Zhiyu Qi

MOTIVATION

An enthusiastic, adaptive, and fast learning person with a broad and acute interest in the discovery of innovative technologies.

FUTURE INTERESTS

Green Chemistry, Heterogeneous Catalysis, Material Science, etc.

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RESEARCH EXPERIENCE

Sep 2019 – Jun 2020

Subject • The influence of plasma pretreatment on CuO_x for NO removal by CO

❖ **Objective**

- ✧ The copper oxide catalyst pretreated by plasma could obtain both nearly 100% conversion and selectivity at around 200 °C.
- ✧ The adsorption energies of NO on various copper oxides with different valance states were calculated based on DFT.

Jan 2021 – Jun 2023

Subject • NO_x Removal From Stationary Flue Gas

❖ **Objective**

- ✧ The synthesis of manganese-based catalysts, along with kinetic analysis and the investigation of mechanism at elementary steps was conducted. Additionally, a structure-activity relationship was developed.
- ✧ The carbide slag, modified by us, demonstrated a remarkable NO_2 adsorption capacity exceeding 7.01 mmol/g. Furthermore the adsorption kinetics were simulated.
- ✧ Mentored two undergraduate students in their final projects.

EDUCATION EXPERIENCE

[MECs] Tsinghua University, Beijing, China

Aug 2020 – Jun 2023

Major: Chemical Engineering and Technology, **GPA:** 3.59

Thesis Title "Efficient Mn-based Catalysts Design for NO Oxidation and Carbide Slag Modification for NO2 adsorption"

[Bachelor] Tsinghua University, Beijing, China

Aug 2016 – Jun 2020

Major: Chemical Engineering and Industrial Biological Engineering, **GPA:** 3.29

Principal Subjects: Linear Algebra, Principles of Biochemistry, Physical Chemistry, Chemical Reaction Engineering, etc.

SKILLS

Catalyst Synthesis via Various Methods.
Characterization Measurements: XRD, TPD,BET, SEM, TEM, in-situ DRIFTS, XAS, in-situ Raman, etc.
Software: Matlab, Aspen, LabVIEW, Athena, Artemis, VASP, etc.

PUBLICATIONS

[1] Z. Qi, B. Chen, B. Man, Z. Li, K. Feng, B. Yan, G. Luo, Unraveling the contribution of valence state to the NO oxidation activity of manganese oxides, Chem. Eng. J., 462 (2023) 142173

BEYOND ACADEMIC

✧ Badminton, jogging, swimming, reading

REFERENCES

Advisor: Dr. Yong Wang
Website: https://voiland.wsu.edu/faculty-staff/yong-wang/