

## **JIAHAO CHEN**

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### **PROFESSIONAL APPOINTMENTS**

*Research Fellow* of Flue Gas Desulfurization Engineering Technology Research Center, China

*Research Member* of Water Supply and Drainage Engineering Laboratory, Sichuan University, China

*Research Member* of Kida Environmental Biotechnology Research Center, Sichuan University, China

*Research Assistant* of Environmental Science and Engineering Laboratory, Sichuan University, China

*Assistant Engineer* of Xi'an Ecology and Environmental Bureau, Shaanxi Province, China

*Assistant Engineer* of Dongying Beikong Water co., LTD, Shaanxi Province, China

*VP of Student Union*, College of Architecture and Environment, Sichuan University, China

### **EDUCATION**

**2020 Bachelor of Environmental Engineering, Sichuan University (SCU), China**

**GPA : 3.64/4.0      Rank : 2/57**

#### **Major Courses:**

**Math Chemistry:** *Fundamentals of Modern Chemistry I (85), Linear Algebra (91), Probability Statistics (88), University Physics II(91), Physical Chemistry I (86), Basis of Computer Technology (92), R for Beginners (92)*

**Environment related:** *Solid Waste Treatment (89), Microbiology for Environment Engineering (93), English of Environmental Engineering (90), Environmental Pollution Control Material (88), Energy and Environment (94)*

**Engineering related:** *Principle of Chemical Engineering (89), Ecological Engineering (92), Engineering Mechanics (89), Water Pollution Control Engineering (93), Air Pollution Control Engineering (92)*

### **RESEARCH INTERESTS**

Biological and Membrane-based Water Treatment Processes

Biotransformation and Fate of Wastewater Contaminants

Environmental Nanotechnology

Environment and Energy

Water Resources

### **HONORS AND AWARDS**

2019 *Recipient*, the National Science Foundation of China (*Chinese Highest-level Research Fund*)

2019 *Outstanding Volunteer and Participants*, the Fifth College Students Structural Design Competition of Sichuan (*Provincial Competition*)

2019 *Best Assistant Engineer (Top 1% among organization)*, Dongying Beikong Water co. LTD, China

2018 *Single 1<sup>st</sup>-class Scholarship* of Sichuan University (*Top 1% among University*), China

2018 *Outstanding Student* of College of Architecture and Environment (*Top 1% among college*), Sichuan University, China

2017 *National Third Prize*, the 1<sup>st</sup> China College Student "Energy Intelligence Future" Innovation and Entrepreneurship Competition (*Chinese Top-class Environmental Competition*)

2017 *3<sup>rd</sup>-class of Ying-Han Scholarship* of Sichuan University (*Top 3% among University*), China

2017 *Comprehensive 3<sup>rd</sup>-class Scholarship* of Sichuan University, (*Top 3% among University*), China

2017 *Outstanding Student Leaders* of Sichuan University, China

2017 National Computer Rank Examination Certificate of Level 2

2017 *7<sup>th</sup> Team Prize* of the First Session Sports Dancing Competition of Sichuan University, China

2017 *2<sup>nd</sup> Team Prize* of Chinning of Sichuan University, China

2016 *Outstanding Volunteer*, the 120<sup>th</sup> Anniversary of Sichuan University, China

## **RESEARCH EXPERIENCE**

### **Current Project:**

#### **Effect of Nano-TiO<sub>2</sub> on WAS Alkaline Anaerobic Fermentation, Oct.2018- Present**

*Advised by Professor: Lina Pang, Environmental Science and Engineering Laboratory*

- Assume nano-TiO<sub>2</sub> may perform its toxicity to anaerobic fermentation microorganisms in an alkaline situation.
- Analyze the production of VFAs and the changes of microbial functional groups, nano-TiO<sub>2</sub> show great toxicity to some anaerobic fermentation colony; conduct ADM1 Model to verify the results by myself; the correlation coefficients( $R^2$ ) > 0.98
- Confirm the toxicity of nano-TiO<sub>2</sub> to anaerobic fermentation microorganisms and improve the reutilization and reduction of sludge disposal.

### **Completed Projects:**

#### **Mechanism of Microbial Aerobic Composting of Crop Straw, Jun.2019 –May.2019**

*Advised by Professor: Zhaoyong Sun, Kida Environmental Biotechnology Research Center*

- Changed the long cycle of anaerobic compost and the pollution of straw burning; focused on the Nitrogen Loss during the high-temperature period.
- Used auxiliary material, amino acid hydrolysate, to adjust the ration of carbon to nitrogen (C/N) and added urea after high-temperature period.
- Slightly accelerated the production of humic acid, and the abundance of nitrifying bacteria increased, which proved the supplement of nitrogen assist nitrifying bacteria grow.

#### **Effect of Micron-sized Zero Valent Iron on Anaerobic Fermentation, Oct.2018 – Mar.2019**

*Supervised by Professor: Lina Pang, Environmental Science and Engineering Laboratory*

- Potential effects of mZVI on the performance of WAS anaerobic fermentation and shift of microbial community and functions were assessed
- Analyzed the production of VFAs, concluded that the existence of mZVI enhanced the function of hydrolysis–acidification in waste activated sludge
- The presence of mZVI had no significant impact on the shift of microbial community, but functional group relevant to anaerobic fermentation were stimulated by mZVI

#### **Combined Ultrafiltration–Reverse Osmosis Process, Sep.2018 – Nov.2018**

*Advised by Professor: Baicang Liu, Water Supply and Drainage Engineering Laboratory*

- Applied the Combined Ultrafiltration–Reverse Osmosis Process into external reuse of shale gas flowback and produced water; used polyvinylidene fluoride hollow fiber membranes and Aromatic polyamide composites as core components of this process.
- By mechanical screening and pressure pushing, contaminants were removed, and modified the process parameters, mainly pressure, for best result.
- The performance of UF-RO was effective and stable. The removal of turbidity and total dissolved solid reached at 99.9% and 99%, respectively.

#### **Activated Carbon Based on Bamboo, Dec.2017 – Sep.2018**

*Advised by Professor: Xia Jiang, Flue Gas Desulfurization Engineering Technology Research Center*

- Prepared by disposable bamboo chopsticks, after carbonized and made mesopores, activated carbon based on bamboo were added urea as a nitrogen source to modify; used to remove carbon from biogas.
- Used a pressure swing adsorption device to simulate biogas, tested the adsorption and separation ability of modified activated carbon on CO<sub>2</sub>, and desorption was conducted by myself to evaluate the regenerability of the activated carbon.
- Cooperated with teammates for preparing novel nitrogen doped activated carbon based on bamboo; however, the activated carbon showed a poor desulfurization performance.

## **PUBLICATION**

- Guo, R., Liu, X., Hu, Y., Li, J., Chen, J., Pang, L., & Yang, P. (2020). Stronger Stimulation of Waste Activated Sludge Anaerobic Fermentation by a Particular Amount of Micron-Sized Zero Valent Iron. *Applied biochemistry and biotechnology*

## **PROFESSIONAL EXPERIENCE**

### **Assistant Engineer, Dongying Beikong Water co. LTD, Shannxi, July,2019-Present**

Assist in monitoring pollutant contents, such as COD, TP, TN, NH<sub>4</sub>-N in Central Control Room. In addition, sample at inlet, outlet to detect the quality of the water source and adjust the dosages of reagent such as PCL.

### **Assistant Engineer, Xi'an Ecology and Environmental Bureau, Jan.2019- Present**

Assist in implementing Boiler Improvement Project to reduce the emission of NO<sub>x</sub>. In addition, help put forward some suggestions on the selection of dust-cleaning apparatus for companies.

## **TEACHING EXPERIENCE**

### **High School Chemistry& Biology Lecturer, Jan.2017-Aug.2017**

Tutoring senior high school students in chemistry and biology in every holiday, such as metallic element properties and its reaction equations, heredity and genes. In addition, expanding the knowledge of microorganism and mass transfer in modern industries.

## **PRESENTATIONS AND CONFERENCES**

**Jiahao Chen\***, Haoding Yan, "National Students Innovation and Entrepreneurship Training Program," *Defense Presentation and Speaker*, Chengdu, China, 2019.5

Yinghao Chu, **Jiahao Chen\***, "China Ecology and Environment Forum-Economic," *Invited Participation*, Chengdu, China, 2019.3

Wenqing Chen, **Jiahao Chen\***, "Japan-China Environmental Restoration Sub Forum," *Invited Participation*, Chengdu, China, 2019.3

**Jiahao Chen\***, "College Students Structural Design Competition of SCU," *Defense Presentation and Speaker*, Chengdu, China, 2018.11

**Jiahao Chen\***, Jiajie Pang, Jianbo Dai, Manna Liu, "China College Student "Energy Intelligence Future" Innovation and entrepreneurship Competition," *Defense Presentation and Poster Publisher*, Qingdao, China, 2018.11

**Jiahao Chen\***, Changhao Yu, Jia Xu, "Challenge Cup of Student Science Festival of SCU," *Defense Presentation and Speaker*, Chengdu, China, 2018.4

**Jiahao Chen\***, Zhenwen Yang, Haoding Yan, "National Students Innovation and Entrepreneurship Training Program," *Defense Presentation and Speaker*, Chengdu, China, 2018.3

**Jiahao Chen\***, "College Students Structural Design Competition of SCU," *Defense Presentation and Speaker*, Chengdu, China, 2017.11

## **PROFESSIONAL SKILLS**

### **Professional Field**

Familiarity with EPA Method for Water and Gas Wastes Analysis

Ability of Planning, Organizing and Operating Lab Experiments

Basic Microbial Analysis

### **Advanced Computer Skill**

Origin, Python, R Programming Language, Auto CAD