

# Resume of Zhu Xiangwei

## **Basic Information**



School:	School of Life and Health Sciences
Gender:	Male
Date of Birth:	198803
Title:	Associated Professor
Education:	Ph.D of Food Science
Tutor:	Master degree
Interest of research:	frozen food and its health concerns, cryoprotective manufacturing, bio-inspired coacervations.

## **Academic Background**

From September 2006 to July 2010, Huazhong Agricultural University Chutian College, Bachelor's degree in Food Science;

From September 2010 to July 2013, Huazhong Agricultural University, Master's degree of Food Science;

From August 2013 to May 2017, Kansas State University, Ph.D of Grain Science.

From November 2017 to October 2019, Huazhong University of Science and Technology, Postdoctor of Chemistry.

## **Oversea studying**

2013/08-2017/05, Ph.D student, Kansas State University, USA;

## **Enrollment Information**

1. Enrollment Discipline: Master of Food Science; Master of Biological Engineering
2. Research interest: frozen food and its health concerns, cryoprotective manufacturing, bio-inspired coacervations.
3. Enrollment Year: 2023-2024

## **Representative Projects**

1. National Natural Science Foundation of China. "Elucidate the synergistic cryoprotective mechanism of adenosine monophosphate and basic amino acids to fish myosin denaturation on the basis of its head-to-tail structures", No. 32201953, PI, 2023-2025.
2. Hubei Province Natural Science Foundation. "Underlying Mechanism of the stabilization effect of Tannic Acid to Overheating-induced Myosin Aggregations and Gel Deterioration", PI, 2021-2023.
3. "Shuguang Program" of Wuhan Science and Technology Bureau, PI, 2022-2024.
4. Key Laboratory of Bulk Grain and Oil Deep Processing Ministry of Education.

- “Elucidate the Key Structures of Cryoprotective Carrageenan to the Storage Performance of Frozen Dough”, PI, 2021-2023.
5. Collaborative Grant-in-Aid of HBUT National “111” center for cellular Regulation and Molecular Pharmaceutics. “Supramolecular Synergy between Proteins and Polyphenols in Water-Resistant Bio Adhesives”, PI, 2021-2024.
  6. Open Project Program of Guangdong Provincial Key Laboratory of Intelligent Food Manufacturing. “Molecular Mechanism of Zwitterionic Chitosan that Inhibits Freezing-induced Deterioration of Fermented Dough”, PI, 2022-2023.
  7. Open Access Projects of the Key Laboratory of Fermentation Engineering, Ministry of Education, PI, 2022-2024.
  8. HBUT Startup Fund of overseas returnees. “Study on the Interfacial Properties of Cationic Polysaccharide Aggregates”, PI, 2021-2023.

### **Representative Articles (since 2019)**

1. **Zhu X**, Wei C, Chen H, Zhang C, Peng H, Wang D, Yuan J, Waite H, Zhao Q\*. A Cation-Methylene-Phenyl Sequence Encodes Programmable Poly(Ionic Liquid) Coacervation and Robust Underwater Adhesion. *Advanced Functional Materials*, 2022, 32, 2105464. (Nature Index indexed paper, IF: 19)
2. **Zhu X**, Chen J, Hu Y, Zhang N, Fu Y, Chen X\*. Tuning complexation of carboxymethyl cellulose/ cationic chitosan to stabilize Pickering emulsion for curcumin encapsulation. *Food Hydrocolloids*, 2021, 110, 106135. (ESI highly cited papers)
3. Zhang T, Teng Y, He Y, Li Y, Yuan Y, Li B, Chen Y, **Zhu X**\*. Elucidate the molecular basis of ampholytic chitosan as a high-performance cryoprotectant to myosin denaturation: The importance of saccharide charges. *Food Hydrocolloids*, 2024, 152, 109915.
4. **Zhu X**, He D, Chen Y, Duan X, Li Y, Yuan Y, Zhan F, Li B, Teng Y\*. Adenosine monophosphate boosts the cryoprotection of ultrasound-assisted freezing to frozen surimi: Insights into protein structures and gelling behaviors. *Food Chemistry*, 2024, 450, 139434.
5. Zhang X, Chen Y, Li R, Shi Y, Zhao Y, Li B, Chen Y\*, **Zhu X**\*. Fabrication of pea protein isolate-stabilized oil-in-water emulsions with high freeze-thaw stability: effect of high intensity ultrasonic on emulsions and interfacial protein structure. *Food Hydrocolloids*, 2024, 110484.
6. **Zhu X**\*, Chen Y, Zhang N, Luo Y, Peng R, Chen L, Xu J, Teng Y, Li B, Ding W, Chen X\*. Chickpea peptide as a plant-based cryoprotectant in frozen dough: Insight into the water states, gluten structures, and storage stabilities. *LWT*, 2024, 200, 116172.
7. Teng Y, Zhang T, Dai H, Wang Y, Xu J, Zeng X, Li B, **Zhu X**\*. Inducing the structural of binary pulse protein complex to stimulate the solubilization chickpea (*Cicer arietinum* L.) protein isolate. *Food Chemistry*, 2023, 135136.
8. Wang C, Rao J, Li X, He D, Zhang T, Xu J, Chen X, Wang L, Yuan Y, **Zhu X**\*. Chickpea protein hydrolysate as a novel plant-based cryoprotectant in frozen

- surimi: insights into protein structure integrity and gelling behaviors. *Food Research International*, 2023, 169, 112871.
9. **Zhu X\***, Yuan P, Zhang T, Wang Z, Cai D, Shen Y, Xu J, Song C, Goff D. Effect of carboxymethyl chitosan on the storage stability of frozen dough: state of water, protein structures and textural properties. *Food Research International*, 2022, 151, 110863.
  10. Kang S, Xu Y, Zhang Y, Gao P, Guan Y, Ku S, Xu J, **Zhu X\***, Li H\*. Modulation of gut microbiota by chickpea-derived proteins and peptides with antioxidant capabilities. *LWT*, 2023, 187, 115341.
  11. **Zhu X**, Chen Y, Hu Y, Han Y, Xu J, Zhao Y, Chen X, Li B\*. Tuning the molecular interactions between gliadin and tannic acid to prepare Pickering stabilizers with improved emulsifying properties. *Food Hydrocolloids*, 2021, 111, 106179.
  12. **Zhu X**, Zhan F, Zhao Y, Han Y, Chen X\*, Li B\*. Improved foaming properties and interfacial observation of sodium caseinate-based complexes: Effect of carboxymethyl cellulose. *Food Hydrocolloids*, 2020, 105, 105758.
  13. Song C, Chen X, Hao R, Cai D, **Zhu X\***, Liu H\*, Chen J\*, Liu W\*. Cocoon-based 3D Solar Steam Generator for High-performance Saline Desalination. *Sustainable Energy & Fuels*, 2021, 5, 4126-4132.
  14. **Zhu X**, Li X, Liu X, Li J, Zeng XA, Li Y, Yuan Y, Teng Y\*. Pulse Protein Isolates as Competitive Food Ingredients: Origin, Composition, Functionalities, and the State-of-the-Art Manufacturing. *Foods*, 2024, 13, 6.
  15. **Zhu X\***, Zhu M, He D, Li X, Shi L, Wang L, Xu J, Zheng Y, Yin T\*. Cryoprotective Roles of Carboxymethyl Chitosan during the Frozen Storage of Surimi: Protein Structures, Gel Behaviors and Edible Qualities. *Foods*, 2022, 11, 356.
  16. **Zhu X**, Wei C, Zhang F, Tang Q, Zhao Q\*. A Robust Salty Water Adhesive by Counterion Exchange Induced Coacervate. *Macromolecular Rapid Communications*, 2019, 40(7), 1800758.
  17. Chen X, Li X, **Zhu X\***, Wang G, Zhuang K, Wang Y, Ding W\*. Optimization of Extrusion and Ultrasound-Assisted Extraction of Phenolic Compounds from Jizi439 Black Wheat Bran. *Processes*, 2020, 8091153.
  18. **Zhu X\***, Song, C.; Sun, X.; Wang, D.; Cai, D.; Wang, Z.; Chen, Y.; Chen, X. Improved water resistance of TA-modified soy adhesive: Effect of complexation. *International Journal of Adhesion and Adhesives*, 2021, 108, 102858.
  19. **Zhu X**, Zhao Y, Wu L, Gao X, Huang H, Han Y\*, Zhu T. Advances in Biosensors for the Rapid Detection of Marine Biotoxins: Current Status and Future Perspectives. *Biosensors*, 2024, 14, 203.
  20. Wei C<sup>+</sup>, **Zhu X<sup>+</sup>**, Peng H, Chen J, Zhang F, Zhao Q\*. Facile Preparation of Lignin-Based Underwater Adhesives with Improved Performances. *ACS Sustainable Chemistry & Engineering*, 2019, 7(4), 4508-4514.