

# Curriculum Vitae

Dr. Chuang Xue

School of Life Science and Technology

Dalian University of Technology

Add: 2 Linggong Rd., Dalian, 116023, China

Tel: 0411-84706308

E-mail: xue.l@dlut.edu.cn



## EDUCATION

- 2005–2010: Ph.D, Biochemical Engineering, Dalian University of Technology
- 2001–2005: B.A.Sc, Bioengineering, Dalian University of Technology

## PROFESSIONAL EXPERIENCE

- 2013.12–Now: Associate professor, School of Life Science and Technology, Dalian University of Technology
- 2012.09–2013.12: Assistant professor, School of Life Science and Technology, Dalian University of Technology
- 2010.09–2011.11: Post-doctoral researcher, School of Chemical and Biomolecular engineering, Ohio State University
- 2009.08–2010.08: Visiting scholar, School of Chemical and Biomolecular engineering, Ohio State University

## MEMBERSHIP

Editorial Board Member for Scientific Reports, Nature Publishing Group

## Rewards and Patents

Young Researcher Award (Highly commended finalist 2015), ISGC2015, by James Clark, on behalf of G2C2

Six Chinese patents issued in 2012 to 2015.

## SELECTED PUBLICATIONS

- 1) **Xue C\***, Liu FF, Xu MM, Zhao JB, Chen LJ, Ren JG, Bai FW Yang ST. A novel *in situ* gas stripping-pervaporation process integrated with acetone-butanol-ethanol fermentation for hyper n-butanol production. *Biotechnology Bioengineering*, 2015, DOI: 10.1002/bit.25666.

- 2) **Xue C\***, Yang DC, Du GQ, Chen LJ, Ren JG, Bai FW. Evaluation of hydrophobic micro-zeolite mixed matrix membrane and integrated with acetone-butanol-ethanol fermentation for enhanced butanol production. *Biotechnology for Biofuels*, 2015,8:105. (SCI, IF:6.221, **TOP**)
- 3) **Xue C\***, Du GQ, Chen LJ, Ren JG, Sun JX, Bai FW, Yang ST. A carbon nanotube filled polydimethylsiloxane hybrid membrane for enhanced butanol recovery. *Scientific Reports*, 2014, 4, 5925. (SCI, IF:5.078, **Nature Publishing Group**)
- 4) **Xue C**, Zhao XQ, Liu CG, Chen LJ\*, Bai FW\*. Prospective and development of butanol as an advanced biofuel. *Biotechnology Advances*, 2013, 31:1575-1584. (SCI, IF:8.905, **TOP**)
- 5) **Xue C**, Zhao JB, Lu CC, Yang ST\*, Bai FW, Tang IC. High-titer n-butanol production by *Clostridium acetobutylicum* JB200 in fed-batch fermentation with intermittent gas stripping. *Biotechnology and Bioengineering*, 2012, 109(11):2746-2756. (SCI, IF:4.164, **TOP**)
- 6) **Xue C**, Zhao XQ\*, Bai FW\*. Effect of the size of yeast flocs and zinc supplementation on continuous ethanol fermentation performance and metabolic flux distribution under very high substrate conditions. *Biotechnology and Bioengineering*, 2010, 105: 935-944. (SCI, IF:4.164, **TOP**)
- 7) **Xue C**, Zhao JB, Liu FF, Lu CC, Yang ST\*, Bai FW. Two-stage in situ gas stripping for enhanced butanol fermentation and energy-saving product recovery. *Bioresource Technology*, 2013, 135:396-402. (SCI, IF:5.04)
- 8) **Xue C\***, Zhao JB, Chen LJ, Bai FW, Yang ST, Sun JX\*. Integrated butanol recovery for an advanced biofuel: current state and prospects. *Applied Microbiology and Biotechnology*, 2014, 98:3463–3474. (SCI, IF:3.811)
- 9) **Xue C\***, Du GQ, Sun JX, Chen LJ, Gao SS, Yu ML, Yang ST\*, Bai FW. Characterization of gas stripping and its integration with acetone–butanol–ethanol fermentation for high-efficient butanol production and recovery. *Biochemical Engineering Journal*, 2014, 83:55-61. (SCI, IF:2.368)
- 10) **Xue C\***, Du GQ, Chen LJ, Ren JG, Bai FW. Evaluation of asymmetric polydimethylsiloxane-polyvinylidene fluoride composite membrane and incorporated with acetone-butanol-ethanol fermentation for butanol recovery. *Journal of Biotechnology*, 2014, 188:158-165. (SCI, IF:2.884)

## Research interests

My research is mainly focused on bioprocess engineering, particularly for large scale production of biofuels products such as fuel ethanol and biobutanol to address challenges of sustainable development, involving development of stress-tolerant strains, microbial growth and fermentation kinetics, process control and optimization, and butanol fermentation with in situ product recovery technologies.

The ethanol fermentation with self-flocculating yeast has been well studied in Professor Fengwu Bai's laboratory, and successfully developed in the large-scale production of fuel ethanol in China. When worked for my Ph.D project, the process of very high gravity ethanol fermentation had been optimized and ethanol production increased by 10%, which led to 20% energy cost saving in industry production. The results had been published in high rating journals such as *Biotechnology and Biotechnology*, *Journal of Biotechnology*, *World Journal of Microbiology and Biotechnology*, and reported at prime international conferences.

When worked at Ohio State University, USA and Dalian University of Technology, advanced technologies for in situ butanol recovery were exploited, and a novel two-step hybrid gas stripping-pervaporation process was developed to alleviate butanol toxicity on the host strain for more efficient production of butanol. Compared with conventional fermentation process, butanol titer in the recovered solution could increase significantly and energy consumption for downstream product recovery was dramatically reduced. This progress makes butanol production from renewable biomass more economically competitive, which has been published in the flagship biotechnology journals such as *Biotechnology Advances*, *Biotechnology and Biotechnology*, and *Bioresource Technology*.

In the near future, my work will focus on three areas: 1) product recovery techniques and membrane fabrication for biofuels recovery; 2) Metabolic engineering for strain development; 3) High-value utilization of economic renewable biomass for biofuel production. At last, I wish lots of valued achievement will be generated in the platform of UM.