# 张喆


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| 职务： | 生物与化学工程学院教师 | 职称： | 副教授 |
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## ■教育经历

- 博士（2008.09—2014.06）：东北师范大学，高分子化学与物理（硕博连读），方向：生物材料，纳米材料；
- 本科（1999.09—2003.06）：合肥工业大学，高分子材料与工程专业。

## ■工作经历

- 2008.4-2014.6　中国科学院长春应用化学研究所 陈学思院士课题组联合培养研究生
- 2014.7-2017.5　中国科学院长春应用化学研究所 高分子物理与化学国家重点实验室-助理研究员
- 2017.5-2019.6　中国科学院长春应用化学研究所 生态环境高分子材料中科院重点实验室陈学思院士课题组-助理研究员
- 2019.7-2021.12　攀枝花学院生物与化学工程学院　讲师
- 2022.1-至今　攀枝花学院生物与化学工程学院　副教授

## ■主持及参与科研项目

- 1.国家自然科学基金青年基金：电化学制备聚多巴胺复合薄膜在牙种植体治疗中的应用研究(21504088)，2016-2018年（主持）
- 2.国家自然科学基金面上项目：环境响应性高分子基因载体用于肿瘤免疫微环境调控的研究（51973217），2020-2023年（主研）
- 3.国家自然科学基金面上项目：聚氨基酸纳米载体在肿瘤免疫治疗中的应用研究（51973217），2019-2022 年（主研）
- 4.国家自然科学基金面上项目：自由基引发的新型逐步聚合反应及用于光电功能高分子高效率合成研究(21774121)，2018-2021 年（主研）
- 5.国家自然科学基金面上项目：低掺杂的电化学制备薄膜：分子设计、功能调控及光电器件应用（51573181），2016-2019 年（主研）
- 6.四川省科技厅，面上项目，2023NSFSC0327，仿生“胶贴式”水凝胶用于创口皮肤修复的研究，2023-01 至 2024-12，20 万元，主持
- 7. 四川省科技厅，面上项目，035001448，羊肚菌和铁皮石斛的菌药栽培与精深加工关键技术研究,2021-01 至 2023-12，30 万元，主研
- 8. 攀枝花市科技局指导性项目：聚乳酸可降解地膜在攀枝花农作物种植应用的研究（2020ZD-N-2），

## ■出版教材或著作

- 化学教学实践方法与效率研究（第一版）[M].辽宁大学出版社,2020.07,副主编.

## ■发表学术论文

- 1.Remodeling tumor microenvironment by versatile nanoplatform orchestrated mechanotherapy with chemoimmunotherapy to synergistically enhance anticancer efficiency. Wenqiang Chen, **Zhe Zhang**, Yunfei Han, Xinyu Li, Chunhui Liu, Yanju Sun, Yanyan Ren, Xiuwen Guan. Biomaterials 2025 317, 123104. 中科院一区.
- 2.Isolation, structures, bioactivities, and applications of the polysaccharides from Boletus spp.: A review. Jinfeng Tian，**Zhe Zhang**, Yuanhong Shang, Tao Yang, Ruifeng Zhou. International Journal of Biological Macromolecules 2025, 285, 137622.中科院一区.
- 3.Manganese-decorated CoP@$CoFe_2O_4$ nanorod arrays for high-efficiency alkaline water oxidation. Wei Gao, Yufeng Li*,

Xuejun Zhu, **Zhe Zhang**, Weiwei Tang, Houxiang Sun, Jitao Zhao, Weiwei Bao**, Jun Wang. International Journal of Hydrogen Energy 2024, 77, 23-32.中科院二区.

- 4.Extraction, structure and antioxidant activity of the polysaccharides from morels (Morchella spp.): A review. Jinfeng Tian, **Zhe Zhang**, Yuanhong Shang*, Yi Zheng. International Journal of Biological Macromolecules 2024, 264, 130656. 中科院一区.
- 5.Co(OH)F/Ni(OH)$_2$@FeOOH core-shell heterostructure as a high-efficiency electrocatalyst with strong electron interactions towards boosting the oxygen evolution reaction. Wei Gao, Yufeng Li*, **Zhe Zhang**, Weiwei Tang, Jitao Zhao, Tao Yang, Zhenyu Wu,*Weiwei Bao. International Journal of Hydrogen Energy 2024, 51, 890-897. 中科院二区.
- 6.Tribological performance and lubrication mechanism of carbon nitride nanosheets as novel and high-efficiency additives for water lubrication. Weiwei Tang, **Zhe Zhang**, Chenjie Li, Haidong Liu, Yufeng Li, Wei Zhu, Lichun Bai. Journal of Molecular Liquids 2023, 388, 122721. 中科院二区.
- 7.Graphitic carbon nitride quantum dots as novel and efficient friction-reduction and anti-wear additives for water-based lubrication. Weiwei Tang, Yi Wang, Xuejun Zhu, **Zhe Zhang**, Wei Zhu, Haidong Liu, Wei Gao, Yufeng Li. Wear 2023, 528-529, 204960. 中科院一区.
- 8.Anti-Inflammatory Effects of Natural Products on Cerebral Ischemia. Yuanhong Shang, **Zhe Zhang**, Jinfeng Tian* and Xiaokai Li. Frontiers in Pharmacology 2022, 13, 914630.
- 9.Bio inspired Conjugated Tri-Porphyrin-Based Intracellular pHSensitive Metallo-Supramolecular Nanoparticles for Near-Infrared Photoacoustic Imaging-Guided Chemo-and Photothermal Combined Therapy. **Zhe Zhang**,* Yue Cao, Xuejun Zhu,* Yufeng Li, and Xiaoyan Cai* ACS Biometerials Science& Engineering 2021, 7, 4503-4508. 中科院二区.
- 10.Zwitterionic Conjugated Polymer as the Single Component for Photoacoustic-Imaging-Guided Dual-Modal Near-Infrared Phototherapy. **Zhe Zhang**,* Yue Cao, Xuejun Zhu,* Yufeng Li, and Xiaoyan Cai* ACS Biomater. Sci. Eng. 2020, 6, 4005−4011. 中科院二区.
- 11.Porphyrin-based covalent organic framework nanoparticles for photoacoustic imaging-guided photodynamic and photothermal combination cancer therapy. Dianwei Wang, **Zhe Zhang**, Lin Lin , Feng Liu , Yanbing Wang , Zhaopei Guo ,Yanhui Li, Huayu Tian , Xuesi Chen Biomaterials 2019,223,119459 中科院一区
- Cyanines-Assisted Exfoliation of Covalent Organic Frameworks into Nanocomposites for Highly Efficient Chemo-Photothermal Tumor Therapy. Kui Wang, Zhe Zhang, Lin Lin, Kai Hao, Jie Chen, Huayu Tian, and Xuesi Chen. ACS Applied Materials & Interfaces. 2019, 11, 43, 39503-39512. 中科院一区.
- 12.Covalent Organic Nanosheets Integrated Heterojunction with Two Strategies To Overcome Hypoxic-Tumor Photodynamic Wang, Kui; Zhang, Zhe; Lin, Lin; Chen, Jie; Hao, kai; Tian, Huayu*; Chen Xuesi. Chemistry of Materials. 2019, 31, 3313-3323. 中科院一区.
- 13. Rapid release from near-infrared polymer loaded liposomes for photothermal and chemo-combined therapy, Li, Dehua*; Zhang, Meiduo; Yao, Jingke; Zhang, Zhe*. New Journal of Chemistry. 2019, 43, 2274-2277. 中科院三区.
- 14. Amphiphilic Near-Infrared Conjugated Polymer for Photothermal and Chemo Combination Therapy Yao, Jingke; Kang, Shusen; Zhang, Jian; Du, Jia; Zhang, Zhe*; Li, Mao*. ACS Biometerials Science& Engineering. 2017, 3, 2230-2234.中科院二区.
- 15. Electrochemically Organized Isolated Fullerene-Rich Thin Films with Optical Limiting Properties. Kang, Shusen; Zhang, Jian; Sang, Liwen; Shrestha, LK; Qiang; Gao, Zhang, Zhe; at all. ACS Applied Materials & Interfaces. 2016, 8,24295-24299. 中科院一区.
- 16. pH-Responsive Poly(ethylene glycol)/Poly(L-lactide) Supramolecular Micelles Based on Host-Guest Interaction. Zhang, Zhe; Lv, Qiang; Gao, Xiaoye at all. ACS Applied Materials & Interfaces. 2015, 7, 8404-8411. 中科院一区
- 17. Fabrication of modular multifunctional delivery for antitumor drugs based on host-guest recognition. Chen, Li*; Zhang, Zhe; Chen, Xiaofei at all. Acta biomaterialia 2015,18, 168-175. 中科院一区
- 18. Targeted dextran-b-poly(epsilon-caprolactone) micelles for cancer treatments. Zhang zhe; Chen xiaofei; Gao xiaoye; Yao xuemei; Chen li; He chaoliang; Chen xuesi. RSC ADVANCES 2015, 5, 18593- 18600. 中科院三区
- 19. Intracellular pH-operated mechanized mesoporous silica nanoparticles as potential drug carries. Chen Li*; Zhe Zhang; Xuemei Yao; Xiaofei Chen; Xuesi Chen. Microporous and Mesoporous Materials. 2015, 201, 169-175. IF 4.551
- 20. Polyoxometalates acid treatment for preparing starch nanoparticles. Li Chen*; Zhe Zhang; Ziwei Zhao; Xiaohong Wang; Xuesi Chen* Carbohydrate Polymer. 2014, 112, 520-524. IF 5.518
- 21. Dual-responsive supramolecular nanogels for intracellular drug delivery. Chen, Xiaofei; Chen, Li; Yao, Xuemei; Zhang,

Zhe; He Chaoliang; Zhang, Jingping; Chen, Xuesi. Chemical Communications, 2014,50, 3789-3791. IF 6.290

- 22. Intracellular pH-sensitive supramolecular amphiphiles based on host–guest recognition between benzimidazole and β-cyclodextrin as potential drug delivery vehicles. Zhe Zhang, Jianxun Ding, Xiaofei Chen, Chunsheng Xiao, Chaoliang He, Xiuli Zhuang, Li Chen and Xuesi Chen. Polymer Chemistry, 2013, 4, 3265-3271. IF 4.927
- 23. Intracellular pH-sensitive PEG-block-acetalated-dextran as efficient drug delivery platforms. Zhe Zhang, Xiaofei Chen, Li Chen, Shuangjiang Yu, Yue Cao, Chaoliang He, and Xuesi Chen. ACS Applied Materials & Interfaces. 2013， 5, 10760-10766. IF 8.097
- 24. Biodegradable thermo- and pH-responsive hydrogels for oral drug delivery. Zhe Zhang, Li Chen, Mingxiao Deng, Yunyan Bai, Xuesi Chen, Xiabin Jing. Journal of Polymer Science Part A: Polymer Chemistry 2011, 49, 2941-2951. IF 2.588
- 25. Thermo- and pH-responsive HPC-g-AA/AA hydrogels for controlled drug delivery applications. Zhe Zhang, Li Chen, Changwen Zhao, Yunyan Bai, Mingxiao Deng, Hongling Shan, Xiuli Zhuang, Xuesi Chen, and Xiabin Jing. Polymer 2011, 52, 676-682.. IF 3.483
- 26. Facile preparation of corn starch nanoparticles by alkali-freezing treatment. Zhe Zhang, Hongling Shan, Jingru Sun, Yun Weng, Xiu Wang, Jie Xiong, Li Chen, Xuesi Chen. RSC Advances 2013. 3. 13406-1341. IF 2.936
- 27. Synthesis of pH-responsive starch nanoparticles grafted poly (l-glutamic acid) for insulin controlled release. Zhe Zhang, Hongling Shan, Li Chen, Chaoliang He, Xiuli Zhuang and Xuesi Chen. European Polymer Journal 2013, 49, 2082-2091. IF 3.741
- 28. Biodegradable pH-Dependent Thermo-Sensitive Hydrogels for Oral Insulin Delivery. Zhe Zhang, Xiaoye Gao, Aiping Zhang, Xiaowei Wu, Li Chen, Chaoliang He, Xiuli Zhuang, Xuesi Chen. Macromolecular Chemistry and Physics 2012, 213, 713-719.. IF 2.492
- 29 Novel thermo- and pH-responsive hydroxypropyl cellulose- and poly (l-glutamic acid)-based microgels for oral insulin controlled release. Yunyan Bai, Zhe Zhang, Aiping Zhang, Li Chen, Chaoliang He, Xiuli Zhuang and Xuesi Chen. Carbohydrate Polymer. 2012, 89, 1207-1214. (co-first author) IF 5.518
- 30. Biodegradable Stereocomplex Micelles Based on Dextran-block-polylactide as Efficient Drug Deliveries. Ziwei Zhao, Zhe Zhang, Li Chen, Yue Cao, Chaoliang He, and Xuesi Chen. Langmuir 2013, 29, 13072-13080. IF 3.789
- 31. Disulfide crosslinked PEGylated starch micelles as efficient intracellular drug delivery platforms. Aiping Zhang, Zhe Zhang, Fenghua Shi, Jianxun Ding, Chunsheng Xiao, Xiuli Zhuang, Chaoliang He, Li Chen and Xuesi Chen. Soft Matter, 2013, 9, 2224-2233. IF 3.709
- 32. Redox-Sensitive Shell-Crosslinked Polypeptide-block-Polysaccharide Micelles for Efficient Intracellular Anticancer Drug Delivery. Aiping Zhang, Zhe Zhang, Fenghua Shi, Chunsheng Xiao, Jianxun Ding, Xiuli Zhuang, Chaoliang He, Li Chen, Xuesi Chen. Macromolecular Bioscience 2013,13, 1249-1258. IF 3.392
- 33. Thermo- and pH-responsive microgels for controlled release of insulin. Yunyan Bai, Zhe Zhang, Mingxiao Deng, Li Chen, Chaoliang He, Xiuli Zhuang and Xuesi Chen. POLYM INT 2012, 61, 1151-1167. IF 2.414
- 34. Biodegradable, pH-Responsive Carboxymethyl Cellulose/Poly(Acrylic Acid) Hydrogels for Oral Insulin Delivery. Gao, Xiaoye; Cao, Yue; Song, Xiangfu; Zhang, Zhe; Zhuang, Xiuli; He, Chaoliang*; Chen, Xuesi. Macromolecular Bioscience 2014, 14, 565-575. IF 3.392
- 35. In Vitro Study of Electroactive Tetraaniline-Containing Thermosensitive Hydrogels for Cardiac Tissue Engineering Cui, Haitao; Liu, Yadong; Cheng, Yilong; Zhang, Zhe; Zhang, Peibiao; Chen, Xuesi*; Wei, Yen* Biomacromolecules 2014,15,115-1123. IF 5.738
- 36. Plug-and-play multifunctional mesoporous silica nanoparticles as potential platforms for cancer therapy. Chen, Xiaofei; Yao, Xuemei; Zhang, Zhe; Chen, Li* RSC Advances 2014, 4, 49137-49143. IF 2.936
- 37. Intracellular pH-Sensitive Metallo-Supramolecular Nanogels for Anticancer Drug Delivery. Yao, Xuemei; Chen, Li*; Chen, Xiaofei; Zhang, Zhe; Zheng, Hui; He, Chaoliang*; Zhang, Jingping; Chen, Xuesi. ACS Applied Materials & Interfaces, 2014, 6, 7816-7822. IF 8.097
- 38. Boronic Acid Shell-Crosslinked Dextran-b-PLA Micelles for Acid-Responsive Drug Delivery. Zhao, Ziwei; Yao, Xuemei; Zhang, Zhe; *Chen, Li; He, Chaoliang; Chen, Xuesi. Macromolecular Bioscience, 2014, 1609-1618. IF 3.392

## ■发明专利及软件著作权

- 陈莉,张喆,白云艳,**单洪玲**,陈学思,庄秀丽,. 一种聚(L-谷氨酸-g-甲基丙烯酸羟乙酯)与羟丙基纤维素-g-丙烯酸共聚水

凝胶及制法，中国发明专利，专利号：ZL201010205252.X, 2013-02-13。

- 陈莉,**单洪玲**,张喆,孙敬茹,庄秀丽,陈学思. 可完全生物降解的纳米淀粉接枝聚乳酸.中国发明专利，专利号：ZL201110104620.6
- 陈莉,**单洪玲**,张喆,孙敬茹,庄秀丽,陈学思. 一种可完全生物降解的纳米淀粉接枝聚谷氨酸苄酯的制作方法.中国发明专利，专利号：ZL201110104623.X

## ■获奖及荣誉

- [1]2014 年吉林省科学技术奖三等奖（排名第 4）
- [2]2014 年吉林省自然科学学术成果将二等奖（排名第 7）
- [3]2013 吉林省发明创造大赛三等奖（排名第 2）
- [4]2021 四川省一流课程（排名第 2）
- [5]2023 吉林省科学技术奖自然科学奖二等奖（排名第四）