

Research Team on Food Drying Technology, College of Food and Bioengineering, Henan University of Science & Technology



Prof. Ren Guangyue

The research team of food drying technology has closely cooperated with industries since the 1980s and has borne fruitful outcomes. The team focuses on featured agricultural products in Henan Province, and carried out in-depth study in drying theory, technology and equipment. Recently, some important progresses have been achieved on drying theory and equipment for grain, Chinese medicinal herb and other agricultural products. What is more, their researches on new freeze drying with high efficiency including microwave freeze drying, atmospheric freeze drying and microscale drying are in a leading position in international drying fields.

Research Team: Up to date, the team includes nine staff members, among which there are four professors (Prof. Zhu Wenxue, Ren Guangyue, Zhang Zhongxin, and Luo Denglin), four associate professors (Dr. Duan Xu, Dr. Liu Yunhong, Dr. Luo Lei, and Dr. Liu Lili). Eight of them possess doctorate, one is doctoral student supervisor, one is the outstanding expert in Henan Province, one is the across-century academic and technical leader in Henan Province, two are innovative talents in Henan Province, one is the distinguished professor in Henan University of Science & Technology, and three are outstanding experts and academic leaders at Luoyang City-level.

Scientific research: In recent three years, the research team obtained and completed eight national scientific research projects, including six projects funded by Natural Science Foundation of China as follows:

Anaerobic hot air mechanism of carrot and the pathway and mechanism of renieratene loss led by Prof. Zhu Wenxue as Principal Investigator (PI);

Drying mechanism of atmospheric freeze drying for Chinese yam based on vortex tube refrigeration effect and its drying behavior controlled by Ren Guangyue as PI;

Microwave freeze drying behavior and mechanism of fruit and vegetable under dielectric property effect led by Duan Xu as PI;

Wet porous materials drying using hot-air drying combined with power ultrasound and drying-enhanced mechanism led by Luo Denglin as PI;

Study on mechanism of enzymatic browning and pathway of phenolic oxidation recession in honeysuckle drying process led by Luo Lei;

Study on enzymatic oxidation restrain mechanism of vacuum far-infrared radiation drying of Flos Lonicerae led by Liu Yunhong as PI;

The team also undertook and completed one Science and Technology Projects of Agriculture Ministry of China ("safety production and origin processing technology of traditional Chinese medicinal materials in Dabie Mountain area"); six local government funded scientific research projects with one major science and technology projects in Henan Province, five research and demonstration projects for the key drying technology and equipment of grain post-harvest processing); ten enterprises and institutions entrusted projects. Six scientific payoffs awards were obtained at the province and ministry level, twenty-six papers were published and indexed by SCI/EI/ISTP, eighty-six papers were published in domestic Chinese Core journals, eight academic monographs were published, and sixteen patents for invention were authorized.

Talent cultivation: In recent three years, twenty-two graduate students received master's degrees, six doctoral candidates graduated, and twenty-four graduate students are studying at the college.

Research conditions: The team has a laboratory with building area of 1 000 m², 28 sets of instruments and equipment with each value of over 100 000 Yuan, and the total value of instruments is 18 850 000 Yuan.



College of Food and Bioengineering, Henan University of Science & Technology



Prof. Zhu Wenxue

The development of College of Food and Bioengineering could be traced back to 1984. At present, the college has five bachelor's degree programs, including Food Science and Engineering, Food Quality and Safety, Bioengineering, Dairy Engineering, and Biopharming. There are nearly 2 000 undergraduates and 150 graduate students in the college.

There are fourteen disciplines authorized master degree in Food Science and Engineering, Biology, Processing and Storage of Agriculture Products, Food Science, Grain-oil and Vegetable Protein Engineering, Processing and Storage of Aquatic Products, Biochemistry and Molecular Biology, Microbiology, Biophysicist, Food Machinery and Engineering, Nutrition and Food Safety, Fermentation Technology, and Food Biotechnology. The discipline of "Processing and Storage of Agriculture Products" is featured with distinguished professor position in Henan Province. The discipline of "Food Science and Engineering" is selected as experimental specialty for characteristic and comprehensive reform in Henan province. The "teaching team of curriculum group in the direction of food science and engineering" is a province-level teaching team. The course of "Food Technology" is a province-level high quality course and quality resource sharing course.

By now, the college has 94 staff members, including one distinguished professor of Henan Province, thirty-eight professors and deputy professors, two doctoral student supervisors, twenty-nine master student supervisors, fifty-two teachers with doctoral degrees, one of the outstanding experts in Henan province, two of the academic and technical leaders across the century in Henan Province, two of the innovative talents of Henan Province, five of the Luoyang city level outstanding experts and academic leaders.

The college has an experimental teaching model center of food processing and security in Henan Province and equipped with fourteen laboratories, such as Food Engineering Principles Laboratory, Fruit and Vegetable Processing Laboratory, Baking Laboratory, Microorganism Laboratory, etc. In addition, "the Laboratory of Deep Processing Technology for Agriculture Products" is a key discipline opening laboratory in Henan Province. The laboratories have a building area of 13 000 m². There are over 2 600 instruments and equipments and the total value of instrument and equipment reached 48 500 000 Yuan, with over large-scale instruments and equipment. In recent three years, the college has undertaken over 30 projects such as "863 Plan", National "Eleventh-five" Key Project, National Nature and Science Funds Project. In addition, the college obtained more than ten provincial and ministerial-level science and technology progress awards, published more than 700 academic papers, 30 monographs and 20 textbooks, and acquired more than 50 authorized patents.



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