

BBRL NEWS

Stephen Park passed his dissertation defense. Congratulations!

JOURNAL CLUB UPDATE

The Journal Club had one meeting in June.

- **Xumeng Ge** -“Rethinking biological activation of methane and conversion to liquid fuels”, *Nature chemical biology* 10(5), 331-339 (2014).

BBRL MEMBER SPOTLIGHT

Lu Zhang- Lu Zhang is a PhD student with the Department of Food, Agricultural and Biological Engineering at OSU/OARDC in Wooster. He joined Dr. Yebo Li's research group in June 2014. Lu has a BS in Food Quality and Safety and a MS in Agricultural Bio-environment and Energy Engineering from Jilin University, China. Lu Zhang loves to watch movies with friends during holidays.



GROUP SEMINAR

Three group seminars were held in June. Dr. Xumeng Ge moderated the seminar.

- **Stephen Park** presented his dissertation defense draft on “Numerical and procedural methods to improve the performance of an open channel raceway for *Nannochloropsis salina* cultivation”.
- **Liangcheng Yang** gave a detailed presentation on how to search and obtain faculty positions in academia.
- **Fuqing Xu** presented her dissertation defense draft on “Experimental study and modeling of solid-state anaerobic digestion for enhanced methane production from lignocellulosic biomass”.

Upcoming events, deadlines, or grants

7/13-7/16-ASABE Annual Meeting, Montreal, Canada
 7/18-Masters and Doctoral Exam Forms due
 7/25-Approved Theses and Dissertations due

BBRL RESEARCH

Research Grants

Li, Y., Luo, X. Performance improvement of PU foams from crude glycerol-based polyols for industrial spray and packing foam applications. Ohio Soybean Council. 15-4-05. \$64,540.00. 09/2014-08/2015.

2014 Peer Reviewed Journal Publications

1. Ge, X., Matsumoto, T, Li, Y. 2014. Biogas energy production from tropical biomass wastes by anaerobic digestion. *Bioresource Technology*. *In press*. IF: 4.750
2. 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*. *In press*. IF: 4.750
3. 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
4. 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*. *In press*. IF: 1.495
5. 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: 2.468
6. 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: 4.750
7. 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: 15.089**
8. 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: 2.770
9. 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: 4.750.
10. 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: 4.750.

11. 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: 4.750
12. Hu, S., Luo, X., Li, Y. 2014. Polyols and polyurethanes from the liquefaction of lignocellulosic biomass. *ChemSusChem* 7: 66-72. IF: 7.475.
13. 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: 4.750
14. 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: 2.579
15. 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: 4.750

Accepted with minor/major revision

16. 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*. IF: 4.750
17. Ge, X., Yang, L., Sheets, J., Yu, Z.T., Li, Y. 2014. Biological conversion of methane to liquid fuels: status and opportunities. *Biotechnology Advances*. In press. IF: 9.599
18. 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*.

Under review

19. Yang, L., Ge, Xumeng, Wan, C, Yu, F., Li, Y. 2014. Progress and perspectives in converting biogas to transportation fuels. *Renewable & Sustainable Energy Reviews*.
20. Hu, S., Li, Y. 2014. Production of polyols and waterborne polyurethane dispersions from biodiesel-derived crude glycerol. *Journal of Applied Polymer Science*.
21. 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*.

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.
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.

Editors

Juliana Vasco Correa (vascocorrea.1@osu.edu)

John Sheets (sheets.162@osu.edu)