

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

NANJING, CHINA

Sep.2018-June.2022(Expected)

SHANGHAI, CHINA

Jul.2019-Aug.2019

EXPERIENCE

Prof. Huigang Zhang's Laboratory

Learning use of laboratory equipment

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

Basic operation & Own project

NANJING, CHINA

September 2020 –

- Project: **Enabling stable zinc anode via in situ deposition on CNT-based thin films**
 - Material preparation, literature review, experimental data recording, instrument control and operation
 - Made the CNT tube into a network structure as a polar fluid
 - Plasma treatment of electrodes to obtain hydrophilicity
 - Preparation of electrolytes with different concentration gradients
 - Tested the battery performance and measured cyclability and stability
- Project: **Engineering polymer glue towards 90% zinc utilization for 1,000 hours to make high-performance Zn-ion batteries**
 - Prepared polymer glue, producing a viscous and glutinous texture and coated it on Zn foil
 - Tested galvanostatic charge-discharge of symmetric batteries based on polymer glue-coated and bare Zn foils at the current density of $5 \text{ mA} \cdot \text{cm}^{-2}$ under 90% Zn utilization rate and achieved cycles more than 1000 hours
- Project: **Gel-based brain-computer interface (Ongoing research)**
 - Prepared a gel-based brain-computer interface based on the Utah array and implanted in the skull of a mouse and detected electrical signals
- Project: **Exploration of cathode materials for zinc-ion batteries (Ongoing research)**

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
 - Conducted this survey as the team leader and successfully wrote research papers
- Participated in the defense 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.