

Qingsong Lei

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EDUCATION

NANJING UNIVERSITY

College of Engineering and Applied Sciences

Bachelor of New Energy Science and Engineering

SHANGHAI JIAO TONG UNIVERSITY

Exchange Student

HARVARD UNIVERSITY

Research Trainee Advisor: Prof. Hadi Shafiee

NANJING, CHINA

Sep.2018-June.2022

SHANGHAI, CHINA

Jul.2019-Aug.2019

CAMBRIDGE, MASSACHUSETTS

Jan.2022-Jun.2022 (Expected)

EXPERIENCE

Prof. Huigang Zhang's Laboratory

Learning & basic operation

NANJING, CHINA

August 2020 – October 2020

- Project: **Gold-supported nitrogen-doped strontium titanate for photocatalytic degradation of VOCs**
 - Prepared gold-loaded nitrogen-doped strontium titanate
 - Characterize structure and morphology

Prof. Ye Zhang's Group

Assistant participation & Independent project

NANJING, CHINA

September 2020 –

- Project: **Enabling stable zinc anode via in situ deposition on CNT-based thin films**
 - Prepared materials, reviewed literature, recorded experimental data
 - Made the CNT tube into a network structure as a current collector
 - Plasma treatment of electrodes to obtain hydrophilicity
 - Optimized electrolytes and prepared electrolytes with different concentration gradients
 - Tested the battery performance and measured cyclability and stability
- Project: **Realizing high zinc utilization in zinc-ion battery**
 - Reviewed literature about high-performance zinc anode and tried many different strategies and materials
 - Assisted project leader in optimizing the method used in the paper
 - Undertook the tasks of assembling batteries and testing electrochemical performance
- Project: **Advanced neural electrode based on hydrogel for brain-machine interface (Ongoing research)**
 - Reviewed literature to search drawbacks about present neural electrodes
 - Tried to utilize characteristics of hydrogel to endow neural electrodes with more meaningful functions
 - Combined carbon nanotube with hydrogel to manufacture a flexible and bio-adhesive 'Utah Array'

HONORS

- State grants *Sep.2019*
- National Inspirational Scholarship *Oct.2019*
- American Alumni Fund (1%) *Nov.2019*
- Outstanding Class Leader (one only) *May.2020*
- People's Scholarship *Nov.2020*

ACTIVITIES

- Served as leader of the New Energy Science and Engineering major *2019-2020*
- Organized a society research to Liangshan, Xichang *2019*
- Participated in defence of Zheng Gang's overseas scholarship *2020*

LANGUAGES & SKILLS

- Languages: English (Fluent), IELTS 7.0
- Highly proficient in Microsoft Office, Land, Auto CAD, Origin, Adobe Photoshop, Adobe Illustrator
- Good at sports and music and represent the college in the competition as an athlete

PUBLICATIONS

- Yiding Jiao, Fangyan Li, Xin Jin, **Qingsong Lei** et al. "Engineering Polymer Glue towards 90% Zinc Utilization for 1000 Hours to Make High-Performance Zn-Ion Batteries", *Adv. Funct. Mater.* 2021, 2107652.
- Yuchen Liu, **Qingsong Lei**, Huanli Zhu. "Research on the mechanism of reflow furnace temperature curve based on steady-state heat conduction equation", *Encyclopedia Forum*. 2021 Oct ISSN2096-3661.