ENERGY RESEARCH NEWS

Methane as a transportation fuel

Even though natural gas possesses a relatively low energy density in comparison with gasoline and diesel fuels, it represents a fuel with the potential to disproportionately impact our transportation sector. On paper, gasoline and natural gas have no comparison with an equivalent volume of gasoline able to propel a car ~1000x as far as natural gas at ambient pressures and temperatures; however, natural gas burns cleaner and on a per mile basis is ~50% cheaper. In light of this, researchers are working on new technologies (e.g., adsorbate materials such as activated carbon and metal-organic frameworks) to enable storage of useful volumes of natural gas at close to ambient temperatures and pressures. Additionally, fueling infrastructure options are being studied further, including options such as home compressors which would connect to existing home natural gas lines. DOI: 10.1126/science.346.6209.538

BBRL NEWS

Dr. Stephen Park left out lab to start his new position as postdoctoral scholar in Southern Illinois University. We wish him the best in his new career!

2014 Annual Renewable Energy Workshop was held on November 12, 2014 at Fisher Auditorium of OARDC. Presentations can be accessed here.

BBRL Alumni Dr. Liangcheng Yang and his colleagues at Illinois State University received a $1 million grant from Illinois EPA to build a pilot scale farm digester on campus.

BBRL MEMBER SPOTLIGHT

Feng Wang- Feng joined BBRL as a visiting scholar in September 2014. He received his Ph.D. in Food Science in 2007 from Hunan Agricultural University. After working as a lecturer, he became an associate professor in 2009 and his research focused on the food and food byproducts utilization. He is currently working with Dr. Fuqing Xu on anaerobic digestion of agro-wastes. In the near future, he is interested in doing research in the fields of lignocellulosic materials pretreatment. In his leisure time, he likes playing badminton and ping pong.

JOURNAL CLUB/GROUP SEMINAR UPDATE

The Journal Club had one meeting in November:


GROUP SEMINAR

One group seminar was held in November:

- Stephen Park gave a presentation on his project about lignin pyrolysis.

Upcoming events, deadlines, or grants

- FABE New Building Open House December 19th from 3:30pm – 5:00pm
- BBRL Christmas Party December 23, 2014
- OARDC SEEDS proposal: February 4, 2015
- Spring course registration due: January 16, 2015
- Spring Fees Payment due: January 5, 2015

BBRL RESEARCH

2014 Peer Reviewed Journal Publications

1. Park, S., Li, Y. 2015 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). In press.


Accepted with minor/major revision


2014 Dissertation/Thesis


- Xinjie Tong, 2014. Production and characterization of crude-glycerol-based waterborne polyurethanes and their derived blend films with protein. M.S. Thesis. The Ohio State University, Columbus, Ohio.

- Siam Racharaks, 2014. Cultivation of Nannochloropsis salina and Dunaliella tertiolecta using shale gas flowback water and anaerobic digester effluent as cultivation medium. M.S. Thesis. The Ohio State University, Columbus, Ohio.

2014 Extension Fact Sheet


2. Li, Y., Yang, L. 2014 Converting spent wheat straw from horse stalls into methane. OSU Extension Fact Sheet, AEX 653-14.


4. Li, Y., Yang, L. 2014 Converting biogas to transportation fuels. OSU Extension Fact Sheet, AEX 653.2-14.

2014 Conference Presentation


