



Department: School of Bioengineering

Professional field: Bioengineering

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Profile

1999-2003, Central South University, Bachelor, Major: Chemical Engineering and Technology

2004-2007, Central South University, Master, Major: Bioengineering

2007-2012, Central South University, Doctor, Major: Microbiology

2010-2012, Johns Hopkins University, Joint Doctor

2012-now, Minxi Wan has worked in School of Bioengineering, East China University of Science and Technology as Postdoctoral (2012-2014), Assistant professor (2014-2019), Master supervisor (Since 2016), Associate professor (Since 2019).

Research Field

[1] Microalgal synthetic biology: Using microalgae as genetic engineering organisms to produce high-value bioactive substances

[2] Microalgal product engineering: Development of high-efficiency production technology for microalgae products

[3] Photobioreactor: The development and industrialization of high-efficiency reactors for photosynthetic microorganisms

Research results and selected published papers

- [1] Lei Fang, Jingkui Zhang, Zhongnan Fei, Minxi Wan*(Corresponding author), Astaxanthin accumulation difference between non-motile cells and akinetes of *Haematococcus pluvialis* was affected by pyruvate metabolism, *Bioresources and Bioprocessing*, 2020, 7, 5
- [2] Zhen Zhang, Yingying Tan, Weiliang Wang, Wenmin Bai, Jianhua Fan, Jianke Huang, Minxi Wan*(Corresponding author), Yuanguang Li*, Efficient heterotrophic cultivation of *Chlamydomonas reinhardtii*. *Journal of applied phycology*, 2019,31(3): 1545–1554
- [3] Haohua Wang, Zhen Zhang, Minxi Wan*(Corresponding author), Ruixuan Wang, Jianke Huang, Kaikai Zhang, Jiakai Guo, Wenmin Bai, Yuanguang Li*, Comparative study on light attenuation models of *Galdieria sulphuraria* for efficient production of phycocyanin, *Journal of applied phycology*, 2019, 32, 165–174
- [4] Minxi Wan, Zhen Zhang*, Ruixuan Wang, Wenmin Bai, Jianke Huang, Weiliang Wang, Guomin Shen, Anquan Yu, Yuanguang Li*, High-yield cultivation of *Botryococcus braunii* for biomass and hydrocarbons, *Biomass and Bioenergy*, 2019, 131, 105399
- [5] Lei Fang, Jingkui Zhang, Zhongnan Fei, Minxi Wan*(Corresponding author), Chlorophyll as key indicator to evaluate astaxanthin accumulation ability of *Haematococcus pluvialis*, *Bioresources and Bioprocessing*, 2019, 6, 52
- [6] Weiliang Wang, Tingting Wei, Jianhua Fan, Jun Yi, Yuanguang Li*, Minxi Wan*(Corresponding author), Jun Wang, Wenmin Bai. Repeated mutagenic effects of 60Co- γ irradiation coupled with high-throughput screening improves lipid accumulation in mutant strains of the microalgae *Chlorella pyrenoidosa* as a feedstock for bioenergy. *Algal Research*, 2018, 33:71-77
- [7] Bin Sheng, Fei Fan, Jianke Huang, Wenmin Bai, Jun Wang, Sulan Li, WeiLi, Minxi Wan*(Corresponding author), Yuanguang Li*. Investigation on models for light distribution of *Haematococcus pluvialis* during astaxanthin accumulation stage with an application case. *Algal Research*, 2018, 33:182-189
- [8] Minxi Wan, Zhenyang Wang, Zhen Zhang, Jun Wang, Shulan Li, Anquan Yu, Yuanguang Li*. A novel paradigm for the high-efficient production of phycocyanin from *Galdieria sulphuraria*. , *Bioresource Technology*, 2016, 218: 272-278
- [9] Dongda Zhang*#, Minxi Wan# (Co-first author), Ehecacfl A. del Rio-Chanona, Jianke Huang, Weiliang Wang, Yuanguang Li, Vassilios S. Vassiliadis*. Dynamic Modelling of *Haematococcus pluvialis* Photoinduction for Astaxanthin Production in both Attached and Suspended Photobioreactors, *Algal Research*, 2016, 13: 69-78
- [10] Minxi Wan#, Zhen Zhang#, Jun Wang, Jianke Huang, Jianhua Fan, Anquan Yu, Weiliang Wang, Yuanguang Li*. Sequential Heterotrophy–Dilution–Photoinduction Cultivation of *Haematococcus pluvialis* for efficient production of astaxanthin, *Bioresource Technology*, 2015, 198: 557-563
- [11] Minxi Wan, Jingkui Zhang, Dongmei Hou, Jianhua Fan, Yuanguang Li *, Jianke Huang, Jun Wang, The effect of temperature on cell growth and astaxanthin accumulation of *Haematococcus pluvialis* during a light-dark cyclic cultivation. *Bioresource Technology*, 2014, 167(8):1958-1964
- [12] Minxi Wan, Xuejie Jin, Jinlan Xia *, Julian N. Rosenberg, Geng Yu, Zhenyuan Nie, George A. Oyler, Michael J. Betenbaugh *. The effect of iron on growth, lipid accumulation, and gene expression profile of the freshwater microalga *Chlorella sorokiniana*. *Applied Microbiology and Biotechnology*, 2014, 98(22):9473-9481
- [13] Minxi Wan#, Dongmei Hou#, Yuanguang Li*, Jianhua Fan, Jianke Huang, Songtao Liang, Weiliang Wang, Ronghua Pan, Jun Wang, Shulan Li. The effective photoinduction of *Haematococcus pluvialis* for accumulating astaxanthin with attached cultivation. *Bioresource Technology*, 2014, 163 (4), 26-32
- [14] Minxi Wan, Junaid Faruq, Julian N. Rosenberg, Jinlan Xia, George A. Oyler, Michael J. Betenbaugh. Achieving high throughput sequencing of cDNA library utilizing an alternative protocol for the bench top next-generation sequencing system. *Journal of Microbiological Methods*, 2013, 92 (2):122-126
- [15] Minxi Wan, Runmin Wang, Jinlan Xia*, Julian N. Rosenberg, George A. Oyler, Michael J. Betenbaugh. Physiological evaluation of a new *Chlorella sorokiniana* isolate for its biomass production and lipid accumulation in photoautotrophic and heterotrophic cultures. *Biotechnology and Bioengineering*, 2012, 109(8):1958-1964
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- [17] Minxi Wan, Julian N. Rosenberg, Junaid Faruq, Michael J. Betenbaugh, Jinlan Xia. An improved colony PCR procedure for genetic screening of *Chlorella* and related microalgae. *Biotechnology Letters*, 2011, 33:1615–1619
- [18] Minxi Wan, Yu Yang, Guanzhou Qiu*, Ailin Xu, Lin Qian, Zhiying Huang, Jinlan Xia. Acidophilic bacterial community reflecting pollution level of sulphide mine impacted by acid mine drainage. *Journal of Central South University of Technology*, 2009, 16: 0223–0229
- [19] Minxi Wan, Yu Yang, Weimin Zeng, Jinlan Xia, Xueduan Liu, Wenqin Qin, Guanzhou Qiu*. Succession of Bacterial Community Inhabited Acid Mine Drainage under High Fe(II) Concentration. *Journal of Environmental Science and Engineering*, 2010, 4(8): 46-55
- [20] Feifei Han, Weiliang Wang, Yuanguang Li*, Guomin Shen, Minxi Wan* (Corresponding author), Jun Wang. Changes of biomass, lipid content and fatty acids composition under a light-dark cyclic culture of *Chlorella pyrenoidosa* in response to different temperature. *Bioresource technology*, 2013, 132:182-189