

Wen-Ru Li

Ph. D., researcher, master Supervisor

Education

Ph. D. in Hydrobiology, Jinan University (2010.9-2013.6);

Master in Marine Biology, Institute of Oceanography, Chinese Academy of Sciences (2003.9-2006.6);

Bachelor in Aquaculture, Ocean University of China (1997.9-2001.6).

Employment

Researcher in Microbiology, Guangdong Institute of Microbiology (2016.12-present);

Associate researcher in Microbiology, Guangdong Institute of Microbiology (2012.11-2016.12);

Assistant researcher in Microbiology, Guangdong Institute of Microbiology (2008.11-2012.11).

Research directions

My research direction is the prevention and control of harmful microorganisms, including the research on the quorum sensing regulation of harmful microorganisms, the quorum quenching effects and mechanism of the harmful microorganisms, and the research and development of new antimicrobial materials and their antimicrobial effects and mechanism.

Representative Publications

1. **Li Wen-Ru**, Ma Yong-Kai, Xie Xiao-Bao, Shi Qing-Shan, Wen Xia, Sun Ting-Li, Peng Hong. Diallyl disulfide from garlic oil inhibits *Pseudomonas aeruginosa* quorum sensing systems and corresponding virulence factors. *Frontiers in Microbiology*. 2019, 9: 3222 DOI: 10.3389/fmicb.2018.03222.
2. Feng Jin, Shi Qing-Shan, Li Yu-Lian, Huang Jian-Fei, Li Rui-Min, Shu Xiu-Lin, **Li Wen-Ru**, Xie Xiao-Bao. Pyrolysis preparation of poly-gamma-glutamic acid derived amorphous carbon nitride for supporting Ag and gamma-Fe₂O₃ nanocomposites with catalytic and antibacterial activity. *Materials Science & Engineering C, Materials for biological applications*. 2019, 101: 138-147.
3. **Li Wen-Ru**, Ma Yong-Kai, Shi Qing-Shan, Xie Xiao-Bao, Sun Ting-Li, Peng Hong, Huang Xiao-Mo. Diallyl disulphide from garlic oil inhibits *Pseudomonas aeruginosa* virulence factors by inhibiting the transcription of key quorum sensing genes. *Applied Microbiology and Biotechnology*. 2018, 102:7555-7564.
4. **Li Wen-Ru**, Sun Ting-Li, Zhou Shao-Lu, Ma Yong-Kai, Shi Qing-Shan, Xie Xiao-Bao, Huang Xiao-Mo. A comparative analysis of antibacterial activity, dynamics, and effects of silver ions and silver nanoparticles against four bacterial strains. *International Biodeterioration & Biodegradation*. 2017, 123: 304-310.
5. Huang Jian-Fei, Shi Qing-Shan, Feng Jin, Chen Ming-Jie, **Li Wen-Ru**, Li Liang-Qiu.

Facile pyrolysis preparation of rosin-derived biochar for supporting silver nanoparticles with antibacterial activity. *Composites Science and Technology*. 2017, 145: 89-95.

6. **Li Wen-Ru**, Li Hai-Ling, Shi Qing-Shan, Sun Ting-Li, Xie Xiao-Bao, Song Bin, Huang Xiao-Mo. The dynamics and mechanism of the antimicrobial activity of tea tree oil against bacteria and fungi. *Applied Microbiology and Biotechnology*. 2016, 100: 8865-8875.
7. **Li Wen-Ru**, Shi Qing-Shan, Dai Huan-Qin, Liang Qing, Xie Xiao-Bao, Huang Xiao-Mo, Zhao Guang-Ze, Zhang Li-Xin. Antifungal activity, kinetics and molecular mechanism of action of garlic oil against *Candida albicans*. *Scientific Reports*. 2016, 6: 22805, DOI: 10.1038/srep22805.
8. **Li Wen-Ru**, Shi Qing-Shan, Liang Qing, Xie Xiao-Bao, Huang Xiao-Mo, Chen Yi-Ben. Antibacterial activity and kinetics of litsea cubeba oil on *Escherichia coli*. *PLOS ONE*. 2014, 9(11):e110983. DOI:10.1371/journal.pone.0110983
9. **Li Wen-Ru**, Shi Qing-Shan, Liang Qing, Huang Xiao-Mo, Chen Yi-Ben. Antifungal effect and mechanism of garlic oil on *Penicillium funiculosum*. *Applied Microbiology and Biotechnology*. 2014, 98:8337-8346.
10. Feng Jin, Shi Qing-Shan, **Li Wen-Ru**, Shu Xiu-Lin, Chen Ai-Mei, Xie Xiao-Bao, Huang Xiao-Mo. Antimicrobial activity of silver nanoparticles in situ growth on TEMPO-mediated oxidized bacterial cellulose. *Cellulose*. 2014, 21:4557-4567.
11. **Li Wen-Ru**, Shi Qing-Shan, Ouyang You-Sheng, Chen Yi-Ben, Duan Shun-Shan. Antifungal effects of citronella oil against *Aspergillus niger* ATCC 16404. *Applied Microbiology and Biotechnology*. 2013, 97: 7483-7492.
12. Shi Qing-Shan, Feng Jin, **Li Wen-Ru**, Zhou Gang, Chen Ai-Mei, Ouyang You-Sheng, Chen Yi-Ben. Effect of different conditions on the average degree of polymerization of bacterial cellulose produced by *Gluconacetobacter Intermedius* BC-41. *Cellulose Chemistry and Technology*. 2013, 47(7-8): 503-508.
13. Hong Yi-Guo, Wu Peng, **Li Wen-Ru**, Gu Ji-Guang, Duan Shun-Shan. Humic analog AQDS and AQS as an electron mediator can enhance chromate reduction by *Bacillus* sp.strain 3C3. *Applied Microbiology and Biotechnology*. 2012, 93: 2661-2668.
14. **Li Wen-Ru**, Xie Xiao-Bao, Shi Qing-Shan, Duan Shun-Shan, Ouyang You-Sheng, Chen Yi-Ben. Antibacterial effect of silver nanoparticles on *Staphylococcus aureus*. *Biometals*. 2011, 24(1):135-141.
15. **Li Wen-Ru**, Xie Xiao-Bao, Shi Qing-Shan, Zeng Hai-Yan, Ouyang You-Sheng*, Chen Yi-Ben. Antibacterial activity and mechanism of silver nanoparticles on *Escherichia coli*. *Applied Microbiology and Biotechnology*. 2010, 85(4):1115-1122.