CHENG WANG

Location: Hangzhou, China
+86-19550209892 wangcheng_1215@126.com

EDUCATION

Zhejiang University of Technology, College of Chemical Engineering Sep.2021 – Jun.2024(Expected)
Master of Science in Engineering, Major: Chemical Engineering and Technology Hangzhou, China

- Main Course: Reaction Engineering, Multiphase Flow and Mass Transfer in Chemical Engineering, Modern Separation Technology, Optimization of Chemical Processes, Computer Simulation of Chemical Processes, etc.

Qingdao University of Science and Technology, College of Chemical Engineering Sep.2017 – Jun.2021
Bachelor of Science in engineering, Major: Chemical Engineering and Technology Qingdao, China

- Main Course: Principles of Chemical Engineering, Chemical Reaction Engineering, Transport Phenomena, Separation Engineering etc.

Thesis title: "Research on Oxidation Process of High-Density Polyethylene Wax" *Advisor*: *Assoc. Prof. Chuanxing Wang*

PUBLICATIONS & PROGRAM

- **C. Wang**, F. Zhan, S. Wang et al. Molten salts coupled Ni/Al_2O_3 for hydrogen from CH_4 pyrolysis at mild temperature in bubble-cap reactor. ***Fuel*** (2024). https://doi.org/10.1016/j.fuel.2024.131612.
- Y. He, Y. Hou, **C. Wang** et al. Removal of tar from waste textiles by molten carbonates pyrolysis in bubbling reactor. ***Fuel*** (2023). https://doi.org/10.1016/j.fuel.2023.128823.
- X. Jia, Y. Wei, R. Si, **C. Wang** et al. Catalytic production of H_2-rich syngas from cellulose pyrolysis under nickel metal fog with molten carbonates. ***Int. J. Hydrog. Energy*** (2024). https://doi.org/10.1016/j.ijhydene.2024.06.001.
- **C. Wang**, Y. Wei, F. Zhan. A process and device for methane steam reforming using a molten salt coupled catalyst. ***Chinese utility model patent***. Under review.
- Y. Wei, X. Liu, D. Ji, **C. Wang** et al. Research on the Mechanism of Methane Pyrolysis Catalyzed by Renewable Molten Salt Nickel Metal Fog. Exploration Project of Zhejiang Provincial Natural Science Foundation. The 5th applicant.

RESEARCH EXPERIENCE

Study on the catalytic pyrolysis of methane in molten salt at mild temperature Oct.2022 – Apr.2024
Master thesis, Advisor: Assoc. Prof. Yi Wei

- Investigated the effects of various factors on the catalytic methane pyrolysis process.
- Utilized analytical techniques such as SEM-EDS, XRD, in-situ FTIR, and Raman spectroscopy to investigate the catalyst's state before, during, and after the reaction.
- Explored the mechanisms underlying the catalytic methane decomposition process, focusing on the interactions between Ni/Al_2O_3 and carbonate.
- Conducted cold model experiments to analyze bubble dynamics under reaction conditions and calculate relevant kinetic data, including apparent activation energy and reaction rate.
- Responsible for developing the experimental plan, conducting experiments, analyzing the obtained products, and contributing to the writing of the research paper.

Study on waste textile tar pyrolysis in molten carbonates and mechanism May.2022 – Feb.2023
Advisor: Assoc. Prof. Yi Wei

- Background: Conducted research on the pyrolysis of waste textile tar in molten carbonates and investigated the underlying mechanisms.
- Responsible for conducting experiments and analyzing the products by introducing the tar gas produced from the pyrolysis of waste textiles into a stirred bubble column reactor containing molten carbonates.
- The improvement in the removal effect is substantial.

Catalytic pyrolysis of cellulose for H_2-rich syngas production in molten carbonates Dec.2021 – Apr.2023

Advisor: Assoc. Prof. Yi Wei

- Background: Conducted research on the homogeneous catalytic pyrolysis of cellulose in molten carbonates to produce H_2-rich syngas, utilizing dissolved Ni as a metal fog catalyst.
- Responsible for implementing experiments to evaluate the effect of varying the dosage of Ni catalyst on the synthesis gas yield and H_2 selectivity.
- Explored an optimal reaction condition for catalyzing cellulose pyrolysis.

SCIENTIFIC COMPETITIONS

College Students Chemical Engineering Principle Innovation and Design Competition, Third Prize in Qingdao University of Science & Technology Sep.2019 – Oct.2019

- Responsible for process simulation and optimization.
- The distillation separation process of isopropyl alcohol and ethyl acetate from wastewater was designed by Aspen Plus.

INTERSHIP EXPERIENCE

SINOPEC QILU PETROCHEMICAL COMPANY Oct.2020 – Nov.2020

Production Intern Zibo, China

- Task Description: Design the tower in the process according to the requirements of the department.
- Responsibilities:
  1. Analyzed the general situation of the existing devices, and explained the target products and by-products
  2. Understood the production principle and performed material balance calculation
  3. Designed the tower device

CHAMBROAD PETROCHEMICALS COMPANY Jul.2021 – Aug.2021

Research and Development Intern Binzhou, China

- Task Description: According to the requirements of the department, designed a catalyst for industrial gasoline production.
- Responsibilities:
  1. Analyzed the advantages and disadvantages of existing catalysts and chose the direction of catalyst design
  2. Assisted the doctor and master in the group to conduct catalyst preparation experiments
  3. Evaluated the performance of the prepared catalyst

HONORS & AWARDS

First Class Academic Scholarship(¥12K), Zhejiang University of Technology Nov.2023
Second Class Academic Scholarship(¥8K), Zhejiang University of Technology Oct.2022
Graduate Scholarship(¥8K), Zhejiang University of Technology Sep.2021
Individual Scholarship(2 times, ¥100), Qingdao University of Science and Technology Apr.2018 & Oct.2018
Outstanding graduate, Zhejiang University of Technology Mar.2024
Activity Activist(2 times), Qingdao University of Science and Technology Apr.2019 & May.2020
Outstanding Volunteer, Qingdao University of Science and Technology Oct.2018

SKILLS

- Instruments: GC-2014C, GC-MS, SEM, Elementar Vairo MACRO element analyzer, Thermo Scientific Nicolet iS20 FT-IR Fourier Transform in-situ Infrared spectrometer, TGA, IKA C2000 calorimeter, etc.
- Software: Origin, JADE, Auto CAD, Omnic, Chemdraw, Matlab, Aspen Plus, etc.
- Language: English, Mandarin(native)