

ZHIYUAN HAN

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EDUCATION

University of Illinois Urbana Champaign 2015-Present

Ph.D. Candidate in Materials Science and Engineering, Advisor: Prof. Andrew M. Smith

Sichuan University, China 2011-2015

Bachelor of Engineering in Polymer Materials and Engineering

Thesis: Elastic Heparin-mimicking Hydrogel with Enhanced Conductivity and Biocompatibility

Advisor: Prof. Changsheng Zhao

PUBLICATIONS

- Tao Xiang, Ling-Ren Wang, Lang Ma, **Zhi-Yuan Han**, Rui Wang, Chong Cheng, Yi Xia, Hui Qin, and Changsheng Zhao. From commodity polymers to functional polymers, *Scientific Reports*, 4, 2014.
- **Zhiyuan Han**, Chong Cheng, Lisha Zhang, Chongdan Luo, Chuanxiong Nie, Jie Deng, Tao Xiang, and Changsheng Zhao. Toward robust pH-responsive and anti-fouling composite membranes via one-pot in-situ cross-linked copolymerization, *Desalination*, 349 (2014): 80-93.
- Tao Xiang, Chao He, Rui Wang, **Zhi-Yuan Han**, Changsheng Zhao. Ionic-strength-sensitive polyethersulfone membrane with improved anti-fouling property modified by zwitterionic polymer via in situ cross-linked polymerization, *Journal of Membrane Science*, 476 (2015): 234-242.
- Weifeng Zhao, **Zhiyuan Han (co first author)**, Lang Ma, Shudong Sun, and Changsheng Zhao. Highly hemo-compatible, mechanically strong, and conductive dual cross-linked polymer hydrogels. *Journal of Materials Chemistry B* 4, 48 (2016): 8016-8024.
- Weifeng Zhao, **Zhiyuan Han** and Changsheng Zhao. Super anti-coagulant dual-network hydrogels with controllable conductivity, tunable swelling and mechanically strong properties. Paper presented at 4th Symposium on Innovative Polymers for Controlled Delivery (SIPCD), SEP 23-26, 2016, Suzhou, PEOPLES R CHINA. *Journal of Controlled Release*, 259, E137-E137.
- Menghua Xiong, **Zhiyuan Han**, Ziyuan Song, Jin Yu, Hanze Ying, Lichen Yin, and Jianjun Cheng. Bacteria - assisted activation of antimicrobial polypeptides via random coil to helix transition. *Angewandte Chemie International Edition* (2017).
- Menghua Xiong, Yan Bao, Xin Xu, Hua Wang, **Zhiyuan Han**, Ziyuan Song, Jinjing Chen, Richard M. Peek, Jr. Lichen Yin, Lin-Feng Chen, and Jianjun Cheng. Selective killing of helicobacter pylori with pH-responsive helix-coil conformation transitionable antimicrobial polypeptides. *Proceedings of the National Academy of Sciences, USA*, (2017): 201710408.
- Ziyuan Song, **Zhiyuan Han**, Shixian Lv, Chongyi Chen, Li Chen, Zhangsuo Liu, and Jianjun Cheng. Synthetic polypeptides: from polymer design to supramolecular assembly and biomedical application. *Chemical Society Reviews*, 46.21 (2017): 6570-6599.
- **Zhiyuan Han**, Menghua Xiong and Jianjun Cheng, Lipidated radially amphiphilic antimicrobial polypeptides display high antimicrobial activity. (in preparation)

PROFESSIONAL EXPERIENCES

University of Illinois Urbana Champaign Urbana, IL

Graduate Research Assistant of Prof. Andrew M. Smith Sep. 2017-Present

- Develop polymeric materials for quantum dots coating

Graduate Research Assistant of Prof. Jianjun Cheng Aug. 2015-Aug. 2017

- Develop new lipopeptide materials
- Develop polypeptide materials for gene delivery and antimicrobial applications

Sichuan University Chengdu, China

Undergrad Research Assistant of Prof. Changsheng Zhao May. 2013-Jun. 2015

College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials and Engineering

- Developed a new type of conductive hydrogels with highly elasticity and biocompatibility
- Developed functional polymeric membranes (pH responsive, ionic sensitive membranes) via *in-situ* cross-linked polymerization

CONFERENCE PRESENTATIONS

- **Zhiyuan Han**, Jianjun Cheng*. Helical lipopeptide as antimicrobial agent. Soft Materials Seminar Series, Urbana, Illinois, United States, February, 7th, 2017. (**Oral presentation**)
- **Zhiyuan Han**, Menghua Xiong, Jianjun Cheng*. Helical Antimicrobial Polypeptides with Radial Amphiphilicity. 253rd American Chemical Society National Meeting and Exposition, San Francisco, California, United States, April, 2nd, 2017. (**Oral Presentation**)

AWARDS AND HONORS

- Outstanding Graduates, Sichuan University 2015
- Outstanding Bachelor's Thesis, Sichuan University 2015
- First Prize, Outstanding Project, 2nd Sichuan University Undergraduate Innovative Entrepreneurial Forum 2014
- Yinxi Scholarship, Sichuan University (Ranked 1/215, College of Polymer Science and Engineering) 2014
- First Prize Scholarship, Sichuan University (Ranked 8/215, College of Polymer Science and Engineering) 2013
- Outstanding Student, Sichuan University 2013
- First Prize, Encyclopedic Knowledge Competition, College of Polymer Science and Engineering, Sichuan University 2013
- Third Prize Scholarship, Sichuan University (Ranked 9/90, College of Manufacturing Science and Engineering) 2012