Dr. Baojun Yi is an associate professor in the College of Engineering at Huazhong Agricultural University. He is currently the deputy director of agricultural engineering department, Regular members of the Key Laboratory of Agricultural Equipment in Mid-lower Yangtze River of the Ministry of Agricultural and Rural Affairs of China. Dr. Yi has long been engaged in teaching and research activities in agricultural biological environment and energy.

He has been awarded as the Excellent Instructor of National College Students' Innovation and Entrepreneurship Competition for Agricultural Building Environment and Energy Engineering, the Excellent Instructor of College Students' Science and Technology Innovation, the Winning Award of the Lecture Competition for Young Teachers of the University, the Outstanding Communist Party Member of the College, and the Excellent Head Teacher of the College. In recent years, she was hired as "Vice President of Science and Technology" by Wuhan Lanying New Energy Co., Ltd. Hubei Lvxin Ecological Technology Co., Ltd. Employed as provincial science and technology commissioner.

Teaching

Dr. Yi pays high attention to teaching and educating students. At present, he has taught engineering thermodynamics, Combustion Science, Engineering Fluid Mechanics, Thermal Testing Technology and Energy

Basic Comprehensive Experiment as the main lecturer. Every year he was received better evaluation from students. She has won the second prize of Huazhong Agricultural University Teaching Achievement Award, the winning prize of Young Teachers' Lecturing competition, and the annual Teaching Innovation Excellence Award of "the fifth National University Teaching Innovation Competition of Xi 'an University".

Research

In recent years, he has presided or participated in several national key research and development programs, National Natural Science Foundation of China, Industry Special Projects of Ministry of Agriculture, Natural Science Foundation of Hubei Province, Basic Research Funds for Central Universities and other projects. Published more than 20 academic papers in Applied Energy, Energy Conversion and Management, Energy, Fuel Processing Technology, Combustion Science and Technology and other domestic and foreign academic journals and international conferences. Among them, 15 papers are indexed by SCI and EI, and more than 10 national authorized invention patents have been obtained. Currently, he is a reviewer of BT, JCP, EF, RSC AD, CES and other SCI journals.

Membership in Academic Societies

- Chinese Society of Engineering Thermophysics (CSET)
- Chinese Society of Agricultural Engineering (CSAE)

Current research interest

- Engaged in the related scientific research of agricultural waste treatment and energy utilization;
- Functional research of new energy and new materials;
- Thermal conversion mechanism of solid fuels;
- Development of agricultural pyrolysis carbonization equipment;
- Construction of rural distributed intelligent energy systems.

Research Programs

- Study on the mechanism of low temperature baking of livestock manure to treat livestock wastewater (Natural Science Foundation of Hubei Provincial), 2018CKB906, 01, 2018-12,2019

My duties: Project leader. System study of the adsorption properties and adsorption mechanism of low temperature baking of livestock manure in livestock wastewater.

- Study on adsorption functionalization mechanism of biochar during high efficiency pyrolysis of agricultural waste (Fundamental Research Funds for the Central Universities), 2662019PY018, 2019.01-2021.12.

My duties: Project leader. The preparation of biochar for adsorbents, catalyst carriers and soil improvers.

- Synergistic regulation mechanism of structure and nutrition of high-quality biochar fertilizer based on straw pyrolysis technology (National Natured Science Foundation of China), C31701310, 2018.01-2020.12.

My duties: Project major participant. Study on the structural evolution of straw during pyrolysis and carbonization and its slow-release properties to nutrients.

- Research and Demonstration of key technologies of no-maintenance green planting roof system based on biomass utilization (Major Projects of Technical Innovation of Hubei Province), 2019ACA153, 2019.01-2021.12.

My duties: Project major participant. Process control of biomass pyrolysis, carbonization and combustion for using in planting system.

- Integrated research on the hierarchical utilization technology of straw based on biochar

(Special research projects in public service industry), 201003063, 2015.10-2019.10.

My duties: Project major participant. Study of pyrolysis and carbonization mechanism and equipment of straw.

Published papers:

[1] Zihang Zhang, **Baojun Yi ***, Zhengshuai Sun, Qi Zhang, He Feng, Hongyun Hu*, Xiangguo Huang, Chunqing Zhao.Reaction process and characteristics for coal char gasification under changed CO_2/H_2O atmosphere in various reaction stages[J]. Energy 2021;229, 120677.

[2] Haodong Zhu, **Baojun Yi***, Hongyun Hu*, Qizhou Fan, Hao Wang, Hong Yao. The effects of char and potassium on the fast pyrolysis behaviors of biomass in an infrared-heating condition. Energy 2021;214, 119065.

[3] Yao Zhu, **Baojun Yi***, Hongyun Hu*, Zhixi Zong, Meijing Chen, Qiaoxia Yuan. The relationship of structure and organic matter adsorption characteristics by magnetic cattle manure biochar prepared at different pyrolysis temperatures. Journal of Environmental Chemical Engineering 2020; 8(5): 104112.

[4] **Baojun Yi**, Liqi Zhang*, Fang Huang, Zhihui Mao and Chuguang Zheng. Effect of H_2O on the Combustion Characteristics of Pulverized Coal in O_2/CO_2 Atmosphere. Applied Energy 2014, 132(0): 349-357.

[5] **Baojun Yi**, Liqi Zhang*, Fang Huang, Zuojun Xia, Zhihui Mao, Jiwei Ding, Chuguang Zheng，Investigating the combustion characteristic temperature of 28 kinds of Chinese coal in oxy-fuel conditions，Energy Conversion and Management 2015, 103 (0): 439-447.

[6] **Baojun Yi**, Liqi Zhang*, Qiaoxia Yuan, Shuiping Yan, Chuguang Zheng ,The evolution of coal char structure under the oxy-fuel combustion containing high H_2O. Fuel Processing Technology. 2016, 152: 294-302.

[7] **Baojun Yi**, Liqi Zhang*, Zhihui Mao, Fang Huang and Chuguang Zheng. Effect of the Particle Size on Combustion Characteristics of Pulverized Coal in an O_2/CO_2 Atmosphere. Fuel Processing Technology 128, 0 (2014): 17-27.

[8] **Baojun Yi***, Qiaoxia Yuan, Hongliang Cao, Wenjuan Niu, Ming Wang, Yao Zhu, Shuiping Yan. Effect of alkali and alkaline earth metal species on the combustion characteristics of cattle manures. RSC Advances 2018; 8: 11705 - 13.

[9] **Baojun Yi***, Qiaoxia Yuan*, Hongliang Cao, Ming Wang, Wenjuan Niu, Shuiping Yan. Combustion Characteristics of Densified Cattle Manure Briquette in an Isothermal Condition. Bioresources 2018; 13: 3571-84.

[10] Wei Wu, Qizhou Fan*, **Baojun Yi***, Bichen Liu and Rujiao Jiang. Catalytic characteristics of a Ni–MgO/HZSM-5 catalyst for steam reforming of toluene. RSC Advances 2020; 10, 20872–20881

Books (Participate in one of the chapters):

Liqi Zhang, **Baojun Yi**. Chapter 4 - Pulverized Coal Combustion Characteristics in Oxy-fuel Atmospheres - Zheng, Chuguang [M]//LIU Z. Oxy-Fuel Combustion. Academic Press. 2018: 63-85.

Patents

[1] **Baojun Yi**, Zihang Zhang, Qiaoxia Yuan, Qi Zhang, Qizhou Fan, Zhenshuai, Sun. The invention relates to a system and method for directional regulation of biochar by cascade temperature air oxidation. (Patent number ZL. 202010329470.8)

[2] **Baojun Yi**, Qiaoxia Yuan, Hongliang Cao, Wenjuan Niu, Shuiping Yan, Ming Wang, Daofeng Mei, Zhigang Liu, Jianguo Zhang. The invention relates to a system and method for directional regulation of biochar by cascade temperature air oxidation. (Patent number ZL. CN201720751187.8)

[3] **Baojun Yi**, Zhichen Zheng, Qiaoxia Yuan, Guiying Lin, La Song, Qizhou Fan, Zhongbi Luo, Rujiao Jiang. A combustion furnace for high ash biomass pellet fuel. (Patent number ZL. 201920366589.5)

[4] Liqi Zhang, **Baojun Yi**, Zhelin Luo, Ke Chen, Chuguang Zheng. An oxy-fuel combustion flue gas purification device. (Patent number ZL.201310215434.9)

[5] Liqi Zhang, **Baojun Yi**, Haiyue Zhu, Peng Hu, Chuguang Zheng. A method used for pulverized coal steam cycle adjustable oxy-fuel combustion boiler. (Patent number ZL.201210549692.6)

[6] Liqi Zhang, Zhihui Mao, **Baojun Yi**, Zhaohui Liu, Haiyue Zhu, Cong Pan, Chuguang Zheng. A pulverized coal oxy-fuel flameless combustion method and system. (Patent number: ZL.201310624080.3)