

# 周建军

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## 教育经历

2024.02-至今	美国堪萨斯州立大学 谷物科学系	博士后
2024.02-2025.08	美国农业部 淀粉化学实验室	博士后
2019.10-2023.07	西班牙 IATA-CSIC 研究所 生物技术实验室	博士
2022.01-2022.07	法国贡比涅技术大学 农-工技术中心	博士短期交流
2016.09-2019.06	武汉轻工大学 食品学院 食品科学与工程	硕士
2012.09-2016.06	武汉轻工大学 食品学院 食品科学与工程	学士

## 研究方向

本人专注于食品科学领域，主要研究方向为利用人工智能模型和新兴工程技术提高食品检测和资源利用效率。本人在博士后期间基于近红外光谱数据模型构建了食品（如谷物）智能识别和分类平台，主导建立了小样本食品化学组分（蛋白质，淀粉等）定量标准方法，优化了经典化学计量学和机器学习预测模型以及搭建了近红外光谱高通量在线分类平台。同期基于高光谱图像模型建立了粮食干燥方式的识别模型。相关研究给目前农业和食品领域面临的成分检测效率低下和储藏品质不稳定等问题提供了解决方案。此外，本人围绕可用于食品生态链的新兴工程技术展开了研究，优化了利用超声波，脉冲电场，超临界流体技术，膜分离等不同工程技术从水产资源中（如鱼副产物资源和藻类）回收重要营养组分的方案。并进一步综合运用多维分析与表征技术以及建立体外消化、细胞培养及结肠发酵等生物活性成分评价模型解析了关键活性组分的结构和功能性质，该系列研究充分提高了食品加工副产物资源的利用效率和经济价值，初步形成了从食品副产物产生、收集、加工到资源化利用的完整加工链，可助力食品产业链绿色升级。本人未来的研究方向将围绕数据模型建立与食品组分功能性性质解析展开，实现复杂食品基质的可视化分析与无损检测，推动食品品质智能控制与食品资源高效利用。

## 科研成果

### A. 论文发表

中国科学院文献情报 中心分区(升级版)	论文收录（一作/通讯，篇）					
	一作/共一	通讯	高被引（一作）	IF>10（一作）	一区	二区
	13/1	4	2	2	10	5

近年来，累计发表 SCI 论文 30 篇，参编 5 书籍章节，引用 1170 次，部分论文如下：

- Jianjun Zhou, Yonghui Li, Scott R. Bean, Paul R. Armstrong, Xiaorong Wu, 2025, Rapid and nondestructive prediction of total starch and amylose contents in single sorghum kernel (SSK) based on near infrared (NIR) spectroscopy, Carbohydrate Polymers, Volume 368, Part 2, 2025, <https://doi.org/10.1016/j.carbpol.2025.124257>. (一作, Q1, IF 12.5)

2. Sicheng Yang, Yang Cao, Chuanjie Li, Juan Manuel Castagnini, Francisco Jose Barba, Changyao Shan, **Jianjun Zhou\***, 2024, Enhancing grain drying methods with hyperspectral imaging technology: A visual analysis, *Current Research in Food Science*, Volume 8, 2024, 100695, <https://doi.org/10.1016/j.crfs.2024.100695>. (通讯, Q1, IF 7.0)
3. Yiqin Zhang<sup>1</sup>, **Jianjun Zhou<sup>1</sup>**, Wenfei Tian, Yijie Gui, Yonghui Li, 2025, Effects of soy flour formulation and pretreatment on the properties of gluten-free cookies: A comprehensive study from flour, dough, to baked products, *Food Chemistry*, Volume 468, 2025, 142481, <https://doi.org/10.1016/j.foodchem.2024.142481>. (共一作, Q1, IF 9.8)
4. **Jianjun Zhou**, Min Wang, Francisco J. Barba\*, et al. 2023. The impact of liquid-pressurized extracts of *Spirulina*, *Chlorella* and *Phaedactylum tricornutum* on in vitro antioxidant, antiinflammatory and bacterial growth effects and gut microbiota modulation. *Food Chemistry*. 401, 134083. <https://doi.org/10.1016/j.foodchem.2022.134083>. (一作, 一区, IF 9.8)
5. **Jianjun Zhou**, Ziyang Jia, Yang Fu, et al. 2022. Effects of *Laminaria japonica* polysaccharides on gelatinization properties and long-term retrogradation of wheat starch. *Food Hydrocolloids*. 133, 107908. <https://doi.org/10.1016/j.foodhyd.2022.107908>. (一作, 一区, IF 12.4, 高被引)
6. **Jianjun Zhou**, Min Wang, Maria C. Collado, Francisco J. Barba\*. 2022. Application of omics in food color. *Current Opinion in Food Science*. 46, 100848. <https://doi.org/10.1016/j.cofs.2022.100848>. (一作, 一区, IF 9.1)
7. **Jianjun Zhou**, Jianjun Zhou, Min Wang, Jorge A. Saraiva, Ana P. Martins, Carlos A. Pinto, Miguel A. Prieto, Jesus Simal-Gandara, Hui Cao, Jianbo Xiao, Francisco J. Barba. 2022. Extraction of lipids from microalgae using classical and innovative approaches. *Food Chemistry*. 384. <https://doi.org/10.1016/j.foodchem.2022.132236>. (一作, 一区, IF 9.8, 高被引)
8. **Zhou J**, Wang M, Grimi N, Dar BN, Calvo-Lerma J, Barba FJ. 2023. Research progress in microalgae nutrients: emerging extraction and purification technologies, digestive behavior, and potential effects on human gut. *Critical Reviews in Food Science and Nutrition*, <https://doi.org/10.1080/10408398.2023.2237586>. (一作, 一区, IF 8.8)
9. **Jianjun Zhou**, Min Wang, Houda Berrada, Zhenzhou Zhu, Nabil Grimi, Francisco J. Barba. 2022. Pulsed electric fields (PEF), pressurized liquid extraction (PLE) and combined PEF + PLE process evaluation: Effects on *Spirulina* microstructure, biomolecules recovery and Triple TOF-LC-MS-MS polyphenol composition. *Innovative Food Science & Emerging Technologies*. 77, 102989. <https://doi.org/10.1016/j.ifset.2022.102989>. (一作, 一区, IF 6.8)
10. **Jianjun Zhou\***, Min Wang, Francisco J. Barba, Zhenzhou Zhu, Nabil Grimi\*. (2023). A combined ultrasound + membrane ultrafiltration (USN-UF) for enhancing saccharides separation from *Spirulina* (*Arthrospira platensis*). *Innovative Food Science & Emerging Technologies*, 85, 103341. <https://doi.org/10.1016/j.ifset.2023.103341>. (一作/通讯, 一区, IF 6.8)
11. **Zhou J**, Wang M, Carrillo C, Zhu Z, Brncic M, Berrada H, Barba FJ\*. 2021. Impact of pressurized liquid extraction and pH on protein yield, changes in molecular size distribution and antioxidant compounds recovery from spirulina. *Foods*. 10(9), 2153. <https://doi.org/10.3390/foods10092153>. (一作, 二区, IF 5.1)
12. **Jianjun Zhou**, Heng Yang, Xinguang Qin, Xianqin Hu, Gang Liu, Xuedong Wang\*, et al. 2019. Effect of  $\beta$ -cyclodextrin on the quality of wheat flour dough and prebaked bread. *Food Biophysics*. 14(11). <https://doi.org/10.1007/s11483-019-09566-2>. (一作, 四区, IF 3.1)
13. **Jianjun Zhou**, Yuan Ke, Francisco J. Barba, Shensheng Xiao, Xianqin, Hu, Xinguang, Qin, Wenping Ding, Qingyun Lyu, Xuedong Wang\*, Gang Liu. 2019. The addition of  $\alpha$ -cyclodextrin and  $\gamma$ -cyclodextrin affect quality of dough and prebaked bread during frozen storage. *Foods*. 22, 8(5), 174. <https://doi.org/10.3390/foods8050174>. (一作, 二区, IF 5.1)
14. **Jianjun Zhou**, Gao Zhen, Wang Wenbiao, Huang Feng, Hu Junpeng, Gong Aqiong Wang Rui, Yang Wumin, Li Jie. Yeast cell walls stimulate viability, respiratory burst, and phagocytosis in channel catfish (*Ictalurus punctatus*) head-kidney macrophages. *Aquaculture International*. 27, 6, 1655-1665. <https://doi.org/10.1007/s10499-019-00417-y>. (一作, 三区, IF 2.4)

15. **Jianjun Zhou**, Beatriz Gullón, Francisco J. Barba\*, et al. 2021. The application of supercritical fluids technology to recover healthy valuable compounds from marine and agricultural food processing by-products: A review. *Processes*. 9(2), 357. <https://doi.org/10.3390/pr9020357>. (一作, 三区, IF 3.3)
16. Wang Min, **Zhou Jianjun\***, Pallarés Noelia, Pallares, Manuel Castagnini Juan, Carmen Collado María, Barba Francisco J. 2023. Evaluation of heavy metals, mycotoxins and mineral bioaccessibility through in vitro static digestion models of rainbow trout (*Oncorhynchus mykiss*) and sole (*Dover sole*) side stream extracts obtained by pressurized liquid extraction. *Food Chemistry*. 419. 10.1016/j.foodchem.2023.136054. (通讯, 一区, IF 9.8)
17. Wang M, **Zhou J\***, Tavares J, Pinto CA, Saraiva JA, Prieto MA, Cao H, Xiao J, Simal-Gandara J, Barba FJ\*. 2022. Applications of algae to obtain healthier meat products: A critical review on nutrients, acceptability and quality. *Critical Reviews in Food Science and Nutrition*. 10408398. <https://doi.org/10.1080/10408398.2022.2054939>. (通讯, 一区, IF 8.8)
18. Yang Fu, Jianjun Zhou, Dezheng Liu, Juan Manuel Castagnini, Francisco J. Barba, Yue Yan, Xiaorong Liu, Xuedong Wang\*. 2023. Effect of mulberry leaf polysaccharides on the physicochemical, rheological, microstructure properties and in vitro starch digestibility of wheat starch during the freeze-thaw cycles. *Food Hydrocolloids*, 109057, <https://doi.org/10.1016/j.foodhyd.2023.109057>.
19. Min Wang, Jianjun Zhou, Juan Manuel Castagnini, Houda Berrada, Francisco J. Barba\*. 2023. Pulsed electric field (PEF) recovery of biomolecules from *Chlorella*: Extract efficiency, nutrient relative value, and algae morphology analysis. *Food Chemistry*. 404, 134615. <https://doi.org/10.1016/j.foodchem.2022.134615>.
20. Wang M, Zhou J, Calvo-Lerma J, Liu Y, Collado MC, Barba FJ\*. 2022. Effects of marine bioactive compounds on gut ecology based on in vitro digestion and colonic fermentation models. *Nutrients*. 14(16), 3307. <https://doi.org/10.3390/nu14163307>.
21. Min Wang, Jianjun Zhou, Marta Selma-Royo, Jesus Simal-Gandara, Maria Carmen Collado, Francisco J. Barba\*. 2021. Potential benefits of high-added-value compounds from aquaculture and fish side streams on human gut microbiota. *Trends in Food Science & Technology*. 112, 484-494. <https://doi.org/10.1016/j.tifs.2021.04.017>.
22. Min Wang, Jianjun Zhou, Maria Carmen Collado and Francisco J. Barba\*. 2021. Accelerated solvent extraction and pulsed electric fields for valorization of rainbow trout (*Oncorhynchus mykiss*) and sole (*Dover sole*) by-products: protein content, molecular weight distribution and antioxidant potential of the extracts. *Marine Drugs*. 19(4), 207. <https://doi.org/10.3390/md19040207>.
23. Min Wang, Ángeles Morón-Ortiz, Jianjun Zhou, Ana Benítez-González, Paula Mapelli-Brahm, Antonio J. Meléndez-Martínez, Francisco J. Barba\*. 2022. Effects of pressurized liquid extraction with dimethyl sulfoxide on the recovery of carotenoids and other dietary valuable compounds from the microalgae *Spirulina*, *Chlorella* and *Phaeodactylum tricornutum*. *Food Chemistry*. 405, 134885. <https://doi.org/10.1016/j.foodchem.2022.134885>.
24. Gharibzahedi Seyed Mohammad Taghi, Barba Francisco, Zhou Jianjun, Wang Min, Altintas Zeynep. Electronic Sensor Technologies in Monitoring Quality of Tea: A Review. *Biosensors*. 12, 5. <https://doi.org/10.3390/bios12050356>.
25. Hu X.Q, Liu Q, Hu J.P, Zhou J.J, Zhang X, Peng S.Y, Peng L.J, Wang X.D. Identification and characterization of probiotic yeast isolated from digestive tract of ducks. *Poultry Science*, <https://doi.org/10.3382/ps/pey152>.
26. Muneke P.E.S, Pateiro M, Domínguez R, Zhou J, Barba F.J, Lorenzo J.M. Nutritional characterization of sea bass processing by-products. *Biomolecules* 2020, 10, 232. <https://doi.org/10.3390/biom10020232>
27. Wang, M, Zhou, J, Pallarés, N, Bäuerl, C, Collado, M.C, Dar, B.N, Barba, F.J. Role of extracts obtained from Rainbow Trout and Sole side streams by Accelerated Solvent Extraction and Pulsed Electric Fields on modulating bacterial and anti-Inflammatory activities. *Separations* 2021, 8, 187. <https://doi.org/10.3390/separations8100187>
28. Book Chapter: **Jianjun Zhou**, Min Wang, Noelia Pallarés, et al. Sterols and fat-soluble vitamins. *Food Lipids: Sources, Health*

Implications and Future Trends. <https://doi.org/10.1016/C2020-0-002811>. ISBN: 9780128233719.

29. Book Chapter: Fadila Al Khawli, Jianjun Zhou, Min Wang, et al. Mind the gap in the knowledge of the potential food applications of ultrasound based on its mechanism of action. Design and Optimization of Innovative Food Processing Techniques Assisted by Ultrasound. <https://doi.org/10.1016/B978-0-12-818275-8.00005-2>. ISBN: 9780128182758.

30. Book Chapter: Paulo E.S. Munekata, Min Wang, Jianjun Zhou, et al. Ultrasound as a preservation technique. Design and Optimization of Innovative Food Processing Techniques Assisted by Ultrasound. <https://doi.org/10.1016/B978-0-12-818275-8.00005-2>.

## B. 专利（授权）

1. 一种具有抗氧化和补硒功能的酵母产品及制备方法（CN107586719B），发明人：王学东 **周建军** 李彪 胡先勤 李芳
2. 一种系统提高仔猪免疫抗病能力促进生长的配合饲料及其制备方法（CN107494949B），发明人：王学东 沈国富 胡先勤 徐金柱 吕庆云 **周建军**
3. 一种生产高钙高锌营养鸡蛋的蛋鸡饲料及制备方法（CN107259186B），发明人：胡先勤 **周建军** 王学东 王磊 胡骏鹏 戴晋军 龚阿琼
4. 一种免发酵速冻小馒头及其制作方法（CN106418166B），王学东 胡先勤 王洋洋 **周建军** 吕庆云

## C. 成果转化

1. 博士期间本人围绕海洋和食源性植物活性成分展开的科研项目经瓦伦西亚大学技术转移与创新服务处转化累计 38835.0 欧元
2. 专利“一种系统提高仔猪免疫抗病能力促进生长的配合饲料及其制备方法”通过武汉轻工大学（乙方）转化给沈阳富士大通科技有限公司（甲方）

## D. 参与国际会议

1. 2021.10. 8th School on Pulsed Electric Field Applications in Food and Biotechnology（西班牙瓦伦西亚）
2. 2022.02. VII International Student Congress of Food Sciences and Technology（西班牙瓦伦西亚）
3. 2022.09. 16th World congress on polyphenols Applications（西班牙瓦伦西亚）
4. 2024 Cereals and Grains Conference (美国伊利诺伊州)
5. 8th PEF School on Pulsed electric field Application in Food and Biotechnology (法国贡比涅)

## E. 学术兼职

担任 Food and Humanity, Antioxidants, Processes 期刊客座编辑, 获评 Food and Humanity 期刊重要贡献特邀编辑, 受聘为 Processes 期刊专题咨询小组成员 (Topical Advisory Panel Member)。担任 Food Chemistry, Critical Reviews in Food Science and Nutrition 等 10 个期刊审稿人。

## 参与项目

1. Impacts of single kernel NIR sorting on hard winter wheat quality, flour functionality and applications. 2022.09-2025.08, 美国农业部, 28.809 万美元 (参与, 完结)
2. Soy flour as a primary and vital ingredient in gluten-free bakery products. 2019.07-2020.06, 美国堪萨斯州立大学, 3.978 万美元 (参与, 完结)
3. Aquaculture and agriculture biomass side stream proteins and bioactives for feed, fitness and health promoting nutritional Supplements. 2018.04-2022.12, 欧盟委员会, 416.3240 万欧元 (参与, 完结)
4. Development and optimization of innovative and sustainable processes for extracting oil and protein from microalgae, insects, agri-food waste, and by-products: Evaluation of biological properties. 2022.06-2025.06, 欧盟委员会, 22.2816 万欧元 (参与, 完结)
5. 全谷物轻食米系列, 七色糙米加工及品质评价关键技术。2025.09-2030.09, 湖北省横向项目, 200 万人民币 (参与, 在研)

## 获奖经历

2018.12	获金龙鱼一等企业奖学金
2019.05	获武汉轻工大学优秀硕士学位论文
2019.05	获武汉轻工大学优秀硕士毕业生
2025.09	杰出博士奖 (授予单位瓦伦西亚大学药学院, 排位 1/14, 评分 97.67/100)