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### 博士生导师简介

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## 博士生导师简介

赵杰，教授，博士研究生导师，籍贯山东，理学博士。

2011年博士毕业于中国科学院长春应用化学研究所；

2011-2016年美国佐治亚南方大学，从事博士后研究工作，主要进行仿生医用抗菌、防雾、抗霜表面设计研发工作。

2016年底加入吉林大学工程仿生教育部重点室，研究方向主要包括利用仿生技术制备高性能设备、关键核心部件研发与应用研究等。围绕构建不引发细菌耐药性的仿生抗菌、防雾功能、结构-性能关系等重要基础问题开展研究。在仿生超疏水、仿生微纳结构抗菌、防雾一体化设计等方面取得了系列创新性成果。坚持基础研究与重大需求相结合，突破了系列实用化关键技术。

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招生专业：仿生科学与工程

欢迎仿生、机械、农机、材料、医学及对仿生学科研究感兴趣的优秀学生报考。

### 主要研究方向与研究兴趣

仿生医用抗菌表面及材料、仿生抗菌、防雾多功能表面、仿生腐蚀污损防护表面等等于仿生学相关研究方向。

近五年，主持国家及省部级项目5项，其中自然科学基金面上项目2项；共用技术项目1项，吉林省科技厅科学布局项目1项，自然科学基金重点子项目1项，合计经费400余万。以第一作者及通讯发表SCI文章40余篇，总引用超过1000余次，相关成果发表在ACS Appl. Mater. Interfaces, Chem. Eng. J, J. Membr. Sci等国际高水平期刊；受邀撰写了2部英文专著部分章节；申请美国发明专利2项，申请国内专利10余件，智利国家研究发展基金委项目外籍函评专家；Small、ACS Appl. Mater. Interfaces、Chem. Eng. J等知名期刊评审人。



代表文章发表

1. Ziting Liu, Chen Chen, Rujian Jiang, Jie Zhao\*, Luquan Ren, Shape Memory Composite Film for Bacteria Killing and Biofilm Detaching, *Materials Letters* 2021, 286, 129186.
2. Yang Wang, Yong Fan, Ping Zhang, Limei Tian, Jianing Xu, Shichao Niu, Luquan Ren, Jie Zhao\*, Weihua Ming\*, Dynamically oleophobic epoxy coating with surface enriched in silicone. *Progress in Organic Coatings* 154 (2021) 106170.

3. Shangjing Li, Yafei Fan, Chunhua Wu, Changfu Zhuang\*, Ying Wang, Xuemei Li, Jie Zhao\*, Zhifeng Zheng\*, Selective Hydrogenation of Furfural over the Co-Based Catalyst: A Subtle Synergy with Ni and Zn Dopants. ACS Appl. Mater. Interfaces, 2021, doi.org/10.1021/acsami.1c01436.
4. Lingwan Hao, Rujian Jiang, Yong Fan, Jia-ning Xu, Limei Tian, Jie Zhao\*, Weihua Ming, and Luquan Ren, Formation and Antibacterial Performance of Metal-Organic Framework Films via Dopamine-Mediated Fast Assembly under Visible Light, ACS Sustain. Chem. Eng. 2020, 8, 42, 15834 (正封面) .
5. Jing Sun, Yong Fan, Xu Zhang, Jie Zhao,\* Luquan Ren, Near-Infrared Light Triggered Photodynamic and Nitric Oxide Synergistic Antibacterial Nanocomposite Membrane, Chem. Eng. J. 2020, 128049.
6. Hui Wang, Lingjie Song, Rujian Jiang, Yong Fan, Jie Zhao\*, Luquan Ren, Super-repellent photodynamic bactericidal hybrid membrane, J. Membrane. Sci. 2020, 614, 118482.
7. Xiaona Yang, Limei Tian, Wei Wang, Yong Fan, Jiyu Sun, Jie Zhao\*, Luquan Ren, Bio-inspired Superhydrophobic Self-healing Surfaces with Synergistic Anticorrosion Performance, J. Bionic. Eng. 2020, 17, 1196.
8. Rujian Jiang, Lingwan Hao, Lingjie Song, Limei Tian\*, Yong Fan, Jie Zhao\*, Chaozong Liu, Weihua Ming, Luquan Ren, Lotus-leaf-inspired hierarchical structured surface with non-fouling and mechanical bactericidal performances, Chem. Eng. J. 2020, 398, 125609.
9. Jie Zhao, Pengpeng Lu, Lingjie Song\*, Limei, Tian, Weihua Ming\*, Luquan Ren, Highly efficient antifogging and frost-resisting acrylic coatings from one-step thermal curing, Colloid. Surface A, 2020, 58, 124160.
10. Jing Sun, Yong Fan, Ping Zhang, Xu Zhang, Qiang Zhou\*, Jie Zhao,\* Luquan Ren, Self-enriched mesoporous silica nanoparticle composite membrane with remarkable photodynamic antimicrobial performances, J. Colloid. Interf. Sci. 2020, 559, 197.
11. Yanlong Shao, Jie Zhao\*, Yong Fan, Zhenping Wan, Longsheng Lu, Zihui Zhang\*, Weihua Ming, Luquan Ren, Shape memory superhydrophobic surface with switchable transition between "Lotus Effect" to "Rose Petal Effect" , Chem. Eng. J. 2019, 382, 122989.

12. Lingjie Song, Liwei Sun, Jie Zhao,\* Xianghong Wang, Jinghua Yin, Shifang Luan,\* Weihua Ming, Synergistic superhydrophobic and photodynamic cotton textiles with remarkable antibacterial activities, *ACS Appl. Bio Mater.* 2019, 2, 2756.
13. Nana He, Lili Li, Panpan Wang, Junhao Zhang, Jiaqi Chen, Jie Zhao\*, Dioxide/Chitosan/poly(lactide-co-caprolactone) composite membrane with efficient Cu(II) adsorption, *Colloid. Surface A*, 2019, 580, 123687.
14. Wei Wang, Wei Wang, Pengpeng Lu, Yong Fan\*, Limei Tian, Shichao Niu, Jie Zhao,\* Luquan Ren, A Facile Antifogging/frost-resistant coating with self-healing ability, *Chem. Eng. J.* 2019, 378, 122173.
15. Jing Sun, Lingjie Song, Yong Fan, Limei Tian, Shifang Luan, Shichao, Niu, Luquan Ren, Weihua Ming, Jie Zhao,\* Synergistic photodynamic and photothermal antibacterial nanocomposite membrane triggered by single nir light source, *ACS Appl. Mater. Interfaces*, 2019, 11, 26581.
16. Jing Sun, Ping Zhang, Yong Fan, Jie Zhao,\* Limei Tian, Shichao, Niu, Lingjie Song,\* Luquan Ren, Weihua Ming, Near-infrared triggered antibacterial nanocomposite membrane containing upconversion nanoparticles, *Mater. Sci. Eng: C*, 2019, 103, 109797.
17. Ning Cao, Rujian Jiang, Lingwan Hao, Limei Tian, Ru Mo, Yong Fan, Jie Zhao\*, Luquan Ren, anti-adhesive and bactericidal polymeric coating based on Schiff-base reaction, *Mater. Lett.* 2019, 250, 182.
18. Bing Ma, Yong Fan, Li Wang, Jianing Xu, Jie Zhao\*, Three metal-organic frameworks constructed from 3,3',5,5'-azobenzene tetracarboxylic Acid: Synthesis, structure and luminescent sensing, *Norg. Chim. Acta*, 2018, 480, 166.
19. Jie Zhao\*, Ru Mo, Limei Tian, Lingjie Song, Shifang Luan, Jinghua Yin, Lu Quan Ren, Oriented antibody immobilization and immunoassay based on boronic acid-containing polymer brush, *Chinese J. Polym. Sci.*, 2018, 36, 472.
20. Rujian Jiang, Shunjie Yan, Limei Tian, Shiai Xu, Zhirong Xin\*, Shifang Luan, Jinghua Yin, Luquan Ren, Jie Zhao,\* A Biomimetic Surface for Infection-resistance through Assembly of Metal-phenolic Networks, *Chinese J. Polym. Sci.*, 2018, 36, 576.

21. Jie Zhao, Lingjie Song, and Weihua Ming\*, Antifogging and frost-resisting polymeric surfaces, *Adv. Polym. Sci.* 2018, 1, 1.
22. Jie Zhao, Li Ma, William Millians, Tiehang Wu, Weihua Ming\*, Dual-functional antifogging/antimicrobial polymer coatings. *ACS Appl. Mater. Interfaces*, 2016, 8, 8737.
23. Jie Zhao, Li Ma, Xiaojun Wang, Anthony Meyer, Weihua Ming\*. Terpolymer based SIPN coating with excellent antifogging and frost-resisting properties. *RSC. Adv.* 2015, 5, 102560.
24. Jie Zhao, William Millians, Saide Tang, Tiehang Wu, Lei Zhu, Weihua Ming\*, Self-stratified antimicrobial acrylic coatings via one-step UV curing. *ACS Appl. Mater. Interfaces*, 2015, 7, 18467.
25. Lingjie Song, Jie Zhao\*, Jiao Ma, Shifang Luan\*, Weihua Ming, Jinghua Yin, High-efficiency immunoassay platform with controllable surface roughness and oriented antibody immobilization. *J. Mater. Chem. B*, 2015, 3, 7499.
26. Jie Zhao, Anthony Meyer, Li Ma, Weihua Ming\*, Acrylic coatings with surprising antifogging and frost-resisting properties. *Chemical Communications*, 2013, 49, 11764–11766.
27. Jie Zhao, Lingjie Song, Jinghua Yin, Weihua Ming\*, Anti-bioadhesion on hierarchically structured superhydrophobic surfaces. *Chemical Communications*, 2013, 49, 9191-9193.
28. Jie Zhao, Boxun Leng, Zhengzhong Shao, Gijsbertus de With, Weihua Ming\*, Triple-scale structured superhydrophobic and highly oleophobic surfaces. *RSC Advances*, 2013, 3, 22332-22339.
29. Jie Zhao, Lingjie Song, Qiang Shi, Shifang Luan and Jinghua Yin\*, Antibacterial and Hemocompatibility Switchable Polypropylene Nonwoven Fabric Membrane Surface. *ACS Applied Materials & Interfaces*, 2013, 5, 5260-5268.
30. Jie Zhao, Qiang Shi, Shifang Luan, Lingjie Song, Huawei Yang, Paola Stagnaro and Jinghua Yin\*, Polypropylene non-woven fabric membrane via surface modification with biomimetic phosphorylcholine in Ce(IV)/HNO<sub>3</sub> redox system. *Materials Science and Engineering C*, 2012, 32, 1785-1789.
31. Jie Zhao, Qiang Shi, Shifang Luan, Lingjie Song, Huawei Yang, Hengchong Shi, Jing Jin, Xinglin Li\*, Jinghua Yin\*, Paola Stagnaro, Improved biocompatibility and antifouling property of polypropylene non-

woven fabric membrane by surface grafting zwitterionic polymer. *Journal of Membrane Science*, 2011, 369, 5-12.

32. Jie Zhao, Qiang Shi, Ligang Yin, Shifang Luan, Hengchong Shi, Lingjie Song, Jinghua Yin\*, Paola Stagnaro, Polypropylene modified with 2-hydroxyethyl acrylate-g-2-methacryloyloxyethyl phosphorycholine and its hemocompatibility. *Applied Surface Science*, 2010, 256, 7071-7076.

33. Lingjie Song, Jie Zhao\*, Shifang Luan\*, Jiao Ma, Weihua Ming, Jinghua Yin, High-efficiency immunoassay platforms with controllable surface roughness and oriented antibody immobilization. *Journal of Materials Chemistry B*, 2015, 3, 7499-7502.

34. Lingjie Song, Jie Zhao, Shifang Luan\*, Jiao Ma, Jingchuan Liu, Xiaodong Xu, Jinghua Yin\*, Fabrication of a Detection Platform with Boronic-Acid-Containing Zwitterionic Polymer Brush. *ACS Applied Materials & Interfaces*, 2013, 5, 13207-13215.

35. Lingjie Song, Jie Zhao, Jing Jin, Jiao Ma, Jingchuan Liu, Shifang Luan\*, Jinghua Yin\*, Fabricating antigen recognition and anti-bioadhesion polymeric surface via a photografting polymerization strategy. *Materials Science and Engineering C*, 2014, 36, 57-64.

36. Shuaishuai Yuan, Jie Zhao, Shifang Luan, Shunjie Yan, Jinghua Yin\*, Nuclease-functionalized poly(Styrene-*b*-isobutylene-*b*-styrene) surface with anti-infection and tissue integration bifunctions. *ACS Applied Materials & Interfaces*, 2014, 6, 18078-18086.

37. Shifang Luan, Jie Zhao, Huawei Yang, Hengchong Shi, Jing Jin, Xiaomeng Li, Jingchuan Liu, Jinghua Yin\*, Paolo Stagnaro, Surface modification of poly(styrene-*b*-(ethylene-co-butylene)-*b*-styrene) elastomer via UV-induced graft polymerization of N-vinyl pyrrolidone. *Colloids and Surfaces B: Biointerfaces*, 2012, 93, 127-134.

38. Shuaishuai Yuan, Jie Zhao, Shifang Luan, Shuaishuai Yan, Jinghua Yin\*, Enhanced biocompatibility of biostable poly(styrene-*b*-isobutylene-*b*-styrene) elastomer via poly(dopamine)-assisted chitosan/hyaluronic acid immobilization. *RSC Advances*, 2014, 59, 31481-31488.

39. Qiang Shi, Jie Zhao, Paolo Stagnaro, Huawei Yang, Shifang Luan, Jinghua Yin\*, Biocompatible polypropylene preparation by a combination of melt grafting and surface restructuring. *Journal of Applied Polymer Science*, 2012, 126, 929-938.

40. Lingjie Song, Jie Zhao, Huawei Yang, Jing Jin, Xiaomeng Li, Paolo Stagnaro, Jinghua Yin\*, Biocompatibility of polypropylene non-woven fabric membrane via UV-induced graft polymerization of 2-acrylamido-2-methylpropane sulfonic acid. *Applied Surface Science*, 2011, 258, 425-430.

41. Chang Zhang, Jing Jin, Jie Zhao, Jinghua Yin\*, Wei Jiang\*, Functionalized polypropylene non-woven fabric membrane with bovine serum albumin and its hemocompatibility enhancement. *Colloids and Surfaces B: Biointerfaces*, 2013, 102, 45-52.

42. Huawei Yang, Shifang Luan, Jie Zhao, Hengchong Shi, Qi Shi, Jinghua Yin\*, Paolo Stagnaro, Improving hemocompatibility of styrene-*b*-(ethylene-*co*-butylene)-*b*-styrene elastomer via N-vinyl pyrrolidone-assisted grafting of poly(ethylene glycol) methacrylate. *Polymer*, 2012, 53, 1675-1683.

43. Huawei Yang, Shifang Luan, Jie Zhao, Hengchong Shi, Qiang Shi, Jinghua Yin\*, Paolo Stagnaro, N-vinyl pyrrolidone-assisted free radical functionalization of glycidyl methacrylate onto styrene-*b*-(ethylene-*co*-butylene)-*b*-styrene. *Reactive and Functional Polymers*, 2010, 70, 961-966.

#### 会议论文

44. Jie Zhao, Weihua Ming\*, Super-repellent surface reduce bio-adhesion, 88th ACS Colloid & surface science symposium, Philadelphia, 2014. 06.22-06.25.

45. Jie Zhao, Anthony Meyer, Weihua Ming\*, Smart antifogging/frost-resisting coatings, 88th ACS Colloid & surface science symposium, Philadelphia, 2014. 06.22-06.25.

46. Jie Zhao, Weihua Ming\*, Anti-bioadhesion on hierarchically structured, superhydrophobic surfaces, 245th American Chemical Society (ACS) National Meeting, New Orleans, LA, 2013. 04. 07-04. 11.

#### 专著



1. Jie Zhao, Weihua Ming, "Superhydrophobic and superoleophobic polymeric surfaces." Chapter 2 in Functional Polymer Coatings: Principles, Methods, and Applications, ed. L. Wu and J. Baghdachi, Wiley, 9505, 2015. 01. 01.

授权发明专利

1. Jie Zhao, Anthony Meyer, Weihua Ming\*, Antifogging compositions and methods of making the same, 2015. 08. 20, US. 2015/0233739 A1.

2. Weihua Ming, Jie Zhao, Biocidal biobased resins and coatings, US Provisional patent application. 2016. 07. 08, US No. 62/368,673.

3. 赵杰, 张志辉, 任露泉, 一种控油粘防污自清洁无氟涂层及其制备方法, 2020.05. 22. CN 109609028.

4. 赵杰, 王洋, 范勇, 一种无氟疏油材料及其应用, 2019,12, 12. CN 110938373B.

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