

MELISSA STOK

Berkeley, CA 94720

(+1)914-406-3394 ♦ mstok@berkeley.edu

EDUCATION

University of California Berkeley

Berkeley, CA

PhD Student Materials Science and Engineering

Massachusetts Institute of Technology

Cambridge, MA

BS Materials Science, Electrical Engineering and Computer Science June 2024

GPA: 5.0

Awards: Making and Designing Materials Engineering Contest 2022 Second Place, MIT Energy Initiative Energy Slam 2023 Second Place

COURSEWORK

Digital Systems Laboratory; Electronic, Optic, and Magnetic Properties of Materials; Structure and Mechanics of Materials; Thermodynamics; Physics of Energy; Circuits and Electronics; Micro/Nano Processing Technology; Fundamentals of Programming

SKILLS

Modeling and Analysis

Autodesk Inventor, IBM SPSS Statistics, Mathematica, SPICE

Laboratory Techniques

XRD, EIS, Spin Coating, Schlenk Line, Glovebox, Cleanroom

Software

Python, Java, C++, Verilog, Assembly, Mathematica, Adobe

Languages

trilingual in French, Dutch, English

RESEARCH EXPERIENCE

Balsara Research Group, Berkeley, CA

present

Graduate Student Researcher

- Studying polymer movement in solid state lithium ion battery electrolytes

Organic and Nanostructured Electronics Lab (ONE), Cambridge, MA

Sep 23-June 24

Undergraduate Researcher - Perovskite Solar Cell Electrodes

- Synthesized Perovskite Solar Cells of various compositions and explored alternate electrode materials to gold
- Conducted literature searches to better understand alternate perovskite compositions and current techniques

MIT Laboratory for Electrochemical Interfaces, Cambridge, MA

Feb 22-June 23

Undergraduate Researcher - Solid State Electrolyte Materials

- Synthesized and characterized thin film polymer-ceramic electrolytes for composite structure analysis
- Analyzed impedance and structure through films of various chemistries, thicknesses, and substrate types

Technion University Photocatalysis Laboratory, Haifa, IL

May 22-Aug 22

Undergraduate Researcher - Photocatalysis Reactor Design

- Designed and tested a flow reactor to filter nanorods for photocatalytic generation of H_2 gas for energy storage applications
- Used CAD and other tools to design reactor and worked with machine shop engineers to build all parts

ENGINEERING EXPERIENCE

MIT Office of Sustainability, Cambridge, MA

Present

Waste Systems Student Researcher

- Developed and tested new waste collection systems and waste management programs and education on campus

- Carried out pilot programs for expanding food waste collection in all undergraduate dorms

MIT Multivariable Calculus, Cambridge, MA

Present

Lecturer and Teaching Assistant

- Presented new material to students in lecture format during Fall 2022 semester
- Held office hours, recitations, exam reviews, and graded problem sets and exams

Advanced Micro Devices (AMD), Fort Collins, CO

Summer 2023

SRAM Cores Circuit Design Intern

- Used SPICE and other circuit design and analysis tools to design and simulate SRAM products
- Filed patent application for power delivery systems for the next generation of X3D stacking

Recycle Track Systems, New York, NY

Summer 2021

Sustainability Research and Data Analyst Intern

- Optimized waste auditing procedure by creating mathematical models to track and analyze waste data
- Researched waste policies and goals to support sustainability team

MICROOLED, Grenoble, FR

Spring 2021

R&D Characterization Intern

- Characterized electric and electro-optic properties of micro-screen circuits as part of R&D team
- Developed python tool to aid in future characterization

MIT Environmental Solutions Initiative, Cambridge, MA

Summer and Fall 2020

Rapid Response Group Environmental Policy Intern

- Researched and addressed current environmental issues such as oil storage deregulation and microplastic pollution
- Produced op-eds, white papers, fact sheets, and policy overviews

LEADERSHIP AND INVOLVEMENT

MIT Student Sustainability Coalition Founder and Co-Leader

Student Representative for the MIT Climate Nucleus

MIT Running Club President, MIT Alpine Ski Team Captain, MIT Women's Club Soccer Team

World Wide Opportunities on Organic Farms Volunteer