Mohammed Anwar Mahram

Chemical Engineering Student · Atılım University, Ankara

Ankara, Türkiye · +90 552 833 18 14 · Born 2004
m7nwar@icloud.com · linkedin.com/in/m7nwar · github.com/ghost545a · mohammedmahram.blog · instagram.com/m7nwar

Education

BSc Chemical Engineering, Atılım University, Faculty of Engineering, Ankara — 2022 – 2027 (expected)
GPA 3.00 / 4.00 · Honor student: Spring 2022–23, Fall 2025–26, Spring 2025–26

Experience

Production and Water Treatment Intern, City Plus Pharma, Sana'a, Yemen — Aug 2025
Solid, liquid and semi-solid production under WHO GMP; reverse osmosis water treatment unit (monitoring, sampling).

Quality Control Laboratory Intern, Shaphaco Pharmaceutical, Sana'a, Yemen — Aug 2024
Raw material, in-process and finished product analysis, method validation and stability testing (HPLC, IR, UV).

Research

Blue Energy: the effect of monovalent ion selectivity in membranes on salinity gradient energy generation — 2025 – 2026
Bachelor's student research project ATÜ-LAP-2526-07, funded by Atılım University (LAP) · Advisor: Assoc. Prof. Dr. Enver Güler

- Measured chloride transport through a Fumasep FAA-3-PK-75 anion exchange membrane in a two-compartment diffusion cell (0.1 M NaCl vs DI water); apparent diffusion coefficient ≈ 2.2–2.4 × 10^{-11} m^2/s, a baseline for monovalent-selective membranes in reverse electrodialysis (RED).
- Oral talk and poster at the MÜBAK 2026 Engineering Sciences and Researches Student Congress; three-language website with a 3D replay of the experiment (mohammedmahram.blog/membrane-science).

Lab-scale RED trial (planned): bench-scale stack to measure voltage and power density, including multivalent-ion feeds — 2026 – 2027

Engineering Projects

Design of a 400,000 t/y Purified Terephthalic Acid (PTA) Plant in Türkiye · CHE406 Design II, team of 5 — 2026

- Amoco-BP route at Bandırma: two oxidation CSTRs (225 °C, 95–97% yield), flash, crystallisation, centrifuge, dryer, fixed-bed hydrogenation and acetic acid recovery.
- Hand mass and energy balances verified in Aspen; equipment costing in CAPCOST; TCI ≈ 398 MUSD, positive NPV ≈ 8.9 MUSD.

HydroFab: Superhydrophobic Fabric · CHE438 product design, team of 3 — 2026

- Customer survey, target specifications and concept selection; polyester with SiO_2 nanoparticles and a silicone coating by dip coating, contact angle > 150°, coating cost < 1 USD/m^2.

Water Quality and Potability Prediction using Machine Learning · CMPE468 ML for Engineers, team of 5 — 2026

- Classified 3,276 water samples (9 physicochemical features: pH, hardness, sulfate, TDS…) as potable or not with 5 models, 10-fold stratified cross-validation, under/oversampling and PCA (Orange Data Mining).
- Best: SVM (RBF) on undersampled data, AUC 0.707, F1 0.675; showed oversampling inflates k-NN scores through duplicated samples.

Skills

Process engineering: Aspen Plus, CAPCOST, mass & energy balances, reactor and separator design, PFDs, techno-economic analysis

Laboratory: ion-exchange membranes, diffusion-cell experiments, conductivity, HPLC, IR and UV spectroscopy, Karl Fischer titration, dissolution, hardness/friability, method validation, stability testing

Industry & GMP: WHO GMP, cleanroom and gowning practice, contamination control, SOP documentation, granulation, tablet compression, coating

Data & machine learning: Python (NumPy, pandas, Matplotlib), data analysis, machine learning, Orange Data Mining

Coding: software and web development with AI agentic coding (HTML, CSS, JavaScript, three.js, Rust)

Software: MATLAB, SolidWorks, Excel, Word, PowerPoint, LaTeX

Languages

Arabic native · **English** C1, TOEFL iBT 100/120 (Feb 2026; Reading 5.0, Listening 5.5, Speaking 4.0, Writing 5.0 of 6) · **Turkish** B1

Outreach

Instagram @m7nwar · Arabic content on chemical engineering awareness and knowledge; reels on the ChemE curriculum (18K views) and my graduation project (13.5K views).

References available on request.