

TAMMAM ABO-NABOUT

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tabonabout.com
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CORE COMPETENCIES

Process Design & Safety

- Process Flow & Instrumentation Design (PFDs, P&IDs)
- Heat & Mass Transfer Analysis (Thermal Integration)
- Process Safety Design (Overpressure Protection, HAZOP)
- Equipment Sizing, Material Selection & Troubleshooting

Process Optimization & Analysis

- Reaction Optimization & Scale-Up Calculations
- Statistical Analysis & Design of Experiments
- Root Cause Analysis & Technical Documentation

Process Modeling & Simulation

- Aspen Plus & HYSYS
- MATLAB
- Control Loop Design & Tuning (Simulink)

- AutoCAD, Inkscape

Data Analysis & Visualization

- Python (Pandas, Matplotlib)
- Microsoft Excel
- Web-Based Process Visualization (JS, CSS)
- MestReNova (NMR Spectra Analysis)

Characterization:

- NMR Spectroscopy (1H, 13C, 2D)
- X-Ray Crystallography & X-Ray Diffraction (XRD)
- Spectrophotometry (FTIR, UV-Vis)
- Electrochemical Analysis (Cyclic Voltammetry)

Particle & Elemental Analysis:

- Dynamic Light Scattering (DLS)
- Inductively Coupled Plasma (ICP-OES)
- Auto-titration

EDUCATION AND CREDENTIALS

B.Sc. IN CHEMICAL ENGINEERING – University of California, San Diego, La Jolla, CA

September 2023 – JUNE 2025

A.Sc. IN CHEMISTRY – San Diego Miramar College, San Diego, CA

September 2023 – JUNE 2025

FE Exam Preparation – In Progress

Scheduled for late 2025

RESEARCH EXPERIENCE AND TECHNICAL PROJECTS

RESEARCH ASSISTANT / CO-AUTHOR

ORGANOMETALLIC RESEARCH, SAN DIEGO MIRAMAR COLLEGE

JUNE – SEPTEMBER 2023

- Synthesized and characterized iridium (III) metal complexes that had potential use and applications for energy storage, water catalysis, and light diode.
- Skillfully operated advanced analytical instrumentation, including 2D NMR (COSY/HETCOR) FTIR, UV-Vis spectrophotometry, and X-ray crystallography, as well as managed raw material inventory and quality data review.
- Confirmed high-quality structural data by achieving successful X-ray crystallographic analysis with R-factors below 0.035.
- Co-authored presentation of findings along with Professor Fred Garces and colleagues that was later **presented at the 2025 American Chemical Society Spring Convention** in San Diego.

DIRECT AIR CAPTURE PROCESS DEVELOPMENT, SENIOR CHEMICAL ENGINEERING PROJECT, UC SAN DIEGO

JANUARY – JUNE 2025

- Engineered an industrial-scale facility to remove 1 million metric tons of CO2 annually, utilizing process simulation (Aspen Plus & HYSYS), P&ID development, detailed equipment sizing, and full economic analysis.

INDUSTRIAL AMMONIA PLANT DESIGN, PROCESS ENGINEERING CAPSTONE PROJECT, UC SAN DIEGO

SEPTEMBER 2024 – JUNE 2025

- Designed a 943 kmol/h ammonia synthesis plant, achieving a 48.9% efficiency improvement through thermal integration, process simulation (Aspen), hydraulic calculations, and detailed equipment design.

PROFESSIONAL EXPERIENCE

DELIVERY DRIVER ASSOCIATE

MADE IT LOGISTICS LLC, SAN DIEGO, CA

AUGUST 2025 – PRESENT

- Maintained consistent on-time performance across a 40-50 hour/week schedule by collaborating with dispatch and customer service teams to optimize delivery workflows of an average of 350 packages daily.

GENERAL MERCHANDISE EXPERT

TARGET CORPORATION, SAN DIEGO, CA

AUGUST 2024 – JUNE 2025

- Collaborated with department teams to manage inventory and daily operations in a fast-paced environment while adhering to all safety standards.