



马森，博士，教授，博士生导师，河南省教育厅学术技术带头人，河南省高校科技创新人才，河南省高等学校青年骨干教师；药都“双创”英才。先后主持国家自然科学基金面上项目、青年科学基金项目、国家重点研发计划子课题、河南省高校科技创新人才项目、河南省高校青年骨干教师项目、河南省科技攻关项目等。先后获得河南省科技进步二等奖、中国粮油学会科技成果一等奖，河南省高等教育教学成果一等奖、河南省教育系统教学技能竞赛三等奖等，指导学生竞赛获得国家级、省级奖励 13 项。在国内外重要学术期刊发表论文 200 多篇，其中 SCI 论文 50 篇；授权专利 40 项，其中发明专利 20 项；参编著作 3 部，其中英文著作 2 部。

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学术兼职

《Journal of Cereal Science》编委；

《Grain & Oil Science and Technology》编委、学术编辑；

《河南工业大学学报（自然科学版）》编委；

《中国农业科学》青年编委；

《食品工业科技》青年编委；

《轻工学报》青年编委。

入选国家科技专家库、国家自然科学基金评审专家库、河南省科技专家库、河南省科协评审咨询专家库、江西省科技专家库、郑州市科技专家库、河南省“中国好粮油”计划专家库、全国研究生教育评估监测专家库等。

教育与工作经历

2012.7~至今 河南工业大学粮油食品学院 讲师、副教授、教授；

2009.9~2012.6 华南理工大学 制糖工程专业学习，工学博士；

2006.9-2009.6 广西大学 制糖工程专业学习，工学硕士；

2002.9-2006.7 河南农业大学 食品科学与工程专业学习，工学学士。

研究领域与方向

研究方向为谷物资源开发与利用，特别专注于谷物膳食纤维和蛋白、淀粉等成分的结构、相互作用和功能特性的研究，并将其用于功能性谷物产品开发。

近年来培养的研究生、本科生多名被华南理工大学、中国农业大学、江南大学等院校博士、硕士录取，或从事食品科学相关领域的研究工作。

教授课程

主讲：《食品工程原理》《食品科学专题》《杂粮加工工艺与设备》等，同时负责指导本科生毕业论文设计和研究生的科研、学习等工作。所指导的学生先后获得中国大学生自强之星、河南省青少年科技创新奖，国家奖学金、金龙鱼科技创新奖学金，河南省优秀硕士学位论文，河南工业大学十佳优良学风标兵等。

研究成果

（一）主持的科研项目

国家自然科学基金面上项目(32272249)；

国家自然科学基金青年科学基金项目(31301594)；

国家重点研发计划项目子课题（2021YFD2100903）；

河南省高校科技创新人才项目（23HASTIT033）；

河南省科技攻关计划项目（202102110143）；

河南省高等学校青年骨干教师项目（2016GGJS-070）；

河南省科技攻关计划项目（172102110008）；

河南工业大学团队基金项目（2020ZKCJ11）；

河南工业大学人才支持项目（2018RCJH08）。

(二) 代表性论文 (第一作者或通讯作者)

Sen Ma*, Zhen Wang, Huamin Liu, Li Li, Xueling Zheng, Xiaoling Tian, Binghua Sun, Xiaoxi Wang*. Supplementation of wheat flour products with wheat bran dietary fiber: Purpose, mechanisms, and challenges, *Trends in Food Science & Technology*, 2022, 123:281-289. (高被引)

Sen Ma*, Zhen Wang, Xingfeng Guo, Fengcheng Wang, Jihong Huang, Binghua Sun, Xiaoxi Wang*, Sourdough improves the quality of whole-wheat flour products: Mechanisms and challenges-A review, *Food Chemistry*, 2021, 360: 130038. (高被引)

Sen Ma*, Zhen Wang, Xiaoling Tian, Binghua Sun, Jihong Huang, Jingyao Yan, Qingdan Bao, Xiaoxi Wang*, Effect of synergistic fermentation of *Lactobacillus plantarum* and *Saccharomyces cerevisiae* on thermal properties of wheat bran dietary fiber-wheat starch system, *Food Chemistry*, 2022, 373: 131417.

Sen Ma*, Wen Han, Li Li, Xueling Zheng, Xiaoxi Wang*, The thermal stability, structural changeability, and aggregability of glutenin and gliadin proteins induced by wheat bran dietary fiber, *Food & Function*, 2019, 10(1):172-179.

Sen Ma, Li Li, Xiaoxi Wang*, Xueling Zheng, Ke Bian, Qingdan Bao, Effect of mechanically damaged starch from wheat flour on the quality of frozen dough and steamed bread, *Food Chemistry*, 2016,202:120-124.

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Wenjuan Feng, Sen Ma*, Jihong Huang, Xiaoxi Wang, Qingdan Bao. Recent advances in the technology of quick-frozen baozi-a review, *International Journal of Food Science and Technology*, 2022,57(3):1493-1507.

Yiming Lv, Sen Ma* , Jingyao Yan, Binghua Sun and Xiaoxi Wang, Effect of Heat-Moisture Treatment on the Physicochemical Properties, Structure, Morphology, and Starch Digestibility of Highland Barley (*Hordeum vulgare* L. var. nudum Hook. f) Flour, *Foods*, 2022, 11:213511.

Sen Ma, Hua-min Liu, Chong Liu, Yonghui Li, Xingxun Liu. Understanding macromolecular

interactions: key to developing new cereal-based foods, *International Journal of Food Science and Technology*, 2022,57: 1847-1848.

Wenjuan Feng, Sen Ma*, Binghua Sun, Xiaoxi Wang, Fengcheng Wang*. Black rice flflour-induced changes in gluten conformation in fresh, pre-fermented and frozen dough, *International Journal of Food Science and Technology*, 2022, 57,7445-7455.

Jingyao Yan, Yiming Lv, Sen Ma*. Wheat bran enrichment for flour products: Challenges and solutions, *Journal of Food Processing and Preservation*, 2022, 16977.

Hua-min Liu*, Chong Liu, Hong-shun Yang, Sen Ma*, Influence of cellular structure, and non-starch components, on the functional properties of starch in plant-derived foods: Editorial, *International Journal of Food Science and Technology*, 2022, 16147.

Xiaoling Tian,Xiaoxi Wang*, Zhen Wang, Binghua Sun,Fengcheng Wang,Sen Ma*. Yujuan Gu & Xiaojie Qian, Particle size distribution control during wheat milling: nutritional quality and functional basis of flflour products-a comprehensive Review, *International Journal of Food Science and Technology*, 2022, 57, 7556–7572.

Zhen Wang, Sen Ma*, Li Li, Jihong Huang*, Synergistic fermentation of *Lactobacillus plantarum* and *Saccharomyces cerevisiae* to improve the quality of wheat bran dietary fiber-steamed bread, *Food Chemistry X*, 2022, 100528.

Yujuan Gu, Xiaojie Qian , Binghua Sun , Xiaoling Tian , Xiaoxi Wang*, Sen Ma*, Effects of gelatinization degree and boiling water kneading on the rheology characteristics of gluten-free oat dough, *Food Chemistry*, 2023, 404, 134715.

Xiaoling Tian, Zhen Wang, Xiaoxi Wang*, Sen Ma*, Binghua Sun, Fengcheng Wang. Mechanochemical effects on the structural properties of wheat starch during vibration ball milling of wheat endosper, *International Journal of Biological Macromolecules*, 2022, 206:306-312.

Yujuan Gu, Xiaojie Qian, Binghua Sun, Sen Ma*, Xiaoling Tian, Xiaoxi Wang*. Nutritional composition and physicochemical properties of oat flour sieving fractions with different particle size, *LWT- Food Science and Technology*, 2022, 154,112757.

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whole oat flour, *LWT- Food Science and Technology*, 2022, 168:113828.

Jihong Huang*, Zhen Wang, Ling Fan, Sen Ma*. A review of wheat starch analyses: Methods, techniques, structure and function. *International Journal of Biological Macromolecules*, 2022, 203:130-142.

Ling Fan, Mingqian Yang, Sen Ma*, Jihong Huang*. Isolation, purification, and characterization of the globulin from wheat germ, *International Journal of Food Science and Technology*, 2022,57(3):1708-1717.

Ling Fan, Li Li, Anmin Xu, Jihong Huang*, Sen Ma*. Impact of Fermented Wheat Bran Dietary Fiber Addition on Dough Rheological Properties and Noodle Quality, *Frontiers in Nutrition*, 2022, 952525.

Zhen Wang, Sen Ma*, Li Li, Jihong Huang*. Effect of wheat bran dietary fiber on structural properties and hydrolysis behavior of gluten after synergistic fermentation of *Lactobacillus plantarum* and *Saccharomyces cerevisiae*, *Frontiers in Nutrition*, 2022,982878.

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Zhen Wang, Sen Ma*, Binghua Sun*, Fengcheng Wang, Jihong Huang, Xiaoxi Wang, Qingdan Bao. Effects of thermal properties and behavior of wheat starch and gluten on their interaction: A review, *International Journal of Biological Macromolecules*, 2021, 177:474-484.

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Xiaoling Tian, Xiaoxi Wang*, Sen Ma*, Binghua Sun, Xiaojie Qian, Yujuan Gu, Effect of different milling mechanical forces on the structures and properties of wheat flour, *International Journal of Food Science and Technology*, 2022, 57(4):1945-1953.

- Sen Ma*, Jing Zhan, Zhen Wang, et al. Effect of baked wheat germ on the rheology and fermentation properties of steamed bread dough, *Journal of food processing and preservation*, 2021, e15546.
- Sen Ma*, Zhen Wang, Ning Liu, Peng Zhou, Qingdan Bao, Xiaoxi Wang. Effect of wheat bran dietary fiber on the rheological properties of dough during fermentation and Chinese steamed bread quality, *International Journal of Food Science and Technology*, 2021, 56(4):1623-1630.
- Sen Ma*, Ning Liu, Zhen Wang, Xiaoxi Wang*, Wheat bran dietary fibre-induced changes in gluten aggregation and conformation in a dough system, *International Journal of Food Science and Technology*, 2021, 56(1): 86-92.
- Sen Ma*, Wen Han, Li Li, Xiaoxi Wang*, Small and large strain rheology of gluten and gluten-starch doughs containing wheat bran dietary fiber, *Journal of the Science of Food and Agriculture*, 2020, 100(1):177-183.
- Sen Ma*, Zhen Wang, Xueling Zheng*, Li Li, Limin Li, Na Wang, Xiaoxi Wang. Effect of different treatment methods on protein aggregation characteristics in wheat flour maturation, *International Journal of Food Science and Technology*, 2020, 55(5):2011-2019.
- Sen Ma*, Chongchong Wang, Li Li, Xiaoxi Wang*, Effects of particle size on the quality attributes of wheat flour made by the milling process, *Cereal chemistry*, 2020,97(2):172-182.
- Ning Liu, Sen Ma*, Zhen Wang, Li Li, Xueling Zheng*, Xiaoxi Wang. Influence of wheat bran dietary fiber on gluten protein structure during dough fermentation, *Journal of food processing and preservation*, 2020, 45:e15035.
- Wen Han, Sen Ma*, Li Li, Xueling Zheng, Xiaoxi Wang*, Impact of wheat bran dietary fiber on gluten and gluten-starch microstructure formation in dough, *Food Hydrocolloids*, 2019,95:292-297.
- Wen Han, Sen Ma*, Li Li, Xueling Zheng, Xiaoxi Wang*, Gluten aggregation behavior in gluten and gluten-starch doughs after wheat bran dietary fiber addition, *LWT*, 2019, 106:1-6.

Jing Zhan, Sen Ma*, Xiaoxi Wang*, Li Li, Xueling Zheng, Effect of baked wheat germ on gluten protein network in steamed bread dough, *International Journal of Food Science and Technology*, 2019, 54(10):2839-2846.

Na Wang, Sen Ma*, Li Li, Xueling Zheng*. Aggregation characteristics of protein during wheat flour maturation, *Journal of the Science of Food and Agriculture*, 2019,99(2):719-725.

Wen Han, Sen Ma*, Li Li, Xueling Zheng, Xiaoxi Wang*, Rheological properties of gluten and gluten-starch model doughs containing wheat bran dietary fiber, *International Journal of Food Science and Technology*, 2018,53(12):2650-2656.

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Ling Fan, Sen Ma*, Xiaoxi Wang, Xueling Zheng, Improvement of Chinese noodle quality by supplementation with arabinoxylans from wheat bran, *International Journal of Food Science and Technology*, 2016,51(3):602-608.

Li Li, Sen Ma*, Ling Fan, Chi Zhang, Xiaoqing Pu, Xueling Zheng, Xiaoxi Wang*, The influence of ultrasonic modification on arabinoxylans properties obtained from wheat bran, *International Journal of Food Science and Technology*, 2016,51(11):2338-2344.

Sen Ma, Xiaoxi Wang*, Xueling Zheng, Shuangqi Tian, Chong Liu, Li Li, Yanfang Ding, Improvement of the quality of steamed bread by supplementation of wheat germ from milling process, *Journal of cereal science*, 2014,60(3):589-594.

(三) 专著

(1) 《谷物化学》，科学出版社，2017.

(2) 《Dietary Fiber: Properties, Recovery, and Applications》，Academic press of Elsevier, 2019

(3) 《Trends in Wheat and Bread》，Academic press of Elsevier, 2021

(四) 授权发明专利

- (1) 一种青稞半干面生产工艺, ZL 202110187176.2
- (2) 一种低 GI 青稞半干面的制作方法及装置, ZL202110035355.4
- (3) 一种谷物柔性脱皮机, ZL202210075280.7
- (4) 一种利用小麦淀粉废水制备淀粉胶的方法, ZL202210478932.1
- (5) 一种含膳食纤维的液态乳制品的制备设备, ZL202210048258.3
- (6) 一种可溶性膳食纤维提取装置, ZL201910264961.6
- (7) 一种全自动裸燕麦炒制机, ZL201910081257.7
- (8) 一种高膳食纤维食品混合加工设备,ZL201910265044.X
- (9) 一种老面面团快速发酵装置, ZL202011310914.X
- (10) 一种麦麸糊粉层的分离提取装置, ZL201910395117.7
- (11) 一种高膳食纤维面条制作设备, ZL201811327534.X
- (12) 一种适用于工业生产的膳食纤维提取装置 ZL 201811429207.5
- (13) 一种膳食纤维烘干装置 ZL 201910265042.0
- (14) 一种小麦糊粉层剥离装置, ZL201910718840.4
- (15) 一种适用于冷冻面团制品的生产设备, ZL202010842093.8
- (16) 一种适口性改性膳食纤维, ZL201811328459.9
- (17) 一种富含膳食纤维的食品 3D 打印材料, ZL201811328045.6
- (18) 一种用于食品加工的 3D 打印机, ZL201811326540.3
- (19) 一种高凝胶性变性淀粉的制备方法, ZL 201810256326.9
- (20) 一种便于清洁的食品 3D 打印机, ZL 201811327490.0
- (21) 一种小麦高效研磨加工装置, ZL 201810412156.9
- (22) 一种麸皮的湿热处理方法, ZL201510164389.8

奖励与荣誉

- (1) 河南省科技进步二等奖
- (2) 中国粮油学会科学技术一等奖
- (3) 河南省优秀硕士学位论文指导教师 2 次
- (4) 第十七届“挑战杯”全国大学生课外学术科技作品竞赛三等奖

- (5) 第十三届“挑战杯”中国大学生创业计划竞赛铜奖
- (6) 河南省“挑战杯”竞赛特等奖 2 次、一等奖 1 次、二等奖 1 次
- (7) 河南省“互联网+”创新创业大赛一等奖、二等奖
- (8) 全国大学生生命科学竞赛创业类一等奖 1 次、二等奖 3 次
- (9) 河南工业大学第四届研究生优秀指导教师
- (10) 河南省高等教育教学成果一等奖；
- (11) 河南省教育系统教学技能竞赛三等奖；
- (12) 河南省教育厅科技成果一等奖、二等奖。

实验室和科研团队简介

团队致力于谷物加工技术与应用、杂粮加工理论与技术、谷物加工副产物综合利用领域，促进我国谷物加工技术创新体体系的建设和人才培养。