

BBRL NEWS



Fuqing Xu received the **FIRST** place (Ph.D. Category) Boyd-Scott Graduate Research Award from ASABE, during the annual conference in Montreal, Canada. This is the most prestigious and competitive graduate research award in the ABE departments. [More information.](#)

Fuqing Xu and **Long Lin** have also received the first and fourth place paper awards from AOC, a subdivision of ASABE.

Fuqing Xu (Ph.D.), **Xinjie Tong (M.S.)** and **Siam Racharaks (M.S.)** passed their dissertation defenses in July. Congratulations!

Dr. **Liangcheng Yang** left our lab to start his new position as Assistant Professor in Illinois State University. We wish him the best in his new career.

BBRL members (Dr. **Liangcheng Yang**, Dr. **Yunqin Lin**, **Stephen Park**, **Fuqing Xu**, **Long Lin**, **Juliana Vasco Correa** and **Siam Racharaks**) gave seven (7) oral presentations on the ASABE 2014 Annual Meeting.

GROUP SEMINAR

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

- **Xinjie Tong** "Production and characterization of crude-glycerol-based waterborne polyurethanes and their derived blend films with protein"
- **Siam Racharaks** "Cultivation of *Nannochloropsis salina* and *Dunaliella tertiolecta* using shale gas flowback water and anaerobic digester effluent as cultivation medium.
- Rehearsals for ASABE presentations
- Information exchanges by ASABE Meeting attendees: **Juliana Vasco Correa**, **Fuqing Xu**, **Long Lin**. Two members from Dr. Cornish's lab (**Lauren Slutzky** and **Cindy S. Barrera Martinez**) also joined the lab seminar on July 23.

Upcoming events, deadlines, or grants

- 8/10- Summer commencement
- 8/27- Autumn semester begins
- 8/29- **Autumn registration deadline**

BBRL RESEARCH

2014 Peer Reviewed Journal Publications

1. 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: 4.750
2. 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: 4.750
3. Ge, X., Matsumoto, T, Li, Y. 2014. Biogas energy production from tropical biomass wastes by anaerobic digestion. *Bioresource Technology* 169:38-44. IF: 4.750
4. 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: 4.750
5. 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
6. 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
7. 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
8. 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
9. 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**
10. 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
11. 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.
 12. 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.
 13. 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
 14. Hu, S., Luo, X., Li, Y. 2014. Polyols and polyurethanes from the liquefaction of lignocellulosic biomass. *ChemSusChem* 7: 66–72. IF: 7.475.
 15. 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
 16. 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
 17. 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
18. 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
 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*. IF: 5.627
 20. 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
- Under review
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*. IF: 5.627
 22. Yang, L., Li, Y. 2014. Anaerobic digestion of giant reed for methane production. *Bioresource Technology*. IF: 4.750
 23. Luo, X., Tong, X., Li, Y. 2014. Crude glycerol-based multi-branched polyols and waterborne polyurethane coatings. *Progress in Organic Coatings*. IF: 1.848.
 24. 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*.
 25. 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: 4.750.
 26. Ge, X., Matsumoto, T., Keith, L. 2014. Fungal pretreatment of albizia chips for enhanced biogas production by solid-state anaerobic digestion. *Bioresource Technology*. IF: 4.750.
- 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.
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.

