

Qingsong Lei

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EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE

Chemistry Department

Ph.D. Student Advisor: Prof. Xiaogang Liu & Co-supervisor: Prof. Yuxin Liu

SINGAPORE

Aug.2022-

NANJING UNIVERSITY

College of Engineering and Applied Sciences

Bachelor of New Energy Science and Engineering

NANJING, CHINA

Sep.2018-June.2022

SHANGHAI JIAO TONG UNIVERSITY

Exchange Student

SHANGHAI, CHINA

Jul.2019-Aug.2019

HARVARD UNIVERSITY

Research Trainee Advisor: Prof. Hadi Shafiee

CAMBRIDGE, MASSACHUSETTS

Jan.2022-Jun.2022

EXPERIENCE

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**
 - 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: **Advanced neural electrode based on hydrogel for brain-machine interface**
 - 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'

Prof. Hadi Shafiee's Group

CAMBRIDGE, MASSACHUSETTS

Project participation & Paper Writing

September 2020 –

- Project: Deep learning-assisted sensitive detection of fentanyl using a bubbling-microchip
 - Fabricated microfluidic chips by using laser cut
 - Made nanoparticles to detect drug

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

SKILLS

- Computer Skills: Matlab (Can be used to do machine learning), Python, C language
- Basic Skills: Microsoft Office, Land, Auto CAD, Origin, Adobe Photoshop, Adobe Illustrator
- Cleanroom experience for nano/microfabrication & Experience with cell culture & Electrical chemistry synthesis
- Learning in Progress: Comsol Multiphysics, STM32, MSP430

PUBLICATIONS

- Hui Chen, **Qingsong Lei**, Gaojian Li, Srisruthi Udayakumar, Joseph M. Hardie, Hadi Shafiee. "At-Home Sperm Banking Kits" (Book chapter published by *Springer Nature*)
- Hui Chen¹, Sungwan Kim¹, Joseph Michael Hardie¹, Manoj Kumar Kanakasabapathy¹, 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*
- 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.