

Johnson To

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EDUCATION

University of California, Berkeley

Berkeley, CA

B.S. Chemical Engineering

Expected Graduation – May 2029

Relevant Coursework: General Chemistry, Physics for Scientists and Engineers, Calculus, Organic Chemistry, Chemical Process Analysis, Math & Statistics in ChemE, Linear Algebra & Ordinary Differential Equations

PROFESSIONAL EXPERIENCE

Research & Development Engineering Intern

Hayward, CA

Delphon Industries

June 2026 – August 2026

- Led a self-directed high-temperature ESD film project for semiconductor customers, formulating 10 silicone/CNT blends spanning 10^7 – 10^{11} Ω/sq and scaling 20 g test batches to 25–50 kg master batches on a cleanroom coating line
- Ran 231 tack tests and 88 Zygo, SEM, and optical scans across 8 surface textures and 3 film thicknesses, built a spring-loaded die fixture for the Mecmesin tester, and ran a 28-day 150°C shelf-life study confirming stable tack
- Helped root-cause two production defects: coating-line streaks from CNT clumps caught at the die, and white-dot QC failures that SEM revealed as an interlayer metal oxide, traced to excess humidity on the production floor
- Built an AI-assisted Python tool that cut Zygo analysis from 10–15 min to 1 min per scan; presented findings to R&D leads and executives including the CEO and CFO, after which the company increased project funding

Private Tutor

Bakersfield, CA

Self-Employed

December 2023 – May 2025

- Grew a referral-based tutoring business from one family to 5 students over 400+ hours of math and English
- Raised grades from C's to A's in math and B's in English; test averages rose to about 80% and the high 90s

PROJECT EXPERIENCE

Hydrogen Electrolysis Optimization | *Personal Project*

January 2026 – May 2026

- Built a graphite-electrode electrolysis cell with NaHCO_3 electrolyte and ran 18 timed trials from 4.0 to 6.5 V, measuring H_2 by water displacement and comparing it against Faraday's law to reach up to 88% Faradaic efficiency
- Saw little to no H_2 in early pure-water runs, traced it to low conductivity, and fixed it by adding NaHCO_3 electrolyte
- Analyzed data in Python (pandas, matplotlib), linking an efficiency drop above 5.5 V to gas escaping collection

Ibuprofen Degradation Analysis | *Chemistry Lab, Team of 4*

January 2026 – May 2026

- Co-designed a titration study of tablets exposed to short-wave UV and 70°C heat, measuring 19.6% heat degradation and 171 ± 17 mg of active ingredient vs. the 200 mg label claim, consistent with thermal decomposition literature
- Built a 4-point calibration curve in Python (matplotlib) from standard solutions to check titration accuracy

Smart Waste Sorting System | *Team Project, 14 Members*

January 2026 – May 2026

- Machined and assembled a 15" $\times$ 30" $\times$ 20" enclosure and tested disinfectant dilutions for cost and efficacy
- Team trained a ResNet50 CNN on 10,000+ images and deployed it on a Raspberry Pi; the sorter is in daily use

LEADERSHIP & ACTIVITIES

Media Committee Member

Berkeley, CA

American Institute of Chemical Engineers (AIChE)

August 2025 – December 2025

- Grew event attendance from 40 to 70 students and engagement by 20% with 10+ Canva and Adobe graphics
- Promoted events on Instagram and the College of Chemistry newsletter; the largest drew 100 students and \$1,000

SKILLS & INTERESTS

Lab: UV-Vis & IR Spectroscopy, SEM, Zygo Profilometry, Optical Microscopy, Cleanroom Coating, Titration

Software & Writing: Python (NumPy, pandas, matplotlib, Flask), Excel, Canva, Adobe Photoshop, Technical Writing

Languages & Honors: Vietnamese (Conversational); QuestBridge National College Match Finalist (2025)

Interests: Golfing, Rock Climbing, Hiking & Backpacking, Collecting Vinyls, Photography