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Areas of Expertise: Food physical processing; Frozen prepared food

2017-Present Vice Director, School of Food Science and Technology, Jiangnan University, PRC

2017-Present Professor, Jiangnan University, PRC

2015-2017 Postdoctor, The University of Hong Kong, PRC

2012-2017 Lecturer, Associate Professor, Jiangnan University, PRC

2008-2012 PhD Candidate, Jiangnan University, PRC

2005-2008 Master Degree Candidate, Jiangnan University, PRC

2001-2005 Undergraduate Student, Jiangnan University, PRC

Research of Special Interest

Prof. Fan is mainly engaged in the basic research and technology development in food physical processing and frozen prepared food.

The main research focuses on the mechanism of electromagnetic response of food, and the study and development of processing technology. The research interest is the basic research and technology development of microwave for industrial and civil use, namely the mechanism involved in the effect of microwave on food raw materials and composition, the safety evaluation of microwave processing, heat and mass transfer rules and nutrients changes during microwave reheating, research and application of the combination of microwave processing technology for frozen prepared aquatic and cereal food.

Publications *Correspondence Author

Prof. Fan has published 50 SCI papers in the recent five years. Some of them are listed as follows:

Cao HW, Jiao XD, Fan DM*, Huang JL, Zhao JX, Yan BW, Zhou WG, Zhang WH, Ye WJ, Zhang H. 2019. Catalytic effect of transglutaminase mediated by myofibrillar protein crosslinking under microwave irradiation. *Food Chemistry*, 284(6): 45-52.

Cao HW, Fan DM*, Jiao XD, Huang JL, Zhao JX, Yan BW, Zhou WG, Zhang WH, Ye WJ, Zhang H. 2019. Importance of thickness in electromagnetic properties and gel characteristics of surimi during microwave heating. *Journal of Food Engineering*, 248(5): 80-88.

Zhang NN, Fan DM*, Zhao YL, Wu YJ, Yan BW, Zhao JX, Wang MF, Zhang H. 2019. Dielectric loss mediated promotion of microwave heating in the Maillard reaction. *LWT-Food Science and Technology*, 101: 559-566.

Fan DM#, Li LJ#, Zhang NN, Zhao YL*, Cheng KW, Yan BW, Wang Q, Zhao JX, Wang MF*, Zhang H. 2018. A comparison of mutagenic PhIP and beneficial 8-C-(E-phenylethenyl) quercetin and 6-C-(E-phenylethenyl) quercetin formation under microwave and conventional heating. *Food & Function*, 9: 3853-3859.

Cao HW, Fan DM*, Jiao XD, Huang JL, Zhao JX, Yan BW, Zhou WG, Zhang WH, Ye WJ, Zhang H, Chen W. 2018. Intervention of transglutaminase in surimi gel under microwave irradiation. *Food Chemistry*, 268(12): 378-385.

Cao HW, Fan DM*, Jiao XD, Huang JL, Zhao JX, Yan BW, Zhou WG, Zhang WH, Zhang H. 2018. Effects of microwave combined with conduction heating on surimi quality and morphology. *Journal of Food Engineering*, 228(7): 1-11.

Cao HW, Fan DM*, Jiao XD, Huang JL, Zhao JX, Yan BW, Zhou WG, Zhang WH, Zhang H. 2018. Heating surimi products using microwave combined with steam methods: Study on energy saving and quality. *Innovative Food Science & Emerging Technologies*, 47(6): 231-240.

Fan DM, Wang LY, Zhang NN, Xiong L, Huang LL, Zhao JX, Wang MF*, Zhang H*. 2017. Full-time response of starch subjected to microwave heating. *Scientific Reports*, 7: 3967.

Fan DM, Gao YS, Chen YF, Wang MF*, Gu XH, Wang LY, Shen HJ, Lian HZ, Zhao JX, Zhang H*. 2017. Non-additive response of starch systems in different hydration states: A study of microwave-absorbing properties. *Innovative Food Science & Emerging Technologies*, 44(12): 103-108.

Chen M, Fan DM*, Huang LL, Gao YS, Huang JL, Zhao JX, Zhang H. 2017. A new approach to microwave food research: Analyzing the electromagnetic response of basic amino acids. *Innovative Food Science & Emerging Technologies*, 41(6): 100-108.

Chen M, Fan DM*, Li TF, Yan BW, Gao YS, Zhao JX, Zhang H. 2017. Synergistic bactericidal effects of basic amino acids and microwave treatment on *Escherichia coli*. *LWT-Food Science and Technology*, 84: 99-105.

Zhang NN, Fan DM*, Chen M, Chen YF, Huang JL, Zhou WG, Zhang WH, Zhao JX, Zhang H, Chen W. 2017. Concentration-related microwave heating process electromagnetic interference of Maillard reaction substrates (glucose and lysine). *RSC Advances*, 7: 24382-24386.

Fan DM, Liu YX, Hu B, Lin LF, Huang LL, Wang LY, Zhao JX, Zhang H, Chen W*. 2016. Influence of microwave parameters and water activity on radical generation in rice starch. *Food Chemistry*, 196(4): 34-41.

Fan DM, Shen HJ, Huang LL, Gao YS, Lian HZ, Zhao JX, Zhang H, Chen W*. 2015. Microwave-Absorbing Properties of Rice Starch. *Polymers*, 7(9): 1895-1904.

Fan DM, Wang LY, Chen W*, Ma SY, Ma WR, Liu XM, Zhao JX, Zhang H. 2014. Effect of Microwave on Lamellar Parameters of Rice Starch through Small-angle X-ray Scattering. *Food Hydrocolloids*, 35(3): 620-626.

Fan DM, Ma SY, Wang LY, Zhao HF, Zhao JX, Zhang H, Chen W*. 2013. ¹H NMR studies of starch-water interactions during microwave heating. *Carbohydrate Polymers*, 97(2): 406-412.

Fan DM, Ma WR, Wang LY, Huang JL, Zhang FM, Zhao JX, Zhang H, Chen W*. 2013. Determining the effects of microwave heating on the ordered structures of rice starch by NMR. *Carbohydrate Polymers*, 92(2): 1395-1401.

Fan DM, Wang LY, Ma SY, Ma WR, Zhao JX, Zhang H, Chen W*. 2013. Structural variation of rice starch in response to temperature during microwave heating before gelatinization. *Carbohydrate Polymers*, 92(2): 1395-1401.

Achievements and Honors

2018 National Science Fund for Excellent Young Scholars

2018 National Young and Middle-aged Leading Science and Technology Innovation Talents, Ministry of Science and Technology of China

2017 Science and Technology Innovation Award-- outstanding youth award, Chinese Institute of Food Science and Technology

2016 Young Scientist Award, The International Union of Food Science and Technology (IUFoST)

2015 Second Class Award, Science and Technology Progress of Jiangsu Province

2015 Outstanding Doctorate Dissertations of Jiangsu Province

2014 The sixteenth Patent Excellence Award of China

2012 Second Class Award, Science and Technology Progress of National Light Industry Federation

2011 China Youth Science and Technology Innovation Award