

# CURRICULUM VITAE

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## KAILONG ZHANG

Graduate Research Assistant

Cellulose, Functional Materials, DFT,

Molecular Dynamics

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Center for Renewable Carbon

School of Natural Resources

University of Tennessee Knoxville (UTK)

2506 Jacob Drive

Knoxville, TN. 37996, US

## EDUCATION

08/2021 – present **Ph.D., Natural Resources**, *The University of Tennessee*, Knoxville, TN, USA

08/2017 – 07/2020 **M.S., Cereal Science**, *Shaanxi Normal University*, Xi'an, China

08/2013 – 07/2017 **B.S., Food Science**, *Northwest A&F University*, Yangling, China

## PROFESSIONAL APPOINTMENTS

2021 – present **Graduate Research Assistant**, *The University of Tennessee*, Knoxville, TN, USA

2020 – 2021 **Research Associate**, *Shaanxi Normal University*, Xi'an, China

## GRANTS

01/2024 – 12/2024 Cellulose nanofibers templated metal-organic frameworks for fluorescent-visual detection of pesticides, *UTK Student Faculty Research Award*, Student PI, \$4,979

## AWARDS/HONORS

- ♦ UTK Graduate Student Senate Travel Award, 2022 – 2024
- ♦ Oscar Roy Ashley Graduate Fellowship, UTK, 2023
- ♦ Third Place Prize of the 15<sup>th</sup> Natural Science Outstanding Academic Paper of Shaanxi Province, Shaanxi, China, 2022
- ♦ NSF Travel Award for the USDA S1075 Annual Conference, Houston, TX, 2022
- ♦ Herbert College Ph.D. Fellowship, UTK, 2021–2025
- ♦ Outstanding Graduate Student Award, Shaanxi Normal University, China, 2020
- ♦ Silver Prize of Innovation & Entrepreneurship Competition, Shaanxi Normal University, China, 2019
- ♦ M.S. Graduate Fellowship, Shaanxi Normal University, China, 2017 – 2019
- ♦ Advanced Individual of Social Practice, Northwest A&F University, China, 2016

## SELECTED PUBLICATIONS

1. **Zhang, K.**, Smith, M. D., & Li, M.\* (2024) Molecular insights into the early-stage *in situ*

assembly of metal–organic framework precursors on TEMPO-oxidized cellulose nanofibrils. *In Preparation*.

2. **Zhang, K.**, William, L.H., Evans, N.D., Elder, T., Garner, C.M., & Li, M.\* (2024) In-situ synthesis of metal-organic frameworks on sulfonated cellulose nanofibrils for dye removal. *Submitted to Carbohydrate Polymers*.
  3. **Zhang, K.**, Elder, T., Cheng, Z., Zhan, K., Peng, Y., & Li, M.\* (2024). Cellulose nanofiber-templated metal-organic frameworks for fluorescent detection of methyl parathion pesticides, *Journal of Environmental Chemical Engineering*, 12(3), 112670.
  4. **Zhang, K.**, Sutton, I., Smith, M. D., Harper, D. P., Wang, S., Wu, T., & Li, M.\* (2023). Ambient-densified and polymer-free transparent wood film for smart food packaging window. *iScience*, 26(12), 108455.
  5. Kheam, R., **Zhang, K.**, Elder, T., Bryant, N., Ragauskas, A., & Li, M.\* (2023). Totally chlorine-free peracetic acid pulping for nanocellulose isolation from hemp and poplar. *TAPPI Journal*, 22(8), 529.
  6. Xie, D., Pu, Y., Meng, X., Bryant, N., **Zhang, K.**, Wang, W., Ragauskas, A., & Li, M.\* (2022). Effect of lignin structures on physicochemical properties of lignin-grafted-poly(caprolactone) and its application for water/oil separation. *ACS Sustainable Chemistry & Engineering*, 10(50), 16882-16895.
  7. **Zhang, K.**, Ren, T., Harper, D., & Li, M.\* (2022). Development of antimicrobial films with cinnamaldehyde stabilized by ethyl lauroyl arginate and cellulose nanocrystals. *Food Packaging and Shelf Life*, 33, 100886.
- Before Joining UTK-----
8. **Zhang, K.**, Dong, R., Hu, X., Ren, C., & Li, Y. (2021). Oat-based foods: Chemical constituents, glycemic index, and the effect of processing. *Foods*, 10(6), 1304.
  9. **Zhang, K.**, Li, X., Li, J., Wang, X., Ren, T., Ma, Z., . . . Hu, X. (2021). Tunable controlling the retrogradation rate of wheat starch using different fractions of *Artemisia sphaerocephala* Krasch polysaccharide. *Bioactive Carbohydrates and Dietary Fibre*, 26, 100272.
  10. **Zhang, K.**, Huang, T.-S., Yan, H., Hu, X., & Ren, T. (2020). Novel pH-sensitive films based on starch/polyvinyl alcohol and food anthocyanins as a visual indicator of shrimp deterioration. *International Journal of Biological Macromolecules*, 145, 768-776.
  11. **Zhang, K.**, Li, X., Ma, Z., & Hu, X. (2019). Solvent retention capacity of oat flour: relationship with oat  $\beta$ -glucan content and molecular weight. *Food Hydrocolloids*, 93, 19-23.

## PRESENTATIONS

- ♦ **Zhang, K.**, Smith, M. D., & Li, M.\*. Molecular insight into the *in situ* assembly of metal–organic frameworks on TEMPO-oxidized cellulose, **ACS Spring 2024**, New Orleans, LA, March 2024. (Oral)
- ♦ **Zhang, K.** & Li, M.\*. Investigating the potential of cellulose as a template for metal-organic frameworks. **UT/ORNL Center for Molecular Biophysics**, Oak Ridge, TN, October 2023. (Oral)
- ♦ **Zhang, K.** & Li, M.\*. Cellulose nanofibers templated metal organic frameworks for fluorescent-visual detection and adsorption of pesticides. **ACS Spring 2023**, Indianapolis, IN, March 2023. (Oral)

- ♦ **Zhang, K.** & Li, M.\*. Sulfonated cellulose nanofibers templated metal–organic frameworks for the rapid dye removal. **Frontiers in Biorefining**, St. Simons Island, GA, October 2022. (Poster)
  - ♦ **Zhang, K.** & Li, M.\* (2022). Antimicrobial food packaging with cinnamaldehyde stabilized by ethyl lauroyl arginate and cellulose nanocrystals. **USDA S-1075 2022**, Houston, TX, July 2022. (Poster)
  - ♦ **Zhang, K.**, Ren, T., Harper, D., & Li, M.\* (2022). Development of antimicrobial films with cinnamaldehyde stabilized by ethyl lauroyl arginate and cellulose nanocrystals. **ACS Spring 2022**, San Diego, CA, March 2022. (Oral)
- Before Joining UTK-----
- ♦ **Zhang, K.** & Hu, X. Rapid determination of  $\beta$ -glucan content in oat based on near infrared spectroscopy technique, **China Oat and Buckwheat Industry Conference**, Ankang, Shaanxi, China, June 2019. (Oral)
  - ♦ **Zhang, K.** & Hu, X. Relationship between solvent retention capacity of oat flour and  $\beta$ -glucan content and molecular weight, **National Oat and Buckwheat Nutrition & Processing Industry Development Forum**, Baicheng, Jilin, China, October 2018. (Oral)

## COMMUNITY SERVICE AND VOLUNTARY WORK

03/2024	Judge for Southern Appalachian Science and Engineering Fair (SASEF)
10/2021 – present	Assisted with NMR weekly maintenance at CRC, UTK
01/2023 – 12/2023	Assistant for the CRC monthly Seminar Series, UTK
09/2022	Assisted with CRC booth exhibition for 2022 Ag Day Festivities, UTK
08/2019	Volunteer for 1 <sup>st</sup> International Cereal Science Conference, Xi'an, China
11/2015	Volunteer for 22 <sup>st</sup> China Yangling Agricultural Hi-Tech Fair, Yangling, China

## MENTORSHIP

Time	Name	Level	Affiliation
09/2023 – present	Ryan Baskette	B.S.	University of Tennessee
06/2023 – 08/2023	Makayla Hamilton	B.S.	Tougaloo College
09/2022 – 08/2023	Isaac Sutton	B.S.	University of Tennessee