

Zakaria Khan

❖ zakariaakhan47@gmail.com ❖ (734) 882-0046 ❖

EDUCATION

Wayne State University

May, 2025

B.S. Chemistry ; B.A. Physics ; GPA: 3.9

Detroit, MI

- Relevant coursework: Thermodynamics, Quantum Mechanics, Physical Chemistry, Computational Modeling in Physics, Computational Chemistry, Instrumental Analysis in Chemistry, Experimental Modern Optical Physics, Electronics & Magnetism
- Honors: Fulbright Scholar, Barry Goldwater Scholar
- Affiliations: American Chemical Society (ACS), Society of Physics Students, (SPS), Light Within the Tunnel

EXPERIENCE

Wayne State University

April 2024 – pres

Undergraduate Researcher

Detroit, MI

- Developing novel LiDAR technology: exploits finite rise, fall times of metal oxide semiconductor cameras, determines photon arrival time reflected from various surfaces.
- Applying ultrafast attosecond optics, 3D momentum imaging to quantum coherence of electronic wave packets.
- Designing, fitting optical elements with CAD software; achieving enhanced electronic, optical resolution

Los Alamos National Laboratory

May 2024 – Aug 2024

Department of Energy Laboratory Intern

Los Alamos, NM

- Configured, operated analytical grade instruments MALDIMS, PTRMS (TOF), OPS, SMPS, PAX, photometers
- Applied spectroscopic data to quantify role of particle coagulation-sink microphysics.

University of Texas

May 2023 – Aug 2023

Summer Research Assistant

Austin, TX

- Studied organic, inorganic particulate SA contributions to radiative effects, optical diffraction
- Used VSCode, Python scripts, Git packages, R visualization, other programs to quantify, visualize data
- Applied Stokes, Rayleigh theory to mechanistically elucidate spectral, numerical data

Arizona State University

May 2022– Aug 2022

Summer Research Assistant

Tempe, AZ

- Studied optical properties of PM2.5, PM5, PM10 particulate classes
- Used optical instrumentation including spectrophotometers, mass spectrometers, optical extinction instruments
- Collaborated with theoretical group to apply experimental data to corroborate, adjust computational model

Scripps Institution of Oceanography

June 2021 – Aug 2021

Summer Research Technician

La Jolla, CA

- Studied mechanics, timescales of PM2.5, PM5, PM10 confluence, aggregation
- Collaborated with theoretical group to apply experimental data to corroborate, adjust computational model

City Bureau-Outlier Media

May 2021 – pres

Documenter-Researcher

Detroit, MI

- Collecting data on community, environmental impact using surveys developed with professionals
- Acknowledged, cited in Detroit Free Press, Detroit News publications (agro-environmental sectors)

SKILLS, INTERESTS

- **Skills:** Spectrophotometry, optical instrumentation, quantum optics, experimental quantum information
- **Interests:** Backcountry hiking, camping (Bandelier, Great Lakes, Philmont, Soo Locks, West Point); climbing (Atlas Mountains, Elk Mountains, Fitz Roy, Patagonia,); gardening (Jefferson Barnes, WWII Norwayne Center)

❖ z_khan@lanl.gov ❖ (734) 882-0046 ❖