PHILOTHEI SAHINIDIS

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EDUCATION

University of California - Berkeley — **Berkeley, CA**
Ph.D. in Electrical Engineering and Computer Science — *Aug. 2023 – present*
Advisor: **Dr. Ana Arias**

Georgia Institute of Technology — **Atlanta, GA**
B.S. in Materials Science and Engineering with a concentration in Functional Materials — *May 2023*
Study Abroad: **Georgia Tech Lorraine** (Spring '21), **Nanyang Technological University** (Spring '22)

AWARDS

- **National Science Foundation Graduate Research Fellowship** — *Awarded 2024*
- **Best Materials Science Capstone Project** (jointly with 4 peers), Georgia Institute of Technology — *2023*

EXPERIENCE

University of California - Berkeley, Electrical Engineering — **Berkeley, CA**
Graduate Research Assistant (Dr. Ana Arias) — *Aug. 2023 – Present*

- Investigating the influence of materials processing on structure and charge storage mechanisms in printed microbattery systems
- Developing biomimetic laser-structured composite anodes and characterizing their influence on battery stability

Georgia Institute of Technology Senior Design Project — **Atlanta, Georgia**
Design Group Member — *Jan. 2023 – May 2023*

- Conceived, fabricated, and tested PEDOT:PSS-functionalized graphene supercapacitor electrodes jointly with 4 peers
- Spearheaded electrical characterization to correlate charge-discharge and cyclic voltammetry results to materials processing parameters

Georgia Institute of Technology, School of Interactive Computing — **Atlanta, GA**
Undergraduate Research Assistant (Dr. Josiah Hester) — *Aug. 2022 – March 2022*

- Designed, prototyped, and characterized low-power oscillators, voltage multipliers, and soil sensors for microbial fuel cell-powered systems
- Guided fuel cell maintenance and materials selection of fuel cell electrodes and proton/gas exchange membranes

Panasonic Energy of North America — **Sparks, NV**
Lithium-Ion Battery Materials Engineering Intern — *May 2022 – Aug. 2022*

- Deployed competitor and lifetime analysis of inactive materials by dissecting cells and employing hardness testing, SEM, and EDS
- Developed methodology to determine corrosion rate and mechanism in organic electrolyte using electrochemical techniques, SEM, and EDS

Hilti Corporation — **Schaan, Liechtenstein**
Diamond Materials Development Intern — *Aug. 2021 – Dec. 2021*

- Correlated diamond fracture behavior with drilling speeds and depths to determine diamond-steel compatibility in diamond core bits
- Analyzed 100+ steel micrographs and conducted hardness, bending, and delamination tests to explore market readiness of concepts

Georgia Tech Lorraine — **Metz, France**
Undergraduate Research Assistant (Dr. Jean-Paul Salvestrini) — *Jan. 2021 – May 2021*

- Innovated experiment variations to optimize lift-off and transfer of GaN membranes to Si microcavities using van der Waals epitaxy
- Correlated lift-off parameters (force, time, location) to GaN fractures by applying optical and electron microscopy

Georgia Tech VIP Program — **Atlanta, GA**
Undergraduate Research Assistant (Dr. Jud Ready) — *Aug. 2020 – Dec. 2020*

- Drew processing-structure relationships in chip-scale electrochemical double layer supercapacitors by employing SEM, XPS, and potentiostat

LEADERSHIP

Georgia Tech Shenzhen — **Shenzhen, China (Remote)**
Sustainability Winter Seminar Student Assistant — *Jan. 2022 – Feb. 2022*

- Guided discussion group to top 30% of their class by coordinating seminar sessions and leading biweekly group discussions

The MILL: Georgia Tech's Materials Science Makerspace — Atlanta, GA
Materials Characterization Staffer — Aug. 2020 – Nov. 2020

- Oversaw characterization tool operation (SEM, optical microscope, profilometer, FTIR) while regulating sanitary Covid-19 protocols

Habitat For Humanity — **Pittsburgh, PA**
Service Trip Organizer — *Nov. 2019 – March 2020*

- Assisted in day-to-day logistics for student-led trip to Habitat for Humanity site with 6 other students to assist in building houses

PUBLICATIONS

B. Yen, L. Jaliff, L. Gutierrez, **Ph. Sahinidis**, S. Bernstein, J. Madden, S. Taylor, C. Josephson, P. Pannuto, W. Shuai, G. Wells, N. Arora, J. Hester. Soil-Powered Computing: The Engineer's Guide to Practical Soil Microbial Fuel Cell Design. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, Vol. 7, No. 4 (Dec. 2023)

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