

Zheng Qiao

+6582438024 | zheng.qiao@u.nus.edu

EDUCATION

Emory University (GPA3.7)

Bachelor of Science in Chemistry and Applied Mathematics (Double Majors)

Atlanta, GA

Aug 2014- May 2018

Northwestern University (GPA3.8)

Master of Science in Materials Science and Engineering

Evanston, IL

Sept 2018-Dec 2019

RESEARCH & PROJECTS EXPERIENCE

Measurement of Interfacial Acid/Base Reactions with 4-Mercaptobenzoic acid (pMBA)

Research Assistant, Advisor: Prof. Tim Tianquan Lian

Emory University

Aug 2017 – Jan 2018

- Applied cyclic voltammetry (CV) scanning technique to detect the contaminant on the surface of polycrystal gold
- Investigated the deprotonation phenomenon of 4-Mercaptobenzoic acid (pMBA) and redox reactions using Vibrational sum Frequency Generation spectroscopy (SFG) and CV under different pH solutions

Transient Wireless Spinal Cord Stimulator Fabrication

Independent Researcher, Advisor: Prof. John A. Rogers

Northwestern University

Sept 2018 – Feb 2020

- Fabricated, assembled and tested major parts of the device (Molybdenum/Magnesium coils and electrode) via microfabrication process, including laser cutting, photolithography and wet etching
- Collaborated with medical researchers to analyze the functionality of spinal cord during animal experiments

Electronics Encapsulation Materials Research

Independent Researcher, Advisor: Prof. John A. Rogers

Northwestern University

Nov 2018 – Feb 2020

- Designed & Grew thin films of SiN_x and SiON using Plasma-Enhanced Chemical Vapor Deposition (PECVD)
- Performed both short-term and long-term degradation tests on various recipes of SiON
- Evaluated thickness and film quality of SiON thin films using Scanning Electron Microscope (SEM) and Electrochemical Impedance Spectroscopy (EIS)

3D Embedded Printing of Bioelectronics

Independent Researcher, Advisor: Prof. Nanjia Zhou

Westlake University

Apr 2020 – Sept 2020

- Design Conductive Inks using PEDOT:PSS/Ag-TPU to achieve 3D Embedded Printing of Bioelectronics
- Characterize the rheologic properties of both inks and supporting reservoir
- Design functional bioelectronics and Fabricate using customized 3D Embedded printing machine

PROFESSIONAL EXPERIENCE

DuPont Shanghai

Intern at R&D Center

Shanghai, China

Summer 2015

- Gathered and integrated information about details of competitors' polymer products
- Compared the information above with DuPont's products to evaluate potential competitions
- Tracked the growth of the nutrient enhanced corn and gave a presentation in front of team manager

BASF Shanghai

Research Intern at R&D Campus

Shanghai, China

Jul 2018- Aug 2018

- Gathered over a hundred TDS and MSDS of commercial photopolymers for 3D printing
- Designed new photopolymer for dental 3D printing and examined its mechanical properties (Young's modulus, tensile stress)
- Performed daily maintenance on three 3D printers, including changing main parts and fixing fatal issues
- Investigated and tested printing stability of BASF's materials on one of the 3D printers by tuning over 5 parameters

Neurolux, Inc.

Part-time Research Engineer

Evanston, IL

June 2019- Dec 2019

- Manufactured products, including soldering electronic parts and encapsulating protecting materials (PDMS, Parylene)
- Performed quality control process of over five hundred devices and resolved some of the normal issues

HONORS & AWARDS

- Dean's list at Emory University (2014Fall & 2015Fall & 2016Spring)

PUBLICATIONS

- J. Zhao, H. Guo, J. Shen, **Z. Qiao**, A. AlDubayan, J. A. Rogers, Tunable silicon oxynitride as water barrier for transient electronics, *In Preparation*
- J. Zhao, H. Guo, **Z. Qiao**, D. D'Angrea, C. Franz, J. A. Rogers, Wireless controlled-bioresorbable electronic system

for peripheral nerve regeneration, *In Preparation*

LEADERSHIP & ACTIVITIES

Northwestern Chinese Students & Scholars Association (NUCSSA)

Vice President of Activities

Oct 2018-Dec 2019

- Organized and operated The Voice of Northwestern Chinese Sing Contest event
- Planned and coordinated 2019 Spring Festival Gala of Northwestern

TECHNICAL SKILLS

- **Lab Techniques:** PECVD, SEM, TEM, Cyclic Voltammetry, UV-Vis Absorption Spectrum, NMR, Isothermal Titration Calorimetry (ITC), DSC, Photolithography Skills
- **Programming & Software:** Java, MATLAB, Mathematica, SQL, Python