

# Qingsong Lei

• web: <https://qingsonglei.cn/> • [qingsong\\_lei@u.nus.edu](mailto:qingsong_lei@u.nus.edu)

## EDUCATION

---

NANJING UNIVERSITY

NANJING, CHINA

College of Engineering and Applied Sciences

Bachelor of New Energy Science and Engineering

Sep.2018-June.2022

SHANGHAI JIAO TONG UNIVERSITY

SHANGHAI, CHINA

Exchange Student

Jul.2019-Aug.2019

HARVARD UNIVERSITY

CAMBRIDGE, MASSACHUSETTS

Research Trainee Advisor: Prof. Hadi Shafiee

Jan.2022-Jun.2022

## EXPERIENCE

---

Prof. Huigang Zhang's Laboratory

NANJING, CHINA

Learning & basic operation

August 2020 – October 2020

- Project: **Gold-supported nitrogen-doped strontium titanate for photocatalytic degradation of VOCs**

- Prepared gold-loaded nitrogen-doped strontium titanate
- Characterized structure and morphology

Prof. Ye Zhang's Group

NANJING, CHINA

Assistant participation & Independent project

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
  - Made 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 Nov.2019
- Outstanding Class Leader May.2020
- People's Scholarship (twice) Nov.2020
- Alishan Scholarship (4 only from NJU) Dec..2021

## LANGUAGES & SKILLS

---

- Languages: English (Fluent), IELTS 7.0
- Highly proficient in Microsoft Office, Land, Auto CAD, Origin, Adobe Photoshop, Adobe Illustrator

## PUBLICATIONS

---

- Hui Chen, **Qingsong Lei**, Gaojian Li, Srisruthi Udayakumar, Joseph M. Hardie, Hadi Shafiee. "At-Home Sperm Banking Kits" (submitted) (Book chapter published by *Springer Nature*)
- Hui Chen<sup>1</sup>, Sungwan Kim<sup>1</sup>, Joseph Michael Hardie<sup>1</sup>, Manoj Kumar Kanakasabapathy<sup>1</sup>, Supriya Gharpure, Prudhvi Thirumalaraju, Sahar Rostamian, Srisruthi Udayakumar, **Qingsong Lei**, Gi Won Cho, and Hadi Shafiee, "Deep learning-assisted sensitive detection of fentanyl using a bubbling-microchip", *Lab on a chip* (submitted)
- 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.