| Yucai He | Visiting Professor | 9/2015 | 9/2016 | Bin Yang (WSU-TC) |
| Yuling Qin | Postdoc Researcher | 9/2015 | 5/2016 | Bin Yang (WSU-TC) |
| Karina M. Garcia, | Undergraduate (BIO499) | 9/2015 | 1/2016 | Bin Yang (WSU-TC) |
| Elmar M. Villota | PhD student | 1/2016 | 8/2016 | Bin Yang (WSU-TC) |
| Sohrab Haghghi Mood | PhD student | 1/2016 | 9/2016 | Bin Yang (WSU-TC) |
| Fitria Fnu | PhD student | 8/2016 | Present | Bin Yang (WSU-TC) |
| Zhangyang Xu | PhD student | 8/2016 | Present | Bin Yang (WSU-TC) |
| Muhammad Usman Khan | PhD student | 8/2016 | 1/2017 | Bin Yang (WSU-TC) |
| Rongchun Shen | Visiting Professor | 1/2016 | 1/2017 | Bin Yang (WSU-TC) |
| Haoxi Ben | Research Scientist | 2/2016 | 1/2017 | Bin Yang (WSU-TC) |
| Seema Verma | Research Scientist | 8/2016 | 1/2017 | Bin Yang (WSU-TC) |
| Libing Zhang | Postdoc Researcher | 9/2016 | Present | Bin Yang (WSU-TC) |

DISSERTATIONS DIRECTED

1. Libing Zhang. 2016. "The Controlling Factors Involved in Biomass Aqueous Pretreatment: Fundamentals to Applications" PhD Thesis, Washington State University, Richland, Washington, July.
2. Peiyu Leu. 2016. "Preliminary Economics for Waste Lignin to Lipids Production from Cellulosic Ethanol Refinery- A Bolt-on Technology," MS Report, Washington State University, Richland, Washington, June.
3. Sergio Baravalle. 2015. "Rethinking Equality: A new concept for the redistribution of natural resources and sustainable development based on renewable energies," MS Thesis, Washington State University, Richland, Washington, April.

4. Lishi Yan. 2014. "Kinetic Characterization of Hot Water and Dilute Acid Pretreatment of Lignocellulosic Biomass," PhD Thesis, Washington State University, Richland, Washington, May.
5. Hanna Ingesson. 2000. "The Effect of Shaking Regime on the Rate and Extent of Enzymatic Hydrolysis of Cellulose," MS Thesis, Department of Chemical Engineering, Lund University, Sweden, July.

COMMITTEE MEMBER FOR GRADUATE STUDENTS

| Student Name | Program Type | Year | | Principal Supervisor |
|----------------------|--------------|-------|--------|----------------------|
| | | Start | Finish | |
| Xiaochen Yu | MS | 2008 | 2010 | Shulin Chen |
| Allan Gao | MS | 2010 | 2012 | Shulin Chen |
| Xin Gao | MS | 2010 | 2012 | Shulin Chen |
| Sergio Baravalle | MS | 2013 | 2015 | Bin Yang |
| Lishi Yan | PhD | 2010 | 2014 | Bin Yang |
| Libing Zhang | PhD | 2012 | 2016 | Bin Yang |
| Hao Ruan | PhD | 2014 | | Bin Yang |
| Peiyu Leu | MS | 2015 | 2016 | Bin Yang |
| Xiaoyun Xue | PhD | 2014 | 2015 | Bin Yang |
| Dan Lehrberger | PhD | 2013 | 2014 | Bin Yang |
| Xiaolu Li | MS | 2015 | | Bin Yang |
| Elmar M. Villota | PhD | 2016 | 2016 | Bin Yang |
| Sohrab Haghighi Mood | PhD | 2016 | 2016 | Bin Yang |
| Jenny Lian | PhD | 2010 | 2013 | Shulin Chen |

| | | | | |
|---------------------|---------------|------|------|-------------|
| Yubin Zeng | PhD | 2010 | 2013 | Shulin Chen |
| Difeng Gao | MS and PhD | 2010 | 2014 | Shulin Chen |
| Jijiao Zeng | PhD | 2010 | 2013 | Shulin Chen |
| Xiaochen Yu | PhD | 2011 | 2013 | Shulin Chen |
| Ali Abghari | PhD | 2012 | | Shulin Chen |
| Mohammadali Azadfar | PhD | 2012 | 2015 | Shulin Chen |
| Parlina Lin | MS | 2012 | 2015 | Shulin Chen |
| Yupeng Liu | MS | 2013 | 2015 | Hanwu Lei |
| Shuai Zhang | PhD | 2013 | | Shulin Chen |
| Innu Chaudhary | PhD | 2014 | | Shulin Chen |
| Xiao Fu | PhD | 2014 | | Shulin Chen |

STUDENT AWARDS/SCHOLARSHIP ACHIEVED UNDER YANG'S SUPERVISION

1. Xiaolu Li, 2016-2017 BSE Outstanding Graduate Student Awards
2. Libing Zhang, 2015-2016 BSE Outstanding Graduate Student Awards
3. Libing Zhang, NSF travel grant to attend the S-1041 conference at Ohio, 2015
4. Christopher Smith, Chancellor's Summer Scholar, 2015.
5. Sergio Baravalle, Global Case Competition Winner, 2015.
6. Libing Zhang, 2014-2015 BSE Outstanding Graduate Student Awards
7. "Understanding the Municipal Solid Waste business and its possible combination with renewable energy technologies to create sustainable and innovative solutions"- Sergio Baravalle (M.S. student), Green Talents Award, The Federal Ministry of Education and Research, Germany, November, 2014.
8. "Conversion of Alkali Lignin to Jet fuel"- Argho Datta, Washington State Academy of Sciences 7th Annual Symposium, Seattle, WA. September 18, 2014
9. "Comy Carbon Supercapactors?"- Viknesh Kasthuri (Richland High School, Richland, WA), won 1st Place, Olympic College President's Award (STEM Award for ninth grade), US Metric Association Award for Best Use of SI Units in Washington State Science and Engineering Fair, 2014.
10. "Conversion of alkali lignin to jet fuel "- Argho Datta (Richland High School, Richland, WA), won Second Place Award in the senior division in Washington State Science and Engineering Fair, 2014.
11. Shyretha Brown, NSPIRE Scholarship, 2012.
12. "Using Waste to Clean Up the Environment: Cellulosic Ethanol, the Future of Fuels- EPA P3 Award # 83432501" UC Riverside, Senior Design Group, 2009.

13. “An Ethanol World Economy? A Comparison of the Financial Viability of Ethanol Production from Grass vs. Woodchips”- Jason Lin and Daniel Nguyen (Kings high School, Riverside, CA) won the second place of California State Science Fair, 2008.
14. Nguyen Vu, RAP Award – UC Riverside, 2008
15. Manjot Singh, Best Undergrad Student Research Award– UC Riverside, 2009
16. Zhong Fan, Woman in Science Award- Dartmouth College, 2004 (Co-supervisor)
17. Chelsea L. Wood, Woman in Science Award- Dartmouth College, 2003(Co-supervisor)
18. John P. Welsh II, Presidential Project Award – Dartmouth College, 2003(Co-supervisor)

PREVIOUS RESEARCH

Assistant and Associate Professor, 2009 to present, and, *Department of Biological Systems Engineering and Bioproducts, Sciences & Engineering Laboratory, Washington State University – Tri-Cities, Richland, Washington*. The current research interests lie in areas of pretreatment, enzymatic hydrolysis, catalytic, and biological pathways that accelerate commercial application of biomass processing to fuels and chemicals.

Associate Research Engineer, 2006 to 2009, *Bourns College of Engineering, Center for Environmental Research and Technology (CE-CERT), University of California, Riverside, California*. Led research on advancing technologies for releasing sugars from cellulose and hemicellulose fractions of biomass by pretreatment and enzymatic hydrolysis, recovery and fermentation of derived sugars to ethanol.

Research Scientist, 2001 to 2006, *Thayer School of Engineering, Dartmouth College, Hanover, New Hampshire*. Served as co-PIs for research projects on hydrolysis of cellulosic biomass by enzymes and chemicals. Invented a novel lignin blocking technique that significantly improved enzymatic hydrolysis of pretreated biomass at lower cost. Comparative research on batch and flowthrough pretreatment to put in-depth insights on cellulose digestion and removal of both lignin and hemicellulose. In addition, conducted research on integration of an advanced cellulose-producing ethanologenic bacteria with pretreatment to significantly reduce the cost of ethanol from biomass and the USDA project “Coordinated Development of Leading Biomass Pretreatment Technologies”.

Post-doctoral Scholar, 1998 to 2001, *Wood Science Department, University of British Columbia, Vancouver, Canada*. Performed research on steam explosion of wood wastes, including *Douglas fir, SPF, Jack pine, and Aspen* wood, to maximize product yields and determine mass balance. Developed a fractionation technique for hemicellulose, lignin, and cellulose recovery. Performed research on adsorption of cellulases and changes in cellulase activities during hydrolysis of steam-pretreated softwood substrates and establishment of evaluation index of recycled cellulase.

Post-doctoral Fellow, 1996 to 1998, *College of Life Science, Huazhong Agricultural University, Wuhan, China*. Evaluated the fermentation kinetics and genetic stability of engineered *Streptomyces* strain WH-1 and *Streptomyces hygroscopicus* 10-22 for high-level antibiotic

production. Developed overproduction of clavulanic acid with *Streptomyces clavuligerus* through genetic engineering approaches.

Chief Scientific Advisor, 1995-1998, *HuanTai Food & Biotechnology Inc., Shenzhen, China*. Designed and involved in operating the first bagasse dietary fiber plant in China with 100 ton/year production capacity.

Research Associate, 1986 -1990, *Shaanxi Institute of Microbiology, Chinese Academy of Science*. Participated in National 75 Key Project “Cellulase DNA Cloning”, responsible for cloning and expression of cellulase DNA fragments from *Sporayotophaga* into *E. coli* JM83. Participated in the first demonstration project “application of cellulase A10 for petroleum fracturing fluids”. Developed *Aspergillus flavus* K2 with high neutral protease and saccharogenic amylase activity and improved soy sauce productivity.

PROFESSIONAL ACTIVITIES

A. Program Committee & Others

1. Session chair for 37th Symposium Biotechnology for Fuels and Chemicals, 2015.
2. Session chair for AIChE annual meeting 2010, 2011, 2015, 2016.
3. Session chair for the seventh annual World Congress Summit on Industrial Biotechnology and Bioprocessing 2011.
4. Session chair for 32nd Symposia Biotechnology for Fuels and Chemicals, 2010.
5. Apr. 2007-May 2007: Student poster academic Committee, 29th Symposia Biotechnology for Fuels and Chemicals.
6. Academic/research committee of the CE-CERT at University California, Riverside.
7. Co-Chair of Issues of Enzymatic Hydrolysis Lignocellulosic biomass in session The World Congress on Industrial Biotechnology and Bioprocessing 2006.
8. Chair of Breakthrough in Enzymatic Bioprocessing in World Congress on Industrial Biotechnology and Bioprocessing 2006.
9. Chair of Advanced Enzymatic Hydrolysis of Lignocellulosic biomass session in The World Congress on Industrial Biotechnology and Bioprocessing 2006 and 2007.
10. Session chair for The 10th World Biofuels Symposium, 2016

B. University Services

1. Academic/research committee of the CE-CERT at University of California, Riverside, 2006-2009.
2. WSU Regents Scholars scholarship, AOA, FCOC review committee members 2011-2013.
3. PNNL Joint Appointment Committee at Washington State University, Tri-Cities, 2014-present.
4. Entrepreneurial Faculty Ambassador at Washington State University, Tri-Cities, 2017-present.

C. Editorial Advisory Board

1. September, 2007-Present: Advisory Editorial Board of *Biofuels, Bioproducts & Biorefinery*.
2. April, 2008- 2013: Advisory Editorial Board of *Recent Patents on Food, Nutrition & Agriculture*.
3. April, 2009- Present: Advisory Editorial Board of *Biofuels*.
4. May, 2013- Present: Editorial Board of *AIMS Energy*.
5. October, 2013- present: Editorial Board of *Frontiers in Energy Research*.
6. 2015: Guest Editor, *AIMS Energy*, Special issue: *Advance In Production Biofuels* (<http://www.aimspress.com/newsinfo/128.html>).
7. January, 2016 - Present: Editorial Advisory Board of *Bioethanol Journal*.

D. Scientific Advisory Board

- September, 2009-2016: PureVision Technology, Inc. (USA)

E. Paper Review for Professional Journals and Books

- Bioresources Technology
- ChemCatChem
- ChemSusChem
- PNAS
- ACS Catalysis
- Biotechnology Advances
- Green Chemistry
- Biotechnology and Bioengineering
- Current Protein & Peptide Science
- Journal of Chemical Technology and Biotechnology
- Journal of Industrial Microbiology & Biotechnology
- Biofuels Bioproducts & Biorefinery
- Applied Biochemistry and Biotechnology
- Chemistry in Progress
- Chemical and Biochemical Engineering Quarterly
- BioEnergy Research
- Cellulose
- AMB Express
- Physical Chemistry Chemical Physics
- The Open Biotechnology Journal
- Biotechnology for Biofuels
- Biofuels
- TAPPI Journal
- Energy & Environmental Science
- BioMed Research International
- Energy & Fuels
- Enzyme and Microbial Technology
- Journal of Insect Science (Invited Panel Referee for “Insect Science – Special Issue: Insect and Biofuels” 17(3), 2010)
- Encyclopedia of AFBE

- PLOS ONE
- Bioprocess and Biosystems Engineering
- Biomass and Bioenergy
- Industrial & Engineering Chemistry Research
- Biochemical Engineering Journal
- Recent Patents on Food, Nutrition & Agriculture
- The Role of Green Chemistry in Biomass Processing and Conversion (book)
- Industrial Crops and Products
- RSC Advances; Biomass Conversion and Biorefinery
- Bioprocess and Biosystems Engineering
- Annals of Microbiology
- Applied Catalysis A: General
- Physical Chemistry Chemical Physics
- ACS Sustainable Chemistry & Engineering

F. Reviewer/Panelist of Proposals for Organizations and Agencies

US:

- AAES Grant for Ag and Ag-Related Research 2009
- California Energy Commission PEER program 2007-2008
- UC Discovery 2006-2009
- DOE integrated biorefinery program, 2009
- Kentucky Science and Engineering Foundation 2009
- Cooperative Grants Program US Civilian Research & Development Foundation 2010
- The Idaho State Board of Education 2009
- NSF -Catalysis and Biocatalysis, sustainability, IGERT, 2010
- NSF-Catalysis and Biocatalysis, 2010-2011
- WSU Regents Scholars scholarship 2011-2012
- DOE SBIR phase I 2011
- DOE SBIR phase I & II 2012
- The Energy Biosciences Institute, 2012
- The Western Sun Grant Regional Center, 2013
- USDA SBIR phase I, 2013, 2016, 2017
- Global Climate and Energy Project (GCEP), 2014
- NSF-Catalysis and Biocatalysis, 2014
- DOE-BETO TABB 2015
- Kentucky Science & Engineering Foundation 2015
- U.S. EPA 2015

International:

- National Research Foundation, South Africa 2008-2009
- National Bagasse-to-Ethanol Pilot Plant, Brazil 2009
- Austrian Science Fund (FWF) 2010
- The Netherland Organization for Scientific Research (NOW), 2014
- The National Center of Science and Technology Evaluation of Kazakhstan, 2014

- Ontario Research Fund – Research Excellence ROUND 5, 2010
- Clean Tech Competition (<http://www.cleantechcompetition.org/>), Center for Science Teaching and Learning, 2015-2016
- The United States – Israel Binational Agricultural Research and Development Fund 2015

G. PROFESSIONAL AFFILIATIONS

- American Institute of Chemical Engineers (AIChE)
- American Chemical Society (ACS)
- Society for Industrial Microbiology (SIM)
- Chinese Society of Biotechnology (CSB)
- Chinese Society of Industrial Microbiology (CSIM)

H. CURRENT COLLABORATORS

Universities and National Labs (US and Canada):

WSU: Shulin Chen, Manuel Garcia-Perez, Franssen Steve, Bill Pan, Yong Wang

WISC: George Huber and James Dumestic

Texas A&M: Joshua Yuan, Jodie L Lutkenhaus, Mark Holtzapple

UCR: Charles Wyman

NREL: Mel Tucker, Mike Himmel, Shi-You Ding, Xiaowen Chen, Ling Tao

GIT/UTK: Art J. Ragauskas and Yuanqiao Pu

UO: Joe Zhou

PNNL: John Lee, Zhiyu Dai, Hongfei Wang, John Cort, Zhemin Wang, Suh-Jane Lee, Mark Bowden, Mark H. Engelhard, Huamin Wang, Satish K Nune, Susan Jones

UBC: Lindsay Eltis, Jack Saddle

UNT: Rick Dickson and Fang Chen

MSU: Bruce Dale

Purdue: Michael R. Ladisch

Auburn: YY Lee

ANL: Michael Wang

UMN: Huajiang Huang

SwIR: Mark Feng

Industrial Collaborations:

Boeing Company

Abengoa Bioenergy

PureVision Technolgy

Forest concepts

Weyerhaeuser

Bioalgene

ZeaChem

Mendel Biotechnology

Mascoma Corporation

Mercurius Biorefining

International Collaborations:

COFCO China

Jiansu University, China

China Agricultural University

CTBE Brazil

South China University of Technology

General Public Articles:

My work has been highlighted by many news agencies' announcements. This outreach provides a touchstone from which students, the general public, and business/policy makers can be engaged in the science and engineering of biofuels research.