留学硕士研究生培养方案英文版

Master Degree Program in Food Science and Engineering

Discipline code: 0832

Ⅰ. General introduction of the discipline and the research fields

Our discipline established the Master program in Agricultural Products Processing in 1986, the first Ph.D. program in Agricultural Products Processing Engineering in China in 1993, Post-doctoral program in Food Science and Engineering firstly in China in 1998, the first-grade Ph.D. program in Food Science & Engineering in 2003, Master program in Biochemistry and Molecular Biology in 2003, the second-grade Ph.D. program in Food Nutrition & Safety in 2006, Master program in Food Engineering (Professional degree) in 1998. Its discipline of Processing & Storage Engineering of Agricultural Products was Jiangsu Provincial Key Discipline during the 9th, 10th, 11th and 12th Five-Year Plans. The teaching team of this discipline have won the Jiangsu Excellent Echelon of Discipline twice. A Project Funded by the Priority Academic Program Development of Jiangsu Higher Education Institutions was acquired in 2014. One Doctoral dissertation was ranked among the China's 100 Excellent Doctoral Dissertations in 2008 and one other was nominated the China's 100 Excellent Doctoral Dissertations in 2010. And five others were awarded as Jiangsu Excellent Doctoral Dissertations.

The Master Degree Program in Food Science and Engineering focuses on:

1. Rapid & nondestructive detection technology & equipment for quality of food and agricultural products
2. Food physical processing technology & equipment
3. Food nutrition & safety
4. Food biological technology & equipment

Ⅱ. Goal and objectives

The school of Food and Biological Engineering aims to equip students with the ability to apply their expertise to food engineering disciplines. In order to achieve the goal of this major, following objectives are to be accomplished by the time the candidate completes

the 3-5 years courses.

The Master Degree Program in Food Science and Engineering focuses on:

A. With correct outlook on life and values, good moral character, strict style of study, strong sense of enterprise and pioneering spirit.

B. With firm grasp of the basis theory of food science and engineering, professional knowledge and experimental skills, professional development and frontiers; being competent of reading and writing scientific papers; with the ability to independently carry out scientific research work, being competent in the specialized field of teaching, research, and food-related science and technology management; with new insights in scientific or specialized technique.

C. With physical and mental health.

Ⅲ. Study duration and the way to cultivate

The graduate students for Food Science and Engineering major should finish the required course credits that must be at least a total of 26 credits, and the credits for degree courses should be more than 14. The completion of these courses is usually within 1 to 2 years, while the additional 2 to 3 years is used to complete the dissertation research and thesis oral defense. Moreover, every student is also required to commit several presentations/lectures that are closely relevant to his/her research project and attend academic conferences/workshops at least 10 times.

Ⅵ. Requirement for the course credits

Course Category		Course name	Credits	Term	School by which Courses opened	Type of the Courses	Remark
Degree Courses	**Public Degree Courses**	Overview of China	3	1	Overseas Education College	English-taught course	Compulsory
		Chinese Ⅰ-Ⅱ	4	1,2	Language & Culture Center	English-taught course	
	Fundamental &Theoretical Courses	Numerical Analysis	2	1	School of Science	English-taught course	At least 4 credits, at least one course Math
		Mathematical Statistics	2	1	School of Finance	English-taught course	
		Matrix	2	1	School of Science	English-taught course	
		Food Microbiology	2	1	School of Food and Biological Engineering	English-taught course	

		Advanced Food Chemistry	2	1	School of Food and Biological Engineering	English-taught course	
		Novel Instrumental Analysis	3	1	School of Food and Biological Engineering	English-taught course/ experimental platform courses	
	Core Specialized Degree Courses	Food physics Processing	3	1	School of Food and Biological Engineering	English-taught course	At least one course
		Advanced Biochemistry	3	1	School of Food and Biological Engineering	English-taught course	
Non-degree courses	**Special Elective Courses**	Food Physics	2	1,2	School of Food and Biological Engineering	English-taught course/ experimental platform courses	At least four course
		Frontier in Food Biotechnology	2	1,2	School of Food and Biological Engineering	English-taught course/Frontier Lecture	
		Chinese Food Culture	2	1,2	School of Food and Biological Engineering	English-taught course/Frontier Lecture	
		Frontier development for Food Nondestructive Detection Techniques	2	1,2	School of Food and Biological Engineering	English-taught course/Frontier Lecture	
		Introduction to Food Science	2	1,2	School of Food and Biological Engineering	English-taught course	
		Experimental design and data analysis	2	1,2	School of Food and Biological Engineering	English-taught course	
		Bio-separations and Extraction Techniquein Food Industry	2	1,2	School of Food and Biological Engineering	English-taught course/ experimental platform courses	
		Advanced Development of Food Nutrition and Safety	2	1,2	School of Food and Biological Engineering	English-taught course/Frontier Lecture	
		Digital Image Processing	2	1,2	School of Food and Biological Engineering	English-taught course	

		Spectral analysis of food	2	1,2	School of Food and Biological Engineering	English-taught course	
		Food Fermentation Technology	2	1,2	School of Food and Biological Engineering	English-taught course	
	Public Elective Courses	All courses in all discipline					Selective

Type of the courses: English-taught course or experimental platform courses

Ⅴ.Credits requirement for the practice

The postgraduate students should take part in the academic/practical activities and gain practical credits. Only those who have met the practical requirements (12credits) are eligible to submit the thesis.

1. Academic Activities (3 credits)

In order to broaden academic views of postgraduate students, they should take part in 'lectures on academic ethics' and academic seminar/report from Sino-foreign well-known experts, the academic report should be finished after the seminar. Postgraduate students are encouraged to attend international and high level national academic conference and present their research. The grade shall be assessed by the supervisor(s).

2. Literature Reading (2 credits)

The list of journals or classic books helps postgraduate student train the ability of acquiring knowledge in the domain of their research fields. At least 15 academic papers from research areas are desired to be submitted prior to the proposal presentation.

3. Seminar (5 credits)

Each student has to present seminar(s) within the faculty on topics such as literature review and research progress at least once per academic term, total more than 4 times. More than once seminar should be finished within the faculty publicly.

4. Practices (1 credit)

Each full-time postgraduate student should take part in practices including teaching assistant, production practice or social investigation at least one month.

6. Others (6 credits)

To encourage postgraduate student to participate in innovational activities related research areas, as well as degree thesis.

Ⅵ. Advisory Committee and Supervisory

The postgraduate students should be directed by a committee panel containing several qualified co-advisors/committee members in order to ensure the high quality of M.Sc. program. The Advisory Committee initially consists of at least 5 members of the Graduate Faculty, including the Major Advisor, who acts as the chair. The committee should be in charge of the following tasks:

1) Help the student to choose appropriate courses, and provide consultation on how to improve the level of lecture delivery;

2) Organize the Thesis Proposal Presentation;

3) Check the thesis before being submitted.

The committee should be established by the end of the second semester of the student's graduate career.

Ⅶ. Dissertation

The level of the quality of postgraduate thesis is a comprehensive measure of postgraduate training quality and academic standards as an important symbol. Dissertation can be basic research, applied basic research, and Engineering application research, particularly to strengthen the study of the frontier disciplines and the field of cross interdisciplinary penetration, participate in a major issue to solve the forefront of high-tech development, put forward a new concept, new theories, new methods, new technologies； Participate in solving the major theoretical and engineering problems of national economic construction, and, as far as possible, participate in an important national research project which is undertaken by the supervisor or School of Food and Biological Engineering. The thesis should reflect that the author has grasped solid and wide basic theory as well as systemic expertise in this discipline. The dissertation should normally include two aspects of theoretical analysis and experimental research. It also should focus on the depth and breadth of content, highlighting the innovative and original insights or open up new areas. Dissertation should be, under the guidance of an instructor, completed by the postgraduate students himself or herself to indicate that the author has the ability to undertake independent scientific research or to be independently responsible for the specialized technical work.

including：

（1）Topics of the report

After enrollment, the postgraduate student should know his research direction clearly,

under the guidance of the instructor, and participate in scientific research. Usually after passing the qualification exam within the second school year, through the collection and read literature, the postgraduate. student should carry out research and experimental work, complete the report about topics of dissertation, and employ experts of the relevant disciplines and evaluate the report of the topics. After the passage of the deliberations of the topics of the report, the postgraduate student prepares the implementation plan of thesis under the guidance of the instructor. Topics of reports and papers on the work plan are triplicate. One is saved by the supervisor, another by the student, and the third by College within 2 weeks after the passing. In the process of dissertation work, allowing for partial adjustment of the work plan, however, in principle, the titles are not allowed to change. If there are special reasons that support to change the title, candidate for M.Sc. degree should write an application himself or herself, and signing an opinion on the application by your major supervisor, recorded by the College Graduate Office, and timely redo report about topics of dissertation.

（2）Publications and Research Achievements

The postgraduate students have to obtain some research achievements during their studies and they are required to publish academic paper.

（3）Thesis Writing

The thesis should be written by the candidate independently under the guidance of his/her supervisor. The format of the thesis can be found in <Requirements of Thesis Format in Jiangsu University>.

（4）Thesis Exam and Oral Defense

The requirements for thesis exam and oral defense can be found in <Regulations of conferring academic degrees in Jiangsu University> and <Interim Provisions of "Double-Blind Peer Review" for Postgraduate Student's Thesis in Jiangsu University>.

Ⅷ. Other issues and requirements

Please refer to <Academic Master's Degree Program in Jiangsu University (General Regulations)> and other requirements of the University.

Ⅹ. Financial assistance

Applicants from a foreign country can apply a variety of Chinese government scholarship that may fully or partially support your degree study at JU. For further information regarding these scholarships provided by Chinese government, please surf on the website

of Overseas Education College (OEC), JU, at http://oec.ujs.edu.cn/pub/eng/Scholarship/GS/. In addition to apply these funding supports, School of Food and Biological Engineering in JU also provides scholarship for PhD graduate students, with which the total amount of the funding assistance may be possibly updated, depending on the applicants' performance in academic research, at http://asp1.ujs.edu.cn/sp/.

Attachments

（Ⅰ）. Guide for thesis and dissertation research proposal and plan of study

School of Food and Biological Engineering

, Jiangsu University

Zhenjiang, Jiangsu Province

(Date)

TITLE: A brief, clear, specific designation of the subject of the research. The title, used by itself, should give a good indication of the project.

OBJECTIVES: A clear, complete, and logically arranged statement of specific objectives of the project. If several objectives are proposed, they must be closely related. List them as 1, 2, 3, etc.

JUSTIFICATION: Should present the motivation and importance of the research.

PREVIOUS WORK AND PRESENT OUTLOOK: A brief summary covering pertinent previous research on the problem, citing important and recent publications, the status of current research, and additional information needed, to which the project is expected to contribute. This review will help to determine work already accomplished.

PROCEDURE: A statement of essential work plans and methods to be used to attain each of the stated objectives. The procedure should correspond with objectives, and follow the same order. Phases of the work to be undertaken should be designated.

RESEACH METHOD: should specify the research method of the project, if the theoretical analysis is conducted, the basic model description should be given, if the empirical study is conducted, the possible source of data should be indicated.

PROBABLE DURATION: An estimate of the maximum time likely to be required to complete research and publish results.

LITERATURE CITED: List important and recent publications involving this field of work.

（Ⅱ）.The directory of mainly classic books needed to be read.

1. Modern Food Microbiology, Edited by James M. Jay, Martin J. Loessner, David A. Golden, Published in 2005 Springer.
2. Industrial Biotechnology: Sustainable Growth and Economic Success, Edited by Wim Soetaert and Erick J. Vandamme, Published in 2010 WILEY-VCH Verlag GmbH & Co. KGaA,Weinheim.
3. Modern Industrial Microbiology and Biotechnology, Edited by Ndoka Okafor. Published in 2007 Science Publishers.
4. Owen R. Fennema. Food Chemistry. New York, Marcel Dekker, Inc., 1996
5. Belitz, H. D., Grosch, W. Food Chemistry. New Yolk: Springer verlag, Berlin Heidelberg, 1999
6. Food physics, Southeast University press, Tukan
7. Principles and Techniques of Practical Biochemistry. Keith Wilson and John Walker, Cambridge Press, 2000
8. Food Biotechnology (Advances in Biochemical Engineering/ Biotechnology), Edited by Ulf Stahl, Published in 2008 by Springer Press.
9. Fermentation Processes Engineering in the Food Industry, Edited by Carlos Ricardo Soccol, Ashok Pandey and Christian Larroche. Published in 2013 by CRC Press.
10. Syed S. H. Rizvi. Separation, extraction and concentration processes in the food, beverage and
11. nutraceutical industries. Woodhead Publishing Limited, 2010
12. Anthony Pometto. Food Biotechnology (Second Edition).Taylor & Francis Group, 2006
13. Howard Q. Zhang. Nonthermal Processing Technologies for Food. John Wiley &Sons Ltd, 2011
14. Nondestructive Detection Techniques for Food Quality, Edited by Chen Bin, Published in 2004 by Chemical Industry Press.
15. Chemometrics Methods, Edited by Xu Lu and Shao XueGuang, Published in 2004 by Science Press.
16. Modern detection technologies in the Food Industry, Edited by Zhao JieWen and Sun Yong Hai, Published in 2008 by Chinese Light Industry Press.

17. Rick Parker. Introduction to Food Science[M]. Beijing: China Light Industry Press, 2005
18. Design and analysis of experiments, Douglas C. Montgomery
19. Pieter Walstra. Physical Chemistry of Foods. Marcel Dekker, Inc. New York, NY, 2003
20. Niir Board. Modern Technology of Agro Processing and Agricultural Waste Products. National Institute of Industrial Re, 2000
21. Carl W. Hall. Processing Equipment for Agricultural Products. Avi Publishing Co Inc., 1963
22. Functional foods, Yaoguang Zhong, Chemical industry press, 2011.
23. The science of functional foods, Jianxian Zheng, China light industry press, 2003.
24. Research and application of functional food, Moucheng Wu, Chemical industry press, 2004.
25. Yin shian, Wang zhixu, etc. Translation. «Present knowledge in nutrition» Beijing: Chemical Industrial Press, 2004
26. Liu zhigao, Etc. Edit. «Food Nutriology». Beijing：China Light Industry Press, 2004
27. Digital Image Processing. (Third Edition) Rafael C. Gonzalez & Richard E. WoodsPublishing House of Electronics Industry
28. Digital Image Processing. Kenneth R. Castleman 2011
29. Handbook of Instrumental Techniques for Analytical Chemistry, by Frank A. Settle
30. Principles and Practice of Analytical Chemistry, By F. W. Fifield, D. Kealey,
31. Modern Analytical Chemistry, By David T Harvey
32. ractical Fermentation Technology, Edited by Brian McNeil and Linda M. Harvey, Published in 2008 John Wiley & Sons, Ltd.
33. Harry T. Lawless, Hildegarde Heymann. Sensory Evaluation of Food. Springer, 2010.
34. Herbert Stone, Rebecca Bleibaum, Heather A. Thomas. Sensory Evaluation Practices. Elsevier Inc., 1985.
35. Schmidt, R. H.; Rodrick, G. E., Food Safety Handbook. John Wiley & Sons: 2003.
36. Hutter, B. M., Managing Food Safety and Hygiene: Governance and Regulation as Risk Management. Edward Elgar Publishing: 2011.
37. Knechtges, P. L., Food Safety: Theory and Practice. Jones & Bartlett Publishers: 2011.
38. D'Mello, J. F., Food Safety: Contaminants and Toxins. CABI: 2003.
39. Wu Y, Chen Y. Food Safety in China. J Epidemiol Community Health. 2013; 67(6): 478-9.

40. Yotova, L.; Grabchev, I.; Betcheva, R.; Marinkova, D., Smart Biosensors for Determination of Mycotoxines. In Detection of Bacteria, Viruses, Parasites and Fungi, Springer: 2010; pp 389-414.
41. Yongning Wu, Present Knowledge in Food Safety. Chemical Industry Press: 2005.

(Ⅲ). The directory of mainly professional academic journals needed to be read.

1. Advances in Food Science.
2. Analytical Methods
3. Agricultural and Food Science
4. Agro Food Industry Hi-tech
5. Annual Review of Food Science and Technology
6. British Food Journal
7. Comprehensive Reviews in Food Science and Food Safety
8. Food & Nutrition Research
9. European Food Research and Technology
10. Cereal Chemistry
11. Journal of Agricultural and Food Chemistry
12. American Journal of Food Science and Technology
13. Food Biotechnology
14. Food Microbiology
15. Food ,Nutrition and Agriculture
16. International Journal Food Science and Nutrition
17. International Journal of Computer Vision
18. International Journal of Robotics Research
19. Journal of The Japanese Society for Food Science and Technology-Nippon Shok
20. Journal of Cereal Science
21. Journal of Dairy Science
22. Journal of Texture Studies
23. Journal of the Science of Food and Agriculture

24. Journal of the American Oil Chemists' Society, with INFORM (International News on Fats, Oils & Related Materials)
25. Transaction of the ASAE
26. Transaction of the American Society of Agricultural Engineering
27. Food Packaging Testing Methods and Applications
28. Food Product Development
29. Journal of Food Nutrition
30. Journal of Food Processing
31. Journal of Food Quality
32. Computer Vision and Image Understanding
33. Food Analytical Methods
34. Food and Bioprocess Technology
35. Food Engineering Reviews
36. Innovative Food Science & Emerging Technologies
37. Journal of Food Composition and Analysis
38. Journal of Food and Nutrition Research
39. Journal of Food Process Engineering
40. Journal of Food Processing and Preservation
41. Journal of Food Quality
42. Journal of the Science of Food and Agriculture
43. Trends in Food Science & Technology
44. Journal of Food Biochemistry
45. Journal of Food Safety
46. Journal of Food Science
47. Journal of Food Chemistry
48. Food Research International
49. Czech Journal of Food Science

(Ⅳ).Course Content

1. Food Microbiology

Goal

The general goal of the course is to cover the interaction of microorganisms and food in relation to food borne diseases, food spoilage and even food bio processing. Food technologies to render and keep foods safe will be addressed in details. Most up-to-date analytical techniques for food biological safety monitoring with local relevance will be discussed in details.

Essential Objectives

a. Describe the characteristics and sources of predominant microorganisms in food.

b. Describe the causative agents, suspect foods, signs and symptoms of some major food borne diseases, with an emphasis onstaphylococcal food poisoning, salmonellosis,cholera, E. coligastroenteritis, hepatitis, etc.

c.Apply appropriateprinciples and approaches for the detection of variouspathogenicmicroorganismse.g.Escherichiacoli, Bacilluscereus, Campylobacter,Listeria monocytogenes,Salmonella,Clostridium,Vibrio and Statphylococcusaureus.

d. Compare and contrast the pathological effects and detectionmethods for common foodindicator microorganisms, food borne pathogens e.g. fungi, viruses and parasites.

Content Coverage

Overviews of Microorganisms Associated with Food; Microbial Food borne Diseases; Principles of Microbial Detection in Food.

Evaluation:

_Oral presentation: an oral presentation focused on food microbiology should be presented by each student.

_ Assessment by the review paper related to food microbiology prepared by each student.

2. Advanced Food Chemistry

Goal

The goals of Advanced Food Chemistry are to (1) introduce the structure, physical and chemical properties and functions of the main components in foods, (2) reveal the changes of these components during food processing and storage, (3) represent the effects of these changes on the food nutritional

quality, sensory quality, and safety, (4) reveal the interactions between these components and changes of these components during food processing and storage, and (5) provide a theoretical basis on food color, aroma, taste, texture, nutrition and safety.

Essential Objectives

a. Understand the history, research content, and the important role in food industry

b. Master the structure, physical and chemical properties and functions of the main components in foods such as water and ice, carbohydrates, lipids, amino acids and proteins, vitamins, minerals.

c. Understand the changes of these components during food processing and storage, and the impact of these changes on the food quality

Content Coverage

The structure, properties and functions of the main components in foods

The changes of these components during food processing and storage, and the impact of these changes on the food quality

Evaluation:

_ open-book examination

_Score= 10%* attendance +90%* examination.

3. Novel Instrumental Analysis

Goal

At the completion of this course the student should be able to master the principle of instrumental analytical methods in common use and simple setup.

Essential Objectives

Learn to develop appropriate analytical methods based on the advantage and application fields of different instrumental analyses studied.

Content Coverage

Teach fundamentals of instrumental analysis:

Lecture: Discuss theory and background for

a. chemical/physical property measured

b. origin of chemical/physical property

c. instrument design and nature of response

d. signal processing and relationship between readout to property measured

Laboratory: Provides hands-on experience in

a. relating lecture material to practical analysis

b. design and operation of a real instrument

c. measurements on range of instruments

d. example analyses to illustrate value of technique

Evaluation:

_Daily performance including class attendance, learning attitude and operational capacity.

_ Notebook will be maintained during the lecture.

4. Food physics Processing

Goal

The main purpose of the course teaching is to introduce the background of modern agricultural products processing technology and to show the processing techniques commonly used in agricultural products processing, separation and purification, drying and sterilization, fermentation, analysis and detection. At the same time, the working principle and specific application cases of these processing methods are described.

Essential Objectives

a: Describe the modern agricultural products processing technology background.

b: Show in the processing of agricultural products, separation and purification, drying sterilization, fermentation, analysis and testing, and other commonly used processing technology.

c: Describe the working principle of these processing methods and their specific application cases.

Content Coverage

In this course, we will introduce the background of modern processing technology of agricultural products, and show the processing technologies commonly used in the processing of agricultural products, purification, drying and sterilization, fermentation, analysis and detection, and describe the working principle and application cases of these processing methods.

Evaluation:

_ The course is assessed by writing academic reports

5. Advanced Biochemistry

Goal

Biochemistry involves the study of the molecular composition of living cells, the organization of biological molecules within the cell, and the structure and function of these biological molecules. The biological macromolecules which this course focuses on are proteins (enzyme), polysaccharides, lipid and polynucleic acids (DNA and RNA), including the monomeric units of these macromolecules.

Essential Objectives

Upon completion of the course, the student should achieve an understanding of the following:

1) Structures of amino acids, their chemical properties and their organization into polypeptides and proteins.

2) Methods for isolating and characterizing proteins the basic elements of protein structure key principles of protein function.

3) Enzymes and how they catalyze reactions as well as enzyme kinetics.

4) Structure of fundamental monosaccharides and polysaccharides.

5) Structure and basic function of nucleotides.

6) Structure of different classes of lipids and their roles in biological systems.

7) Signal transduction and the regulation of gene expression

Content Coverage

The content of this course are divided into nine sections:

1. Carbohydrate

2. Lipid

3. Protein structure and function

4. Enzyme and enzyme engineering

5. Nucleic acid

6. Metabolism and its regulation

7. Signal transduction and gene expression

Evaluation:

_ Attendance: You are expected to attend each class meeting for the full scheduled time.

_ Examination: An assay report should be finished at end of this course.

6. Food Physics

Goal

At the completion of this course the student should be able to learn the physical properties of food and staple agricultural products. It also includes examination of the Optics, Mechanics, Electricity, Thermal and Rheology properties of food. In the procedure of food processing and preservation, make use of the physical properties for food quality assurance. This course enables students to broaden knowledge, broaden their thinking, inspire innovation, and make use the principle of food physics for their research.

Essential Objectives

a. To understand the basic principle of food of physics, the main content of physical characteristics about food.

b. To understand the physical properties of the universal, basic characteristics of food physics, and its application in food detection and processing.

c. The classic case analysis about food detection and processing related to its physical prosperities

Content Coverage

The basic physical property of food, Mechanical properties of food, Food texture evaluation, Optical properties of food, Thermoelectric properties of food.

Evaluation:

_ Day to day observation of residents work including documentation and interpretation

_ Assessment by a group of faculty at the end of the rotation.

7. Frontier in Food Biotechnology

Goal

At the completion of this course, the students should know the main biological techniques which can be used in food processing and preservation: microbial technology, enzyme technology, genetic engineering technology, and protein engineering. Besides, students should know how to use these biological techniques in food processing and preservation, and know the research progress of food

biotechnology. What's more, students should know how touse these biological techniques in their research.

Essential Objectives

a. Learn the main biological techniques which can be used in food processing and preservation: microbial technology, enzyme technology, genetic engineering technology, and protein engineering.

b. Learn how to usemicrobial technology, enzyme technology, genetic engineering technology, and protein engineering in food processing and preservation.

c. Learn how to get the literature about food biotechnology.

d. Discuss the research progress of food biotechnology.

e. Learn how touse these biological techniques in their research.

Content Coverage

Microbial technology, enzyme technology, genetic engineering technology, protein engineering,
the use of microbial technology in food processing and preservation,the use of enzyme technology in food processing and preservation, the use of genetic engineering technology in food processing and preservation,the use of protein engineeringin food processing and preservation, the research progress of food biotechnology.

Evaluation:

_ Assessment by the review paper written by students.

8. Introduction to Food Science

Goal

After completion of the course, students should be able to understand the concept and scope of Food Science. The content of the course includes: Food Chemistry, Food Quality Control, Processing Technology, Unit Operation and Equipment, Environmental and Food Safety etc. As Food Scientist, it is important to learn the basic methods and tools of research in Food Science, understand the elementary concepts and activities involved in Food Science research. This will serve as a foundation for comprehensive understanding and application of the principles in Food Science.

Objectives

a. The scope,principles and introductory contents of Food Science.

b. The technical methods, unit operation and equipment of major food processing.

c. The relationship among food quality,food safety, environmental issues and control methods.

d. The basic principles and activities involved in Food Science research.

Content Coverage

a. Overviews of Food Science, Food Chemistry, Food dietary guidelines, Nutrition, Digestion and Food Quality Control.

b. Basic methods and techniques of food preservation, including storage, drying, irradiation, fermentation and biotechnology.

c. Basic food processing techniques and equipment, including milk, meat, eggs, fruits, vegetables, aquatic products, cereals, beans and beverages, etc.

d. Relationship between environment and food processing, environment and food safety and future development trends.

Evaluation

Students will be assessed under these categories

_**C**lass power point presentation and discussion.

_Report writing

_Open book examination.

9. **Frontier development for Food Nondestructive Detection Techniques**

Goal

At the completion of this course the studentsshallbe able to interpret thenon-destructive detection techniques and can understand the significance and main tasks ofthem in the field of food. For some representative technologies like near-infrared spectroscopy technology, computer visiontechnology, spectral imagingtechnology andbiosensor technology,he/she shall be able to know the principles, related concepts,application ranges, basic operating methods and experimental data processing methods of them. They shallalso have some knowledge of the development history and frontier development about food nondestructive detection technologies by taking this course.

Essential Objectives

a. To grasp some simple principles and related concepts of non-destructive detection techniques.

b. Learn how to use non-destructive detection techniques to detect the quality of food and can compare

the advantages and disadvantages of different detection methods.

c. Grasp the application range and main analysis objects of various modern non-destructive detection techniques and know how to analyze the experimental data.

d. Learn the research status and future development trend of non-destructive detection techniques.

Content Coverage

An overview of modern non-destructive detection techniques for food shall introduce the detection principle, system structure, image and data processing, application examples and frontier development of non-destructive detection techniques like near-infrared spectroscopy technology, computer vision technology, spectral imaging technology andbiosensor technology and the main performance and characterization of each instrument.

Evaluation:

_ Essay Report

10. Introduction to Food Science

Goal

After completion of the course, students should be able to understand the concept and scope of Food Science. The content of the course includes:Food Chemistry, Food Quality Control, Processing Technology, Unit Operation and Equipment, Environmental and Food Safety etc. As Food Scientist, it is important to learn the basic methods and tools of research in Food Science, understand the elementary concepts and activities involved in Food Science research. This will serve as a foundation for comprehensive understanding and application of the principles in Food Science.

Objectives

Students should be able to understand

a. The scope, principles and introductory contents of Food Science.
b. The technical methods, unit operation and equipment of major food processing.
c. The relationship among food quality, food safety, environmental issues and control methods.
d. The basic principles and activities involved in Food Science research.

Content Coverage

a. Overviews of Food Science, Food Chemistry, Food dietary guidelines, Nutrition, Digestion and Food Quality Control.
b. Basic methods and techniques of food preservation, including storage, drying, irradiation, fermentation and biotechnology.
c. Basic food processing techniques and equipment, including milk, meat, eggs, fruits, vegetables, aquatic products, cereals, beans and beverages, etc.
d. Relationship between environment and food processing, environment and food safety and future development trends.

Evaluation

Students will be assessed under these categories

_Class power point presentation and discussion.

_Report writing

_Open book examination.

11. Experimental design and data analysis

Goal

At the completion of this course the resident should be able to scientific design experiment and effective process the test data obtained from the experiment. This includes examination of reasonable experimental design, effective access to reliable statistics, reliability analysis of these statistics and reasonable relationship between the experimental data obtained. Furthermore, using appropriate method to analyze the reliable and significant of obtain data and provide data support for further experiment.

Essential Objectives

a. Learn to design a scientific experiment and process the data obtained during the experiment.

b. Learn to evaluate the effectiveness and reliability of data, and learn to analyze the data.

c. Learn to statistically analyze of experimental data and get the scientific conclusion.

Content Coverage

Comparison and evaluation of test results, analysis of variance, regression and correlation,

Experimental design, Orthogonal design, principle component analysis.

Evaluation:

_ Day to day observation of residents work including documentation and interpretation

_ Assessment by a group of faculty at the end of the rotation.

12. Bio-separations and Extraction Techniquein Food Industry

Goal

As we know, purification enriches biological molecules, cells and parts of cells into purified fractions, which are the end products of bioprocessing. This course is intended to offer the basic and relatively advanced skills in bioseparation and extraction science, as frequently used by researcher in the fields of Biotechnology. This includes the introduction of membrane separation technique, capillary electrophoresis separation techniques, aqueous two-phase extraction technology, supercritical fluid extraction technology, ultrasonic assisted extraction technology and so on. At the completion of this course the researcher should be able to efficiently separate and extract substance, especially some high valueable products: diagnostic biomarkers in biological materials, therapeutic proteins in microbial fermentation or cell culture, bioactive peptides in plant and animal tissues.

Essential Objectives

a. Learn the basic theory of bioseparations and extraction Technique
b. Learn the characteristics of products to be separated: molecular size, charge, conformation, hydrophobic character and so on，which effect the bioseparation and extraction of products .
c. Learn curriculum-related instrument (high performance liquid chromatography , capillary electrophoresis separation, enzyme membrane coupling)operation:
d. Learn to choose a proper approach to separate and extract the subtract.

Content Coverage

Overview of bioseparation, mass transfer, precipation, extration inroduction to liquid chromatography, properties of biological material, cell Disruption, Centrifugation, high performance liquid chromatography.

Evaluation:

_ Assessment by a group of faculty at the end of the rotation.

_ Log book will be maintained of the procedures learnt.

13. Advanced Development of Food Nutrition and Safety

Goal

The purpose of this course is to enable students know some concepts of modern food nutrition and safety. These include basic theory and the development trend of modern food nutrition, the research method of modern nutrition, and know some food safety analysis techniques such as high performance liquid chromatography (HPLC), gas chromatography (GC), enzyme-linked immunosorbent assay (ELISA), latest new technologies used in detection of heavy metal ions and mycotoxins, and so on.

Essential Objectives

a. Master the basic theory and main content of modern food nutrition, learn the development trend of food nutrition and the research method of modern nutrition. Apply the theory of modern food nutrition to guide for scientific research, production practice and health care.

b. Understands the concept of food safety, factors that impact food quality and safety, the importance of food safety all over the world.

c. Learn to propose some integrated methods, to qualitatively and quantitatively analyze the unsafe or contaminated food.

Content Coverage

Genomics, proteomics and metabolomics with nutrition, energy metabolism and macronutrient (protein and amino acids, carbohydrates, dietary fiber and so on), micronutrient and related nutrients, nutrition and chronic disease. Genetically modified food and mycotoxins on food safety and their detection, environmental pollution on food safety and the detection methods, the impact of pesticide and veterinary drug residues on food safety and their detection methods, food additives and food safety, and heavy metal pollution on food safety and their detection methods, food safety analysis technology.

Evaluation:

Assessment at ordinary times of students work includes attendance rate and classroom performance and so on. Final assessment method is in the type of essay report.

14. Digital Image Processing

Goal

Students who once finish this course should master middle level technique about digital image processing. They should be able to solve certain variety of problems in detection on external quality of food and agricultural product based on computer vision.

Essential Objectives

The principal objectives are to provide an introduction to concepts and methodologies for digital image processing. And to develop a foundation that can be used as the basis for further study and research in this field. Students who once finish this course should master middle level technique about digital image processing. They should be able to solve certain variety of problems in detection on external quality of food and agricultural product based on computer vision.

Content Coverage

Digital image fundamentals, such as image sensing & acquisition,sampling & quantization, relationship between pixels ,etc .Gray level transformations. Image enhancement in the spatial domain & in the frequency domain. Color image processing. Image segmentation. Image representation，description and object recognition.

Evaluation:

Coursework with PPT and class presentation account for the final marks

15. Spectral analysis of food

Goal

At the completion of this course the students should be able to interpret both the basic theories and the applicationsof theopticalspectruminstruments.This includes examination of UV visible spectroscopy，fluorescencespectroscopy, infrared spectroscopy ， atomic absorptionspectroscopy and some ofRaman spectrum etc. Especially，The students should be able to understand the application method and how to use the instruments in the food analysis.

Essential Objectives

a. Learn to understand the basicknowledge of the spectral analysis of food.

b. Learn to know the theories and principles of UV visible spectroscopy，fluorescencespectroscopy, infrared spectroscopy，atomic absorptionspectroscopy and some ofRaman spectrum etc.

c. Learn the applications of the spectruminstruments in food analysis.

d. Learn the basic operation of the spectruminstruments.

Content Coverage

The history, principle, application and operation of thespectruminstruments (including UV visible spectroscopy，fluorescencespectroscopy, infrared spectroscopy，atomic absorptionspectroscopy and some ofRaman spectrum etc.).

The history, principle, application and operation of thespectruminstruments (including UV visible spectroscopy，fluorescencespectroscopy, infrared spectroscopy，atomic absorptionspectroscopy and some ofRaman spectrum etc.).

Evaluation:

_ A report or review on the spectral analysis of foodshould be submitted after this curriculum

_ Assessment by a group of faculty at the end of the rotation.

16. Food Fermentation Technology

Goal

This course discusses the application of fermentation technology in food industry, which covers principles and history of fermentation, microbial metabolisms and regulation, fermentation techniques and conditions and their application in the mixed fermentation commonly implemented in food industries. This course is designed to enable students develop a food fermentation process using microorganisms and local based substrate.

Essential Objectives

Upon successful completion of this course, students are expected to be able to design a food fermentation process starting from selection of microorganisms and the fermentation conditions to produce required modification in fermented food matrix.

Content Coverage

Chapter 1 Introduction

1. Background and history of food fermentations
2. Different type of fermentations in food area

Chapter 2 Fermentation Equipment Selection: Laboratory Scale Bioreactor Design Considerations

1. Types of Bioreactor
2. Construction Aspects
3. Vessel Design
4. Drives/Coupling
5. Probes and Sampling
6. Control and Actuation

Chapter 3 Modes of Fermenter Operation

1. Batch Culture
2. Fed-batch Culture
3. Continuous Culture

Chapter 4 The Design and Preparation of Media for Bioprocesses

1. Where Do We Start?
2. Media Types
3. Medium Components
4. Medium Formulation
5. Sterilisation of Media
6. Designing Media for Specific Functions

Chapter 5 Preservation of Cultures for Fermentation Processes

1. Water, Ice, and Preservation of Life
2. Specialized Cell Banks for Industry
3. Microbial Cell Cultures

Chapter 6 Examples of different kind of food fermentations

1. Traditional fermented foods: Soy, Vinegar, Distillate spirits, Beer, Wine.
2. Modern fermented foods: Amino Acids, Food additives.

Seminar

Topic: 1. Basic understanding to Food Fermentation Technology.

2. Introducing your interested fermentation technology and its application to food products.

Evaluation:

_ Essay Report

_ Lesson check in

(Ⅴ). Information of Professors

Ma Hai-Le Ph.D

Second-level Professor; Committee Chair of School of Food and Biological Engineering, Jiangsu University; director of *Jiangsu Provincial Research Center for Agri-product Biological Processing and Separation Engineering, China*; director of *Jiangsu Provincial Key Lab for Agri-product physical Processing, China.*

Education Background

Ph.D. 1996, Agri-Product Processing & Preservation Eng., Jiangsu Univ. of Sci. & Tech.
M.S. 1989, Agri-Product processing Eng., Northwestern Agri. Univ., China
B.S. 1985, Agricultural Mechanization, Northwestern Agri. Univ., China
Postdoctory.1997-1999, Food Science & Technology, Jiangnan Univ., China

Working Experience

1985-1993, lecturer, Agri. Eng., Northwestern Agri. Univ., China
1996-2001, associate professor, Jiangsu Univ. of Sci. & Tech., China
2001-2003, professor, Jiangsu Univ. of Sci. & Tech., China
2003- Present, professor, PhD supervisor, Jiangsu Univ., China
2005-2006, visiting scholar, UC Davis, USA

Research Interesting

Prof. MA's current research is focused on the physical processing method of food, such as the Super- or sub-critical CO2 extraction and ultrasonic- assisted extraction of active ingredients in natural products, functional peptide preparation by ultrasonic assisted enzymatic, food sterilization by pulse magnetic field, and the development of above processing equipment. More than 300 papers and 8 books have been published.

- separation of active factors in agri-products;
- preparation of functional peptides;
- non-thermic sterilization by high intensity pulsed magnetic field;
- food processing equipment.

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Zou Xiao-Bo Ph.D

Second-level Professor, Dean of School of Food and Biological Engineering, Jiangsu University.

Education Background

2002-2005, Jiangsu University of Science and Technology, Ph.D.
1997-2001, Jiangsu Institute of Technology, M.S.
1993-1997, Jiangsu Institute of Technology, B.S.

Working Experience

Oct. 2008-Oct. 2009, worked at Food and Nutrition Engineering Leeds University, Leeds, UK as a visiting scholar, the topics studied were Evaluation of milk and melon quality by Ultrasound and Near infrared Spectroscopy.
Dec. 2013-Feb. 2014, Visiting Professor, Utah state University, California Institute of Technology

Research Interesting

Dr. Zou's research interests are in the area of quality and safety evaluation of food and agricultural products. He applies optical, mechanical, electrical, and other state-of-the-art technologies to develop sensors and sensing techniques for rapid, nondestructive evaluation of quality and safety of agricultural products. His current research emphasis is developing new gas sensors, hyperspectral imaging technology and biosensors for assessing quality of food and agricultural products. He has been authorized 25 invention patents and published 80 papers.

- Study on the safety and quality of food by new colorimetric biosensors;
- Non-destructive diagnosis of nutrient deficient crops by hyperspectral imaging information;
- Detection the fermentation process of Zhenjiang Vinegar by biosensors;
- New gas sensors development and its detection food qualities.

Contacts

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Chen Bin Ph.D

Professor, doctoral supervisor, executive director of the Harvesting & Processing Machinery Branch of Chinese Society of Agricultural Machinery, director of the Analytical Machinery Branch of China's 7th Instrument & Control Society, director of China Association for Instrumental Analysis, member of the Optical Instrument Association of China Instrument & Control Society, member of the Professional Committee of Physical & Optical Instruments, and member of the Professional Committee of Near Infrared Spectrometry

Education Background

Ph.D., Jiangsu University of Science and Technology, 1996-2001
Major research areas: Agricultural products processing and storage
M.S., Jiangsu Institute of Technology, 1986-1990
Major research areas: Agricultural products processing and storage
B.S., Zhenjiang Institute of Agricultural Machinery, 1978-1982
Major: Machinery manufacturing process, equipment and automation

Working Experience

Teaching assistant at Zhenjiang Institute of Agricultural Machinery, 1983-1987
Lecturer at Department of Agricultural Machinery, Jiangsu Institute of Engineering, 1987-1996
Associate professor at School of Agricultural Machinery, Jiangsu University of Science and Technology, 1996-2004
MSc supervisor at School of Agricultural Machinery, Jiangsu University of Science and Technology, 1997 till now
Professor at School of Biological and Environmental Engineering, Jiangsu University, 2004 till now
PhD supervisor at School of Food and Biological and Engineering, Jiangsu University, 2005 till now
Research Interesting
Professor Chen's current research is mainly focused on optical detection methodology for agricultural product quality.

Contacts

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Huang Xing-Yi Ph.D

Second-level Professor, vice dean of School of Food and Biological Engineering.
Dr. Huang's research interests are focused on nondestructive detection techniques for agricultural product. Current projects include evaluating quality of food & agricultural product via computer image processing technique, developing colorimetric sensor array for detection and identification of agricultural product, and estimating the quality of food and agricultural product using fusion techniques based on machine vision, E-nose & E-tongue. In addition, her research involves application of electronic tongue in food engineering.

Education Background

Ph.D., Jiangsu University of Science and Technology, 1996.9-1999.12
M.S., Jiangsu Institute of Technology, 1985.9-1988.6
B.S., Jiangsu Institute of Technology, 1981.9-1985.8

Working Experience

Jan. 2000~Jan. 2001 Postdoctoral research, University of Saskatchewan, Canada
Feb.2001~present Professor, School of Food & Biological Engineering, Jiangsu University,
Oct. 2009~Oct.2010 Visiting Professor, Michigan State University, USA.

Research Interesting

Nondestructive detection technique and equipment for evaluation of quality of food and agricultural product.

Contacts

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Ma Yong-Kun Ph.D

Professor of School of Food & Biological Engineering

Education Background

Ph.D.2001-2005, China Agricultural University, Major: Agricultural Products Processing and Storage Engineering,

M.S.1996-1999, Northwest Agriculture-Forest University, China, Major: Agricultural Products Processing and Storage Engineering

B.S. 1982-1986, Shanghai Ocean University, China, Major: Food Processing

Working Experience

2004- present, Jiangsu University, Professor, Ph.D. supervisor

2002.1-2002.12, Xinrui tomato products Co. Ltd, Hebei province, Technical Director

1986-1997, Shihezi University, Xinjiang, Lecturer and Associate Professor

2009-2010, Ohio state university of USA, visiting scholar

Research Interesting

Food high pressure processing

Fruit wine fermentation engineering

Food flavors analysis and application

Modern processing technology of fruit and vegetable

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Cai Jian-Rong Ph.D
Professor of School of Food & Biological Engineering

Deputy dean of Institute of Agriculture Products Processing Engineering.
Prof. CAI's current research is focused on rapid quality detection of agricultural and food products by nondestructive detection technology. The applied technologies include image processing, hyperspectral image processing, X-ray image processing, acoustic detection, electrochemical, etc.

Education Background
1989, Jiangsu Institute of Technology, Specialized Agricultural Mechanization, Bachelor, China.
1996, Jiangsu University of Science and Technology, Specialized Agricultural Agricultural Products Process Engineering, Master, China.
2005, Jiangsu University, Specialized Agricultural Agricultural Products Process Engineering, Ph.D, China.
2005, Hannover University, Specialized Bio-robot and and its application, Visiting Scholar, Germmay.

Working Experience
1989-1995, Department of Science and Technology, Jiangshu University
1995-2012, Department of Food Science and Technology, Jiangshu University
2012-Present, Institute of Agriculture Products Processing Engineering, Jiangshu University

Research Interesting
Rapid quality detection of agricultural and food products.
The fruit and vegetable harvesting robot.
Biological sensing detection for agriculture and food products.

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Zhang Hong-Yin Ph.D
Professor of School of Food & Biological Engineering

Education Background

Ph.D. in Food Microbiology, Zhejiang University, P. R. China, 2004

M.S. in Food Biochemistry, Henan University of Technology (Pre Zhengzhou Grain College), P. R. China, 2001

B.C. in Food Science and Technology, Huazhong Agricultural University, P. R. China, 1995

Working Experience

Aug. 2008- Sep. 2009, worked at School of Land, Crop and Food Science, The University of Queensland, Australia, as a visiting scholar.

Research Interesting

- Food Microbiology
- Biological Control of Postharvest Diseases of Fruits and Vegetables
- Postharvest Physiology and Pathology of Fruits and Vegetables

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Zhang Zhi-Cai　Ph.D
Professor of School of Food & Biological Engineering

Education Background
Ph.D.

Working Experience
1988.7-1989.8 Jiangsu Huaiyin Food Industry School;
1989.9-1995.6 Institute of Jiangsu Huaiyin Agriculture science;
1995.6-2000.6 Jiangsu Huaiyin pharmaceutical factory;
2000.6-2002.8 Jiangsu Taixin Tongyuantang bioengeering plant;
2006.6- present: Jiangsu University

Research Interesting
- Biofermentation: involved in the fungi, isolation and purify and biofunction of active components;
- Bioenergy: Biotransformation of stalk
- Fermentation equipment

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Chen Quan-Sheng, PhD
Professor of Food and Biological Engineering

Education Background

Anhui Agricultural University, PR China, B.S., 1997
Anhui Agricultural University, PR China, M.S., 2004
Jiangsu University, PR China, Ph.D., 2007

Working Experience

2007.06- 2009.06, Jiangsu University, PR China, Lecture
2009.06-2013.08, Jiangsu University, PR China, Associate Professor
2010.09-2011.09, University of Tennessee, US, Visiting scholar
2013.06-Present, Jiangsu University, PR China, Professor

Research Interesting

- Rapid & nondestructive detection of Agri-product & food
- Real-time quality monitoring and control in food processing
- Emerging analytical tools in analysis of food quality and safety, especially including near infrared spectroscopy (NIR), E-nose, E-tongue, biosensors, and multispectral/hyperspectral imaging tool.

Contacts

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Chen Guan-Hua Ph.D
Professor of Food and Biological Engineering

Education Background
PhD of analytical chemistry, Hebei University, China, 2003; Master of analytical chemistry, Hebei University, China, 1996; Bachelor of physics, Hebei University, China, 1982.

Working Experience
Apr. 2008-Oct. 2008, worked at College of Pharmacy, University of Georgia as a visiting scholar, the topics studied was the separation of an oligonucleotide drug and its metabolite by capillary gel electrophoresis.

Research Interesting
Prof. Chen's current research is focused on the detection technology applied in food safety and the mechanism of the anti-oxydation of active component in natural products. More than 50 papers and 1 book have been published.

- Sensitive detection for agrochemcal and veterinary drug residues by capillary electrophoresis or high performance liquid chromatography;
- Synthesis of molecularly imprinted material used in solid extraction;
- Kit of fast detection base on chemical coloration for agrochemcal and veterinary drug residues;
- Cooperation of anti-oxydation between natural antioxidant and antioxidase.

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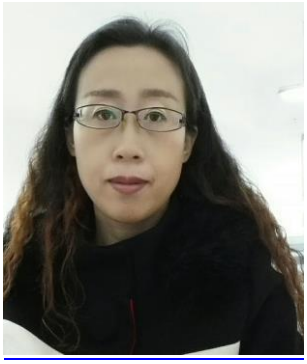

Duan Yu-Qing Ph.D
Professor of Food and Biological Engineering

Education Background

2001.9-2004.6, Ph.D. of Agricultural product processing and storage, School of Food Science and Technology, Huazhong Agricultural University.
1998.9-2001.7, Master of Chinese Medicine, Jilin Agricultural University;
1994.9-1998.7, Bachelor of Pharmaceutical Botany, Jilin Agricultural University;

Working Experience

2004.7-present, Engaged in teaching and research work, School of Food & Biological Engineering, Jiangsu University. Professor, Doctoral Tutor, Professor Committee Member of School of food and biological engineering in 2013. "Blue Project" Young Academic Leaders of Universities and "Six Talent Peaks" Cultivation Object of Jiangsu Province in 2014.
2015.1-2016.1, Visiting scholar, Department of Food Science, University of Massachusetts Amherst, USA.
2012.8-2013.1, Visiting scholar, Laboratory of Natural Product Chemistry, Department of Pharmacy, Osaka University, Japan.
2010.10-2012.10, Postdoctoral research, Postdoctoral Research Station of Agricultural Engineering, Jiangsu University;
2006.11-2009.11, Postdoctoral research, Postdoctoral Research Station of Food Science and Engineering, Jiangsu University;

Research Interesting

Food science and nutrition, functional food science, natural product chemistry.

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He Rong-Hai Ph.D
Professor of Food and Biological Engineering

Education Background

Ph.D. 2006,Jiangsu University, China, Major: Agricultural Product Processing and Preservation Engineering

M.S. 2004, Jiangsu University, China, Major: Agricultural Product Processing and Preservation Engineering

B.S. 1993, Jiangsu Agricultural Institute, China, Major: Food Engineering

Working Experience

2006.06- School of Food and Biological Engineering, Jiangsu University, Prof., Assistant Dean

2007.2-2008.5 University of Tennessee, Knoxville, USA, Postdoctoral Research Associate

1993.8-2001.8 Nanjing Tianhuan Food Group, China, Engineer

Research Interesting

Functional food

Food phisycal processing technology ang equipiment

Social academic post and honor

Member of Agricultural Products Storage and Processing-Branch of CAASS

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Zhou Cun-Shan Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Ph.D September 2002-June 2007, Food Science and Engineering, Jiangsu University

Working Experience

RIKEN, Heddle Initiative Research Unit, Institute of Advanced Science, Visiting Scientist, 2013.July.11-2014.January.11

Jiangsu University, School of Food and Biological Engineering, Associate Professor, 2012, April- Present

Zhejiang A & F University, School of agricultural and food science, lecturer July 2007-November 2009, Associate Professor November 2009- March 2012

Research Interesting

Protein engineering preparation and Carbohydrate biomass energy.

- Chemical and acoustic principles of solid-liquid extraction with ultrasound-assisted
- Modeling of mass transfer phenomena in food and bioprocess engineering
- Converting biomass into industrial feedstock and products with green catalyst (Ionic liquid)
- Applied and fundamental research to characterize and evaluate biological materials using advanced instrumentation

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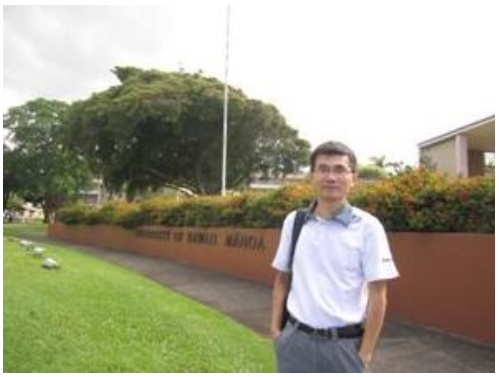

Cui Heng-Lin Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Ph.D., Microbiology, Institute of Microbiology, Chinese Academy of Sciences (IMCAS), 2004-2007.
M.S., Microbiology, 2001, College of Life Sciences, Nanjing Normal University (NJNU), 1998-2001.
B.S., Biology, 1994, Department of Biology, Nanjing Normal University (NJNU), 1990-1994.

Working Experience

08/2013-present, Professor, School of Food & Biological Engineering, Jiangsu University.
02/2013-02/2014, Visiting scholar, School of Science, The Hong Kong University of Science and Technology (HKUST).
08/2012-08/2013, Associate Professor, School of Food & Biological Engineering, Jiangsu University.
08/2011-08/2012, Postdoctoral Fellow, Department of Civil and Environmental Engineering, University of Hawai'i at Mānoa (UHM).
08/2007-08/2011, Associate Professor, School of Food & Biological Engineering, Jiangsu University.
06/2001-07/2007, Lecturer, School of Biological & Environmental Engineering, Jiangsu University.

Research Interesting

Food microbial diversity and safety

Microbial diversity and application of extremophiles

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Sun Wen-Jing Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Ph.D. 09. 2003 - 06.2007: Candidate in Ecology, Hebei Normal University, P.R. China;
B.S 09.1982- 06.1986: in Biology, Lanzhou University, P.R. China;

Working Experience

06. 2008-Present: Professor, School of Food and Biological Engineering, Jiangsu University, P.R. China;
12. 2001- 05.2008: Professor, Shanxi Institute of Biology, P.R. China;
06. 1986 -10. 2001: Assistant Professor, Associate Professor, Shanxi Institute of Biology, P.R. China;

Research Interesting

- Bioproduction technology of Food additives
- Development and Utilization of Microbial Sources
- Comprehensive Utilization and Bioconversion of Agricultural Products

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Jiang Song Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Ph.D.2000-2009 Jiangsu University, China, Major: Engineering of agricultural product processing and storage.

M.S.1992-1996 Jiangsu University, China, Major: Engineering of agricultural product processing and storage.

B.S.1981-1985 Jiangsu University, China, Major: Agricultural machinery design and manufacture.

Working Experience

2006.4-present, School of food and biological engineering, Jiangsu University, Deputy Dean.

2001-present, Director, Jiangsu creation research institute.

2001.12-2005.3, School of biological and environment engineering, Jiangsu University, Deputy Dean.

1995-1998, Department of food science and engineering, Jiangsu University, Deputy Director.

1985.7-present, Jiangsu University, Teaching Assistant, Lecturer, Associate Professor and Professor.

Research Interesting

Rheological properties and evaluation of texture of food and agricultural products.

Storage and preservation of agricultural products.

Processing machinery and device of food and agriculture products.

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Lin Lin Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Jiangsu University, Mechanical Engineering, BS, 2001.
Jiangsu University, Agricultural Engineering, MS, 2005.
Jiangsu University, Food Science, PhD, 2007.

Working Experience

Aarhus University (Denmark), Nanoscience, Postdoctor, 2011.

Research Interesting

Food Preservation
Food Packaging
Bioenergy
Nanotechnology for Biological Applications

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Gao Rui -Chang Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Shandong Agriculture University. Agricultural Product Processing, BS, 2001
Hebei Agriculture University. Processing and Storage Engineering of Farm Products, MS, 2004.
Ocean University of China. Food Science. Ph.D. 2007

Working Experience

2015.07- Professor, Department of Food Science and Engineering, Jiangsu University, Zhenjiang, Jiangsu, China
2014.05-2015.05 Visit Scholar, University of Massachusetts Amherst, USA.
2012.02-2014.02 Food Science Division, Deparment of Life Sciences National Natural Science Foundation of China, Beijing, China
2010.08–2012.01 Associate Professor, Department of Food Science and Engineering, Jiangsu University, Zhenjiang, iangsu, China
2007.06–2010.07Lecturer, Department of Food Science and Engineering, Jiangsu University, Zhenjiang, Jiangsu, China

Research Interesting

Aquatic product chemistry and processing
Food flavor

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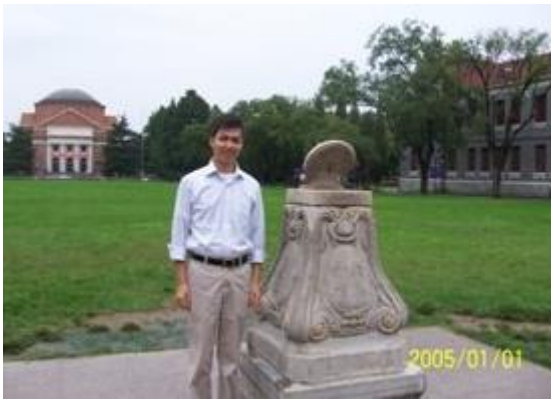

Xun Bin Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

Ph.D. Food Science 2011 Jiangsu University
M.S. Food Science 2005 Jiangsu University
B.S. Grain Science and Engineering 1990 Jiangnan University

Working Experience

School of Food and Biological Engineering, Jiangsu University, Zhenjiang, Jiangsu, China

Research Interesting

Engaged mainly in full utilization technology research and equipment development for food by-products, focusing on theoretical researches and engineering technology like sub-critical fluid extraction, microwave enzyme inactivation and sterilization of soybean germ, wheat germ, rice bran, corn germ, corn gluten meal and other bulk food by-products, and related products development and equipment development.

- Sub-critical fluid extraction technology research and engineering of cereal germ oil
- Research and equipment development of microwave enzyme inactivation and sterilization technology for low-moisture cereal germ
- Deep-processing technology and industry application of corn gluten meal

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Wang Yun Ph.D
Professor of School of Food and Biological Engineering, Jiangsu University

Education Background
BSc. Jiangsu Agricultural College, 1996
MSc. Yangzhou University, 1999
PhD. Nanjing Agricultural University, 2006

Working Experience
Lecture in Department of Biology at Changshu Institute of Technology, 1999-2002
Associate professor of Biochemistry, and Department Head of Biotechnology, School of Food and Biological Engineering, Jiangsu University, 2006-current
Visiting research fellow in School of Biological and Biomedical Sciences, Durham University (UK), 2010-2011

Research Interesting
Research interests involve the use of multidisciplinary methodologies from molecular biology, proteomics and metabolomics to (i) decipher the underlying mechanisms involved in physiological and nutritional changes in fruits and vegetables during post-harvest storage and process; (ii) investigate the interaction between fungi (such as Aspergillus flavus, Penicillium expansum) and their host and the possible regulatory networks involved in mycotoxin biosynthesis.
Another research interest includes the development of immunoaffinity chromatography and its application to pesticide and veterinary medicine residues detection in food samples.

Contacts
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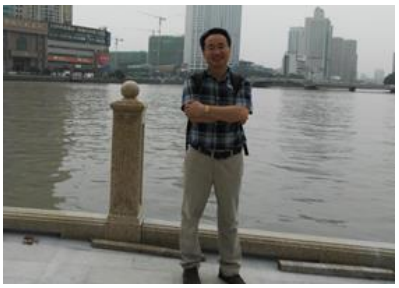

Qi Xiang-Hui Ph.D

Professor of School of Food and Biological Engineering, Jiangsu University

Education Background

2016-2016 Yale University, Exchanging Research

2015-2016 University of California, Los Angeles, Visiting Professor

2009-2011 Nanjing University of Technology, Chemical Engineering and Technology, Postdoc

2003-2006 Guangxi University, State Key Laboratory for Conservation & Utilization of Subtropical Agro-bioresources, Microbiology, PhD.

Working Experience

2016-Present Professor, Master & PhD Supervisor, Jiangsu University

2013-2014 The government of Jingkou District of Zhenjiang, Jiangsu Province, General manager Assistant of Sinograin (Zhenjiang), China

2010-2016 Associate Prof. Master Supervisor, Jiangsu University

2007-2010 Lecturer, Jiangsu University

1998-2000 Environmental Protection Bureau of Yuanshi, Hebei Province, China

Research Interesting

- Food microorganism, , Biosynthesis, Pathway engineering & fermentation
- Food enzyme engineering, bio-catalysis & biotransformation.
  Mainly focusing on: the Biosynthesis of high value-added chemicals by microbes and engineered strains; Isolation, identification and evolution of microbes; Metabolic engineering & Pathway engineering of functional microbes, and Biotransformation; Discovery of novel genes, enzymes and new strains; Metabolic regulation based on the research of microbial omics; Rational & Irrational design of microbial enzymes; Application of high value-added products including functional sugar alcohols by biosynthesis and biotransformation based on microbial engineered strains.

Contacts

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APPLICATION FORM FOR THE SCHEDULE

Comments of Discipline： Person in charge（Signature）： Date
Review opinion of college academic degree sub-committee: Person in charge （Signature）： Date