

BBRL NEWS

Our paper "Pretreatment of lignocellulosic biomass for enhanced biogas production" published on *Progress in Energy and Combustion Science* 42 (2014):35-53 by Zheng, Y., Zhao, J., Xu, F., Li, Y. **ranks No. 1 in the Most Downloaded Articles in the last 90 days.**

<http://www.journals.elsevier.com/progress-in-energy-and-combustion-science>

JOURNAL CLUB UPDATE

The Journal Club had two meetings in September:

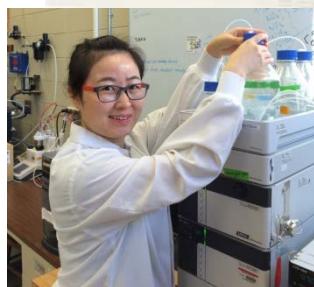
- **Fuqing Xu**- "Lignin valorization through integrated biological funneling and chemical catalysis", *PNAS* vol.111(2014), no.33,12013-12018
- **Stephen Park**- "Do furanic and phenolic compounds of lignocellulosic and algae biomass hydrolyzate inhibit anaerobic mixed cultures", *Biotechnology Advance*,32 (2014) 934-951

GROUP SEMINAR

One group seminar was held in September:

- **John Sheets** gave a presentation on his project entitled: "Effects of total solids content, temperature, and air exposure on the solid-state anaerobic digestion of switchgrass".

BBRL MEMBER SPOTLIGHT



Shan Liu – Shan joined the BBRL in August, 2014 as a visiting scholar. She is a 4th year PhD student in Chinese Agricultural University, majoring in Agricultural Engineering. She is currently working with Dr. Xumeng Ge on bioenergy and biofuels production from lignocellulosic

biomass via anaerobic digestion and Fisher-Tropsch Reaction. In the near future, Shan is interested in working on research fields such as lignocellulosic biomass pretreatment and conversion into biofuels. In her free time, she enjoys listening to music and jogging.

Upcoming events, deadlines, or grants

ACS Abstract submission deadlines for most of division are in October.

BBRL RESEARCH

2014 Peer Reviewed Journal Publications

1. Ge, X., Yang, L., Sheets, J., Yu, Z.T., Li, Y. 2014. Biological conversion of methane to liquid fuels: status and opportunities. *Biotechnology Advances*. IF: 8.905
2. Xu, F., Wang, Z. Li, Y. 2014. Predicting the methane yield of lignocellulosic biomass in mesophilic solid-state anaerobic digestion based on feedstock characteristics and process parameters. *Bioresource Technology*. IF: 5.039.
3. Hu, S., Li, Y. 2014. Production of polyols and waterborne polyurethane dispersions from biodiesel-derived crude glycerol. *Journal of Applied Polymer Science*. IF: 1.40
4. Li, Y. F., Nelson, M. C., Chen, P. H., Graf, J., Li, Y., Yu, Z. 2014. Comparison of the microbial communities in solid-state anaerobic digesters (SS-ADs) operated at mesophilic and thermophilic temperatures. *Applied Microbiology and Biotechnology*. In press. (IF:3.69)
5. Yang, L., Li, Y. 2014. Anaerobic digestion of giant reed for methane production. *Bioresource Technology* 171: 233-239. IF: 5.039
6. Yang, L., Ge, Xumeng, Wan, C, Yu, F., Li, Y.2014. Progress and perspectives in converting biogas to transportation fuels. *Renewable & Sustainable Energy Reviews* 40: 1133-1152. IF: 5.51
7. Lin, Y., Ge, X., Li, Y. 2014. Solid-state anaerobic co-digestion of spent mushroom substrate with tree trimmings and wheat straw for biogas production. *Bioresource Technology* 169:468-474. IF: 5.039
8. Lin, L, Yang L., Xu, F., Michel F. C., Li, Y. 2014. Side-by-side comparison of solid-state anaerobic digestion and composting of yard trimmings with effluent from liquid anaerobic digestion. *Bioresource Technology* 169:439-446. IF: 5.039
9. Ge, X., Matsumoto, T, Li, Y. 2014. Biogas energy production from tropical biomass wastes by anaerobic digestion. *Bioresource Technology* 169:38-44. IF: 5.039
10. Xu, F., Wang, Z. W., Tang, L., Li, Y. 2014. A mass diffusion-based interpretation of the effect of total solids content on solid-state anaerobic digestion of cellulosic biomass. *Bioresource Technology*.167: 178–185. IF: 5.039
11. Hu, S., Li, Y. 2014. Polyols and polyurethane foams from acid-catalyzed biomass liquefaction by crude glycerol: effects of crude glycerol impurities. *Journal of Applied Polymer Science* 131(18): 9054-9062. IF: 1.40
12. Luo, X., Li, Y. 2014. Synthesis and characterization of polyols and polyurethane foams from PET waste and crude glycerol. *Journal of Polymers and the Environment* 22(3): 318-328. IF: 1.50

13. Hu, S., Li, Y. 2014. Polyols and polyurethane foams from base-catalyzed liquefaction of lignocellulosic biomass by crude glycerol: effects of crude glycerol impurities. *Industrial Crops and Products*. 57: 188-194. IF: 3.208
 14. Hu, S, Li, Y. 2014. Polyols and polyurethane foams from two-step sequential liquefaction of lignocellulosic biomass by crude glycerol. *Bioresource Technology*. 161:410-415. IF: 5.039
 15. Zheng, Y., Zhao, J., Xu, F., Li, Y. 2014. Pretreatment of lignocellulosic biomass for enhanced biogas production. *Progress in Energy and Combustion Science*: 42:35-53. **IF: 16.909**
 16. Gómez, E.F., Luo, X., Li, C., Michel F.C., Li, Y. 2014. Biodegradability of crude glycerol-based polyurethane foams during composting, anaerobic digestion and soil incubation. *Polymer Degradation and Stability* 102:195-203. IF: 2.63
 17. Zhao, J., Ge, X. Vasco Correa J., Li, Y. 2014. Fungal pretreatment of unsterilized yard trimmings for enhanced methane production by solid-state anaerobic digestion. *Bioresource Technology* 158: 248-252. IF: 5.039.
 18. Shi J, Xu F., Wang Z., Stiverson, J. A., Yu Z. Li, Y. 2014. Effects of microbial and non-microbial factors of liquid anaerobic digestion effluent as inoculum for solid-state anaerobic digestion of corn stover. *Bioresource Technology*. 157: 188-196. IF: 5.039.
 19. Zhao, J., Zheng, Y., Li, Y. 2014. Fungal pretreatment of yard trimmings for enhancement of methane yield from solid-state anaerobic digestion. *Bioresource Technology*. 156: 176-181. IF: 5.039
 20. Hu, S., Luo, X., Li, Y. 2014. Polyols and polyurethanes from the liquefaction of lignocellulosic biomass. *ChemSusChem* 7: 66-72. IF: 7.12
 21. Zhu, J., Zheng, Y., Xu, F., Li, Y. 2014. Solid-state anaerobic co-digestion of hay and soybean processing waste for biogas production. *Bioresource Technology* 154:240-247. IF: 5.039
 22. Wang, Z. W., Li, Y. 2014. A theoretical derivation of the Contois equation for kinetic modeling of the microbial degradation of insoluble substrates. *Biochemical Engineering Journal*. 82: 134-138. IF: 2.368
 23. Sheets, J., Ge, X., Park, Y. S., Li, Y. 2014. Effect of outdoor conditions on *Nannochloropsis salina* cultivation in artificial seawater using nutrients from anaerobic digestion effluent. *Bioresource Technology*. 152:154-161. IF: 5.039
 24. Park, S.*, Li, Y. 2014 Integration of biological kinetics and computational fluid dynamics to model the growth of *Nannochloropsis salina* in an open channel raceway. *Biotechnology & Bioengineering* (IF: 4.164).
 25. Li, C., Lu, X., Li, T., Tong, X., Li, Y. 2014. Polyurethane foams based on crude glycerol-derived biopolyols: one-pot preparation of biopolyols with branched fatty acid ester chains and its effects on foam formation and properties. *Polymer*.
- Under review
26. Ge, X., Matsumoto, T., Keith, L. 2014. Fungal pretreatment of albizia chips for enhanced biogas production by solid-state anaerobic digestion. *Energy and Fuel*. IF: 5.039.
 27. Yang, L., Xu, F., Ge, X, Li, Y. 2014. Solid-state anaerobic digestion of lignocellulosic biomass: challenges and strategies to resolve them. *Renewable & Sustainable Energy Reviews*. IF: 5.51
 28. Luo, X., Tong, X., Li, Y. 2014. Crude glycerol-based multi-branched polyols and waterborne polyurethane coatings. *Progress in Organic Coatings*. IF: 1.848.
 29. Zhu, J., Yang, L., Li, Y. 2014. Comparison of premixing methods for solid-state anaerobic digestion of corn stover. *Bioresource Technology*. IF: 5.039. Equal contribution first author.
 30. Tong, X., Luo, X., Li, Y. 2014. Development of Blend Films from Soy Meal Protein and Crude Glycerol-Based Waterborne Polyurethane. *Industrial Crops and Products*. (IF:3.208)
 31. Lin, Y., Ge, X., Liu, Z., Li, Y. 2014. Shiitake cultivation with byproducts from biofuel and bioenergy processes. *Bioresource Technology*. IF: 5.039.

2014 Extension Fact Sheet

1. Li, Y., Wicks, M. 2013. Fungal pretreatment of corn stover fractions for ethanol production, OSU Extension Fact Sheet, AEX 651.1-13.
2. Li, Y., Yang, L. 2014 Converting spent wheat straw from horse stalls into methane. OSU Extension Fact Sheet, AEX 653-14.
3. Yang, L., Li, Y. 2014. Biogas cleaning and upgrading technologies. OSU Extension Fact Sheet, AEX 653.1-14.
4. Li, Y., Yang, L. 2014 Converting biogas to transportation fuels. OSU Extension Fact Sheet, AEX 653.2-14.

2014 Conference Presentation

1. Li, Y. 2014. Fungal pretreatment of lignocellulosic biomass for biofuel and bioenergy production. 2014 Institute of Biological Engineering (IBE) Annual Conference. Lexington, KY. March 6-8, 2014.

Accepted with minor/major revision

2. Luo, X., Li, Y. 2014. Synthesis and characterization of crude glycerol derived multi-armed epoxy compounds. 2014 American Chemical Society National Meeting and Exposition. Dallas, TX. March 16-20, 2014.
3. Lin, L., Yang, L., Xu, F., Li, Y. 2014. A side-by-side comparative study of solid-state anaerobic digestion and composting using yard waste and liquid anaerobic digestion effluent. 2014 OARDC Annual Conference. Wooster, OH. April 24, 2014.
4. Tong, X., Luo, X., Li, Y. 2014. Development of Waterborne Polyurethane Film from Soymeal and Crude Glycerol. 2014 OARDC Annual Conference. Wooster, OH. April 24, 2014.
5. Luo, X., Tong, X., Li, Y. 2014. Waterborne polyurethane coatings from crude glycerol-based multi-branched polyols. 2014 OARDC Annual Conference. Wooster, OH. April 24, 2014.
6. Yang, L., Zhu, J., Li, Y. 2014. Effects of premixing and recovery methods on solid-state anaerobic digestion of corn stover. 2014 OARDC Annual Conference. Wooster, OH. April 24, 2014.
7. Lin, Y., Ge, X., Li, Y. 2014. Co-digestion of spent mushroom substrate, yard waste and wheat straw for enhanced solid-state anaerobic digestion. 2014 OARDC Annual Conference. Wooster, OH. April 24, 2014.
8. Park, S., Li, Y. 2014. Integrated computational fluid dynamics model for open pond cultivation of *Nannochloropsis salina* using phase change material to increase carbon dioxide retention and thermal stability. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014.
9. Lin, Y., Ge, X., Li, Y. 2014. Co-digestion of spent mushroom compost, yard waste and wheat straw for enhanced solid-state anaerobic digestion. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014. Paper No. 141897552.
10. Lin, L., Yang, L., Li, Y. 2014. Side-by-side comparison of solid-state anaerobic digestion and composting of yard trimmings with effluent from liquid anaerobic digestion. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014. Paper No. 141897526.
11. Racharaks R., Ge, X., Li, Y. 2014. Integration of shale gas wastewater treatment with microalgae-based biofuel production. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014.
12. Xu, F., Wang, Z., Li, Y. 2014. Mathematical modeling of solid-state anaerobic digestion for methane production. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014. Paper No. 141909527
13. Vasco Correa J., Li, Y. 2014. Effect of harvest date on methane production by solid-state anaerobic digestion of *Miscanthus sinensis*. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014.
14. Zhu, J., Yang, L., Li, Y. 2014. Effects of premixing methods of feedstock and inoculum on solid-state anaerobic digestion of corn stover. 2014 Annual ASABE meeting, Montreal, QC Canada. Jul 13-16, 2014.

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