

Zhang Jinyang

Phone: +86 173-2608-0670
Email: zhangjinyang@zju.edu.cn



EDUCATION

Ph.D., Agricultural Mechanization Engineering, Zhejiang University (China “First-class universities of the world” Plan) Sep 2017 - Jun 2022

- Dissertation: “Online Detection Method and System for Grain Moisture Based on Selective Multi-Frequency Microwaves Swept (SMFMS)”
- Advisor: Professor Zhenbo Wei, and Professor Jun Wang

B.E., Agricultural Mechanization and Automation, Northwest A&F University (China “First-class universities of the world” Plan) 2013-2017

- GPA: 3.66/4.0 (Top 2/90)
- Dissertation: “Design of Target Precision Fertilization Control System for Apple Orchard”
- Advisor: Professor Xiaoli Yan

RESEARCH INTERESTS

Microwave sensing systems for food internal quality evaluation, Development of miniaturized microwave sensors, Dielectric properties.

AWARDS & HONORS

- **National Scholarship**, Ministry of Education of China, 2021;
- Outstanding Graduate Student, Zhejiang University, 2020;
- Outstanding Doctoral Post Scholarship, Zhejiang University, 2019;
- Outstanding Graduates, Northwest A&F University, 2017;
- **National Scholarship**, Ministry of Education of China, 2016;
- **Principal Scholarship**, Northwest A&F University, 2015;

PUBLICATIONS

- [1] **Jinyang Zhang**, Jun Wang, Zhenbo Wei, et al., “Multifrequency Microwave Dielectric Properties-Based Method Coupled with SPA-PLSDA Algorithm for Rapid Discrimination of Grain Mildew,” in **IEEE Transactions on Industrial Informatics (IF=10.215)**. (Under review)
- [2] Zhenbo Wei, **Jinyang Zhang**, Jun Wang, et al., “Fabrication and Application of Three-Dimensional Nanocomposites Modified Electrodes for Evaluating the Aging Process of Huangjiu,” in **Food Chemistry (IFs=7.516)**, vol. 372, pp. 131158, Jan.2022, doi: 10.1016/j.foodchem.131158.
- [3] **Jinyang Zhang**, Jun Wang, Zhenbo Wei, et al., “Thickness-Independent Measurement of Grain Moisture Content by Attenuation and Corrected Phase Shift of Microwave Signals at Multiple Optimized Frequencies,” in **IEEE Transactions on Industrial Electronics (IFs=8.882)**, doi: 10.1109/TIE.2021.3116582.
- [4] **Jinyang Zhang**, Jun. Wang, Zhenbo Wei, et al., “OM2S2: On-Line Moisture-Sensing System Using Multifrequency Microwave Signals Optimized by a Two-Stage Frequency Selection Framework,” in **IEEE Transactions on Industrial Electronics (IFs=8.882)**, vol. 68, no. 11, pp. 11501-11510, Nov. 2021, doi: 10.1109/TIE.2020.3032927.
- [5] **Jinyang Zhang**, Jun Wang, Zhenbo Wei, et al., “Development of Multifrequency-Swept Microwave Sensing System for Moisture Measurement of Sweet Corn with Deep Neural Network,” in **IEEE Transactions on Instrumentation and Measurement (IFs=3.953)**, vol. 69, no. 9, pp. 6446-6454, Sept. 2020, doi: 10.1109/TIM.2020.2972655.

PATENTS

- [1] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. Second-Order Frequency Selection Method and Apparatus for Microwave Frequency Sweep Data. International PCT Patent. PCT/CN2021/096341, filed May 27, 2021. Patent pending (National stage, USA and Japan).
- [2] Zhenbo Wei, **Jinyang Zhang**, et al. 2021. A Novel Two-Stage Frequency Selection Method and Device Applied to Microwave Frequency Swept Data. China National Invention Patent. CN202010542110.6, filed Jun 15, 2020, and issued Aug 3, 2021.
- [3] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. A Measurement Device for Grain Moisture Content Based on Multi-Frequency Microwaves Swept Measurement Method. China National Invention Patent. CN201910063588.8, filed Jan 23, 2019, and issued Nov 3, 2020.
- [4] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. A Method for Measuring Grain Moisture Content Based on Multi-Frequency Microwaves Swept Measurement Method. China National Invention Patent. CN201910064268.4, filed Jan 23, 2019, and issued Jun 19, 2020.
- [5] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. An Online Measurement Device for Grain Moisture Content Based on Multi-Frequency Microwaves Swept Measurement Method. China National Invention Patent. CN201910064299.X, filed Jan 23, 2019, and issued Apr 17, 2020.
- [6] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. A Microwave Antennas Detection Distance Optimization Method and Device Applied to Grain Moisture Content Detection System. China National Invention Patent. CN201910063654.1, filed Jan 23, 2019, and issued Apr 17, 2020.
- [7] Zhenbo Wei, **Jinyang Zhang**, et al. 2020. A Microwave Antennas Automatic Alignment Device Applied to Grain Moisture Content Detection System. China National Invention Patent. CN201910063629.3, filed Jan 23, 2019, and issued Apr 17, 2020.

CONFERENCE PRESENTATIONS

Oral Presentations

- Jinyang Zhang. (2021, Jul). "On-Line Moisture-Sensing System using Multi-Frequency Microwave Signals Optimized by Novel Two-Stage Frequency Selection Framework." American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting 2021, Anaheim, California, United States. (Participated online)
- Jinyang Zhang. (2018, Nov). "Determination of Moisture Content of Sweet Corn by Using Multifrequency Microwaves Swept Measurement." Chinese Society for Agricultural Machinery (CSAM) Academic Annual Conference 2018, Hangzhou, Zhejiang, China.

TEACHING EXPERIENCE

Teaching Assistant, The Principles of Food Engineering

Autumn 2018, 2019, 2020

College of Biosystems Engineering and Food Science, Zhejiang University

- Introduced undergraduates to fluid mechanics experiments, such as fluid flow resistance determination.
- Provided advice and assistance to undergraduates as they conduct work in the lab.

UNIVERSITY SERVICE

Basketball Team Captain

Oct 2019 - Oct 2021

College of Biosystems Engineering and Food Science, Zhejiang University

- Organized regular training and practice games for team members.
- Led teammates participated in the Sanhao Cup of Zhejiang University, and broke into the Top 16.
- Led teammates participated in the department basketball game, and won the second prize.

Minister of Organization Department

Sep 2015 - Mar 2017

Association for Science and Technology, Northwest A&F University

- Organized members of the association to regularly exchange project experience and share scientific and technological works.
- Planned and organized a school-level scientific and technological innovation achievement display activity.

TECHNICAL SKILLS

- **Programming languages and mathematical packages:** Python, Matlab, C, C ++
- **Data analysis and visualization:** OriginPro, Excel, SPSS, SIMCA, Unscramble, GraphPad
- **Machine/deep learning packages:** PyTorch, Scikit-learn, Keras, TensorFlow
- **Computer aided design/engineering:** Solidworks, Pro/E, UG, AutoCAD
- **Embedded systems:** STM32, Arduino, Keil, Linux (Ubuntu)
- **Other:** LaTeX, MySQL, Comsol, Android Studio

LANGUAGES

English: Proficient

REFERENCES

Zhenbo Wei, Professor and Department Vice-Chair

Department of Biosystems Engineering

Zhejiang University

(+86) 158 - 5826 - 4800, weizhb@zju.edu.cn

Jun Wang, Professor and Graduate Programs Head

Department of Biosystems Engineering

Zhejiang University

(+86) 158 - 5826 - 4800, jwang@zju.edu.cn

Yongjie Cui, Professor and PhD supervisor

College of Mechanical and Electronic Engineering

Northwest A&F University

(+86) 137 - 2058 - 1232, cuiyongjie@nwsuaf.edu.cn

Yin Bao, Assistant Professor

Department of Biosystems Engineering

Auburn University

(334) 844 - 3560, yzb0016@auburn.edu