

**ZHILONG YU, Ph.D.****Associate Professor**

School of Food Science and Technology

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EDUCATION

2019	Ph.D.	Food Science	University of Missouri, Columbia, MO
2016	D.Eng.	Biomass Chemistry and Engineering	Sichuan University, China
2011	B.Eng.	Food Quality and Safety	Shandong Agricultural University, China

PROFESSIONAL EXPERIENCE

2023/02-Present	Associate Professor	Department of Food Science and Technology, Jiangnan University, China
2021/09-2022/11	Postdoctoral Researcher	Department of Food Science and Agricultural Chemistry, McGill University, Canada Mentor: Dr. Xiaonan Lu
2019/11-2021/08	Postdoctoral Research Fellow	Food, Nutrition and Health Program, University of British Columbia, Canada Mentor: Dr. Xiaonan Lu
2016/08-2019/11	Graduate Research Assistant	Food Science Program, University of Missouri Advisor: Dr. Mengshi Lin; Co-advisor: Dr. Azlin Mustapha
2012/09-2015/07	Graduate Laboratory Technician for GC-MS	National Engineering Laboratory, Sichuan University, China Advisor: Dr. Bi Shi

RESEARCH INTERESTS

- Developing intelligent food packaging integrated with multifunctional sensing systems to monitor food quality and safety in a real-time manner
- Improving food quality, safety, and sustainability through active food packaging fabricated by nanotechnology
- Elucidating the interactions between bioactive food contact materials and spoilage microbiota in foods by leveraging new precision approaches, such as metagenomics
- Understanding molecular interactions of plant phenolic compounds with food biopolymers, and applying phenolic extracts as natural additives to improve food quality and functionalities
- Enhancing the sustainability of agri-food systems by converting agricultural waste streams/food processing by-products into high-value products

RESEARCH HIGHLIGHTS

- Publications: 30 (16 first-author papers)
- H-index: 18 (>1100 citations, updated 2023-06-10)
- Manuscript Reviews: 85
- Editor Records: 9

PUBLICATIONS

Summary: 30 peer-reviewed publications, including 16 first-author papers

Google Scholar link: <https://scholar.google.com/citations?user=kZOVza4AAAAJ&hl=en>

30. Wang, W., **Yu, Z.**, Lin, M., Mustapha, A. (2023). Toxicity of silver nanoparticle-incorporated bacterial nanocellulose to human cells and intestinal bacteria. *International Journal of Biological Macromolecules*, 241, 124705.
29. **Yu, Z.**, Boyarkina, V., Liao, Z., Lin, M., Zeng, W., Lu, X. (2023). Boosting Food System Sustainability through Intelligent Packaging: Application of Biodegradable Freshness Indicators. *ACS Food Science & Technology*, 3, 199-212.
28. Gao, H.X., Chen, N., He, Q., Shi, B., **Yu, Z.**, Zeng, W.C. 2022. Effects of Ligustrum robustum (R ROB.) Blume extract on the quality of peanut and palm oils during storage and frying process. *Journal of Food Science*, 87, 4504-4521.
27. Chen, N., Gao, H.X., He, Q., **Yu, Z.**, Zeng, W.C. 2022. Influence of structure complexity of phenolic compounds on their binding with maize starch. *Food Structure*, 33, 100286.
26. He, W.J., Chen, N., **Yu, Z.**, Sun, Q., He, Q., Zeng, W.C. 2022. Effect of Structure Complexity of Catechins on the Properties of Glutenin: the Rule, Action Mechanism and Application. *Food Biophysics*, 17, 586-597.
25. He, W.J., Chen, N., **Yu, Z.**, Sun, Q., He, Q., Zeng, W.C. 2022. Gliadin interacted with tea polyphenols: potential application and action mechanism. *International Journal of Food Sciences and Nutrition*, 73, 786-799.
24. Tan, C., Xu, Q.D., Chen, N., He, Q., Sun, Q., **Yu, Z.**, Zeng, W.C. 2022. Effects of tea polyphenols on the quality of common carp (Cyprinus carpio) meat during the freezing process and its action mechanism. *Journal of Food Processing and Preservation*, 46, e16521.
23. He, W.J., Chen, N., **Yu, Z.**, Sun, Q., He, Q., Zeng, W.C. 2022. Effect of tea polyphenols on the quality of Chinese steamed bun and the action mechanism. *Journal of Food Science*, 87, 1500-1513.
22. **Yu, Z.**, Jung, D., Park, S., Hu, Y., Huang, K., Rasco, B.A., Wang, S., Ronholm, J., Lu, X., Chen, J. 2022. Smart traceability for food safety. *Critical Reviews in Food Science and Nutrition*, 62, 905-916.
21. **Yu, Z.**, Wang, K., Lu, X. 2021. Flexible cellulose nanocrystal-based bionanocomposite film as a smart photonic material responsive to humidity. *International Journal of Biological Macromolecules*, 188, 385-390.
20. Xu, Q.D., **Yu, Z.**, Zeng, W.C. 2021. Structural and functional modifications of myofibrillar protein by natural phenolic compounds and their application in pork meatball. *Food Research International*, 148, 110593.
19. Sun, L., **Yu, Z.**, Alsammarraie, F.K., Lin, M.H., Kong, F., Huang, M., Lin, M. 2021. Development of cellulose nanofiber-based substrates for rapid detection of ferbam in kale by surface-enhanced Raman spectroscopy. *Food Chemistry*, 347, 129023.
18. Petersen, M., **Yu, Z.**, Lu, X. 2021. Application of Raman spectroscopic methods in food safety: A review. *Biosensors*, 11, 187.
17. Zhao, L. *, **Yu, Z.** *, Liu, J., Zhang, H., Hu, Y., Lu, X., Zheng, W. 2021. Development of a polymerase

- chain reaction lateral flow immunoassay for rapid authentication of venison in food products. *ACS Food Science & Technology*, 1, 12-16. (*Co-first authors)
16. Chen, N., Gao, H.X., He, Q., Yu, Z., Zeng, W.C. 2020. Interaction and action mechanism of starch with different phenolic compounds. *International Journal of Food Sciences and Nutrition*, 71, 726-737.
 15. Yu, Z., Wang, W., Sun, L., Kong, F., Mustapha, A., Lin, M. 2020. Preparation of cellulose nanofibril/titanium dioxide nanoparticle nanocomposites as fillers for PVA-based packaging and investigation into their intestinal toxicity. *International Journal of Biological Macromolecules*, 156, 1174-1182.
 14. Wang, W., Yu, Z., Alsammarrarie, F.K., Kong, F., Lin, M., Mustapha, A. 2020. Properties and antimicrobial activity of polyvinyl alcohol-modified bacterial nanocellulose packaging films incorporated with silver nanoparticles. *Food Hydrocolloids*, 100, 105411.
 13. Yu, Z., Wang, W., Dhital, R., Kong, F., Lin, M., Mustapha, A. 2019. Antimicrobial effect and toxicity of cellulose nanofibril/silver nanoparticle nanocomposites prepared by an ultraviolet irradiation method. *Colloids and Surfaces B: Biointerfaces*, 180, 212-220.
 12. Yu, Z., Wang, W., Kong, F., Lin, M., Mustapha, A. 2019. Cellulose nanofibril/silver nanoparticle composite as an active food packaging system and its toxicity to human colon cells. *International Journal of Biological Macromolecules*, 129, 887-894.
 11. Yu, Z., Dhital, R., Wang, W., Sun, L., Zeng, W., Mustapha, A., Lin, M. 2019. Development of multifunctional nanocomposites containing cellulose nanofibrils and soy proteins as food packaging material. *Food Packaging and Shelf Life*, 21, 100366.
 10. Sun, L., Yu, Z., Lin, M. 2019. Synthesis of polyhedral gold nanostars as surface-enhanced Raman spectroscopy substrates for measurement of thiram in peach juice. *Analyst*, 144, 4820-4825.
 9. Yu, Z., Sun, L., Wang, W., Zeng, W., Mustapha, A., Lin, M. 2018. Soy protein-based films incorporated with cellulose nanocrystals and pine needle extract for active packaging. *Industrial Crops & Products*, 112, 412-419.
 8. Gao, H.X., Yu, Z., He, Q., Tang, S.H., Zeng, W.C. 2018. A potentially functional yogurt co-fermentation with *Gnaphalium affine*. *LWT – Food Science and Technology*, 91, 423-430.
 7. Yu, Z., Alsammarrarie, F.K., Nayigiziki, F.X., Wang, W., Vardhanabhuti, B., Mustapha, A., Lin, M. 2017. Effect and mechanism of cellulose nanofibrils on the active functions of biopolymer-based nanocomposite films. *Food Research International*, 99, 166-172.
 6. Yu, Z., Zeng, W.C., Zhang, W.H., Liao, X.P., Shi, B. 2016. Effect of ultrasonic pretreatment on kinetics of gelatin hydrolysis by collagenase and its mechanism. *Ultrasonics Sonochemistry*, 29, 495-501.
 5. Yu, Z., Gao, H.X., Zhang, Z., He, Z., He, Q., Jia, L.R., Zeng, W.C. 2015. Inhibitory effects of *Ligustrum robustum* (Rxob.) Blume extract on α -amylase and α -glucosidase. *Journal of Functional Foods*, 19, 204-213.
 4. Yu, Z., Zhang, Z., Zeng, W.C. 2014. Investigation of antibrowning activity of pine needle (*Cedrus deodara*) extract with fresh-cut apple slice model and identification of the primary active components. *European Food Research and Technology*, 239, 669-678.
 3. Yu, Z., Zeng, W.C., Zhang, W.H., Liao, X.P., Shi, B. 2014. Effect of ultrasound on the activity and conformation of α -amylase, papain and pepsin. *Ultrasonics Sonochemistry*, 21, 930-936.
 2. Yu, Z., Zeng, W.C. 2013. Antioxidant, antibrowning, and cytoprotective activities of *Ligustrum robustum* (Rxob.) Blume extract. *Journal of Food Science*, 78, C1354-1362.
 1. Yu, Z., Zeng, W.C., Lu, X.L. 2013. Influence of ultrasound to the activity of tyrosinase. *Ultrasonics Sonochemistry*, 20, 805-809.

MEETING PRESENTATIONS

7. Liao, Z., **Yu, Z.**, Lu, X. Development of hemp nanocellulose based-bioplastic packaging to modulate meat microbiome and shelf life. *ACS Fall 2022 National Meeting*. Virtual, Aug. 2022. (Poster Presentation)
6. **Yu, Z.** Flexible nanocellulose-based bionanocomposite film for intelligent packaging. *1st International Symposium of the Early Career Scientists Section IUFoST/IAFoST*. Virtual, Sept. 2021. (Invited Speaker)
5. **Yu, Z.**, Wang, W., Mustpha, A., Lin, M. Synthesis of cellulose nanofibril/titanium dioxide nanoparticle composites and investigation into their toxicity. *Institute of Food Technologists 2019 Annual Meeting*. New Orleans, LA, June 2019. (Poster Presentation)
4. **Yu, Z.**, Wang, W., Mustpha, A., Lin, M. Antimicrobial effect and toxicity of cellulose nanofibril/silver nanoparticle nanocomposite prepared by the ultraviolet irradiation method. *Institute of Food Technologists 2019 Annual Meeting*. New Orleans, LA, June 2019. (Poster Presentation)
3. **Yu, Z.**, Nayigiziki, F.X., Wang, W., Vardhanabhuti, B., Mustpha, A., Lin, M. Effect of cellulose nanofibers on active functions of polysaccharide-based edible films. *Institute of Food Technologists 2017 Annual Meeting*. Las Vegas, NV, June 2017. (Poster Presentation)
2. **Yu, Z.**, Zeng, W.C. Studies on the *in vitro* antioxidant activity of *Ligustrum robustum* (Rxob.) Blume extracts. *8th High-Level Forum on Sino-US Food Industry & 12th Annual Meeting of Chinese Institute of Food Science and Technology*. Dalian, China, Oct. 2015. (Poster Presentation)
1. **Yu, Z.**, Zeng, W.C., Zhang, W.H., Liao, X.P., Shi, B. Effect of power ultrasound on the activity and conformation of papain. *10th Asian International Conference on Leather Science and Technology*. Okayama, Japan, Nov. 2014. (Poster Presentation)

GRANTSMANSHIP

- **Canada–British Columbia Agri-Innovation Program Grant (\$182,500 CAD)**, entitled “Development of hemp nanocellulose-based bioplastics and their application for food packaging”. Participant.
- **Mitacs Accelerate Grant (\$120,000 CAD)**, entitled “Development of cold anesthetization and packaging technologies for waterless transportation of live shrimp”. Participant.
- **Missouri Soybean Merchandising Council Grant (\$45,826 USD)**, entitled “Development of soy protein-nanocellulose composites as food packaging”. Participant.

PROFESSIONAL ACTIVITIES**Professional Affiliations**

- Institute of Food Technologists (IFT)
- American Chemical Society (ACS)

Journal Editor

- 2020-Present Academic Editor, *Evidence-Based Complementary and Alternative Medicine*
- 2021-Present Review Editor, *Frontiers in Food Science and Technology*
- 2022-2023 Guest Editor, *Materials*

Journal Referee: Ad Hoc Reviewer (review count)

- Food and Bioprocess Technology (22)
- Journal of Food Measurement and Characterization (21)
- Food Packaging and Shelf Life (10)
- Industrial Crops and Products (7)

- Food Bioscience (7)
- International Journal of Biological Macromolecules (3)
- Evidence-Based Complementary and Alternative Medicine (2)
- Scientific Reports (2)
- Food Chemistry (1)
- European Food Research and Technology (1)
- Food Science and Technology International (1)
- Journal of Food Science (1)
- Journal of Agriculture and Food Research (2)
- Polymer Testing (1)
- Processes (1)
- Journal of Composites Science (1)
- Biomedical and Pharmacology Journal (1)
- Environmental Nanotechnology, Monitoring & Management (1)

*Verified records by Web of Science: <https://www.webofscience.com/wos/author/record/J-8482-2019>

Grant and Conference Proposal Reviewer

- 2021 Smart Agriculture and Food Innovation Program, Alberta Innovates, Canada
- 2021 Tier 1 Reviewer for the FIRST 2020 Call for Proposals: Scientific Sessions, IFT
- 2022 Tier 1 Reviewer for the FIRST 2020 Call for Proposals: Scientific Sessions, IFT