BENJAMIN J. TABOR

Frederick, MD 21703 | ben.tabor50@gmail.com | (301) 471-0640 | in/bentabor

EDUCATION

University of Maryland, College Park, MD (UMD) — College Park, MD
Bachelor of Science, Chemical and Biomolecular Engineering | **GPA: 4.0** — Expected May 2026

- Member of A. James Clark Scholars Program — Aug. 2022 – Present
  - Cohort of 10 students in prestigious program that combines engineering, leadership, business, and community service
- Member of Engineering Honors Program — May 2024 – Present

SKILLS

Software: MATLAB, Mathematica, C/C++, Microsoft Office (Excel), Aspen, MathCAD, Polymath, Minitab
Lab: Polymer/Organic Synthesis, Interfacial Polymerization, Gas Permeability Testing, Hollow Fiber Module Assembly
Analysis Techniques: Raman Spectroscopy, IR/NMR Spectroscopy, SEM, Gas – Column – Thin-Layer Chromatography

TECHNICAL EXPERIENCE

University of Maryland - Functional Macromolecular Laboratory — College Park, MD
Undergraduate Researcher — Aug. 2024 – Present

- Developing new Li-ion battery electrolytes which perform at low temperatures (-60°C) by fabricating coin cells and evaluating their thermal stability, ionic conductivity, and cycling behavior, then altering the electrolyte mixture

Saft Batteries - Quality Department — Cockeysville, MD
Quality Engineering Intern — May 2024 – Aug. 2024

- Identified and implemented lean manufacturing improvements in Saft's final quality inspection area
- Performed a time study to assess the area's capacity to meet increased customer demand in 2025, and presented findings with recommendations for process flow adjustments and modifications to the physical workspace
- Created a model to optimize production line's up and down time for next 25 hours based on available materials
- Modeled the projected 2025 production line to determine the most cost-efficient combination of six industrial ovens and the required quantity of electrode storage equipment (50 magazines)
- Ideated and 3D printed custom tooling to accelerate inspection processes

University of Maryland - Sustainable Separations Laboratory — College Park, MD
Undergraduate Researcher — Mar. 2023 – May 2024

- Streamlined polyester interfacial polymerization experiment process for hollow fiber module reducing time by 20%
- Synthesized membranes including polyester, polyamides, polyimides, and prepared thermodynamic dope solutions
- Constructed and tested hollow fiber membrane modules to determine permeability and selectivity values
- Tailored membrane manufacturing processes to produce materials with desired and predicted properties

National Cancer Institute — Frederick, MD
Intern — Aug. 2021 – Jan. 2022

- Assisted in training an AI to identify mitochondria in hundreds of SEM images across various cell types

TECHNICAL PROJECTS

Clark Scholars Program - Service Learning Project — College Park, MD
Team Leader — Sep. 2023 – Present

- Proposed solution to e-scooter storage and charging issue to the UMD Dept. of Transportation, secured their support
- Conducted surveys and research to assess the extent of campuses lack of proper storage/charging facilities
- Brainstormed multiple initial concepts, created rough sketches, and completed CAD modeling of 3 unique designs

University of Maryland Thermodynamics II Project — College Park, MD
Team Member — Mar. – May 2024

- Applied the Peng-Robinson equation of state to calculate optimal conditions for the flash separation of naphtha
- Designed a MathCAD sheet to calculate thermodynamic properties, profit, work, and heat inputs/outputs for a 5-unit propene purification system using mass, energy, and entropy balances, and verified the results with Aspen
- Authored a formal report to explain results and detail the thermodynamic and mathematical methods used

LEADERSHIP & AWARDS

Chemical Engineering Thermodynamics I **Undergraduate Teaching Fellow** — Aug. 2024 – Present
Dean of Engineering Student Advisory Council **Member** — May 2024 – Present
American Institute of Chemical Engineers (@UMD) **Corporate Outreach Chair** — May 2024 – Present
Chemical Engineering Honor Society (@UMD) **Volunteer Coordinator** — May 2024 – Present
American Institute of Chemical Engineers (NCS) Most Outstanding Student Award Winner — Oct. 2024
ASPIRE Grant for Industry-Oriented Research Winner — Sep. 2024
Clark Scholar Program Summit Engineering Design Challenge Winner — Feb. 2024
Eagle Scout — Nov. 2021