

Mahmoud M. Ramadan

ramadanm@mit.edu

ramadan.mit.edu

740-249-8042

Current: 53 Tremont St Apt 3, Cambridge, MA 02139

EDUCATION

Massachusetts Institute of Technology (Cambridge, MA)
S.M. Technology and Policy Program

May 2022 – May 2023

Massachusetts Institute of Technology (Cambridge, MA)
S.M. Mechanical Engineering

Sep 2020 – Aug 2022
Overall GPA: 5.00/5.00

Ohio University (Athens, OH)
B.Sc. Chemical Engineering – Energy & Environment Track; Chemistry & Math Minor

Aug 2016 – May 2020
Overall GPA: 3.97/4.00

RESEARCH EXPERIENCE

Massachusetts Institute of Technology, Olivetti Group

Research Assistant

Jun 2022 – present

- Techno-economic assessment of sodium-ion batteries manufacturing and scalability

Massachusetts Institute of Technology, Reacting Gas-Dynamics Laboratory

MIT Vice Chancellor's Excellence Fellow and Research Assistant

Aug 2020 – present

- Conducting thermochemical and electrochemical research on lithium-based batteries' explosive behavior
 - o Thermal methods include using Thermogravimetric Analyzer (TGA) and Differential Scanning Calorimeter (DSC)

Idaho National Laboratory, U.S. Department of Energy

SULI Intern

May 2020 – Jul 2020

- Classified research, but generally speaking, developed computational fluid dynamic models in STAR-CCM+ to analyze helium flow in printed circuit heat exchanger

Ohio University, Institute for Corrosion and Multiphase Technology, Microbiologically Influenced Corrosion Lab

Research Assistant

Dec 2018 – May 2020

- Conduct study on inhibition of microbiologically influenced corrosion (MIC) on metal surfaces through electrochemical techniques
- Lead project to analyze the effect of yeast and riboflavin on MIC
- Co-authored journal manuscript on mitigation of MIC on C-steel using DBNPA and a biocide enhancer

Ohio University, Institute for Sustainable Energy and the Environment

Research Assistant

Aug 2018 – May 2019

- Conducted water treatment research on the removal of furfural from wastewater
- Wrote python code to run jobs on COSMOtherm

The University of Pittsburgh, Department of Chemical and Petroleum Engineering

NSF REU Fellow at Mpourmpakis Group

May 2018 – Aug 2018

- Conducted computational study on bimetallic nanoparticle stability using Atomic Simulation Environment (ASE) module
- Wrote codes that generated nanoparticles and calculated nanoparticle energies

WORK EXPERIENCE

Solvay, Specialty Polymers (Marietta, OH)

Engineering Intern

May 2019 – Jul 2019

- Worked in process safety management by performing incident investigation
- Member of the quality labs renovation committee
- Analyzed sound pressure level data and collected radiation samples with a consultant to meet OSHA guidelines

Ohio University, Academic Advancement Center

Supplemental Instruction Leader

Jan 2017 – Mar 2019

- One of few *freshmen* to be hired as an SI leader
- Lead the Supplemental Instruction study sessions (in Calculus II) two to three times a week
- Provided free tutoring and study skills coaching for under-represented and under-served students

- Received Level II College Reading & Learning Association (CRLA) Tutoring Certification based on more than 20 hours of diversity training workshops and 50 hours of tutoring

SKILLS

Computer: Solid understanding of Python and MATLAB

Good understating of R, CHEMCAD, and Atomic Simulation Environment (ASE) module

Languages: United States citizen fluent in Arabic (Modern Standard Arabic and Lebanese Arabic) and English

PUBLICATIONS

- Ramadan M, Wang Y, Tooteja P (2022). **Analysis of Hydrogen Production Costs across the United States and over the next 30 years**. *arXiv Statistics Applications arXiv:2206.10689*.
- Hardman S, Fleming K, Khare E, Ramadan M (2021). **A perspective on equity in the transition to electric vehicles**. *MIT Science Policy Review*, 2, 46-54.
- Wang D, Ramadan M, Kumseranee S, Punpruk S, Gu T (2020). **Mitigating microbiologically influenced corrosion of an oilfield biofilm consortium on carbon steel in enriched hydrotest fluid using 2,2-dibromo-3-nitrilopropionamide (DBNPA) enhanced by a 14-mer peptide**. *Journal of Materials Science & Technology*, 57, 146-152.
- Dean J, Cowan M, Estes J, Ramadan M, Mpourmpakis G (2020). **Rapid Prediction of Bimetallic Mixing Behavior at the Nanoscale**. *ACS Nano* 14(7), 8171–8180.

HONORS & CERTIFICATIONS

- NSF Graduate Research Fellowship Program Honorable Mention (2021)
- MIT's Vice Chancellor's Excellence Fellowship (2020)
- Barry M. Goldwater Scholar (2019)
- Tau Beta Pi Scholar (2019)
- Future Leaders in Chemical Engineering Award (2020) (North Carolina State University)
- Outstanding Senior Award (2020); Keith Russ Award for Outstanding Junior (2019); Outstanding Sophomore Award (2018) (Ohio University Department of Chemical and Biomolecular Engineering)
- Level II College Reading & Learning Association (CRLA) Tutoring Certification

Memberships: MIT Science Policy Initiative, American Institute of Chemical Engineers (AIChE), Tau Beta Pi, Sigma Xi

ACTIVITIES

MIT Science Policy Review

Chief Executive Officer (CEO)

Oct 2021 – Sept 2022

- Official representative of the group to any other organization and to MIT
- Responsible for fundraising by meeting with Deans and Administrators across MIT

Communications Director

Oct 2020 – Oct 2021

- Liaison between the MIT Science Policy Review, departments across MIT, other universities, and policy makers
- Co-authored a peer-reviewed article on electric vehicle charging infrastructure

MIT Science Policy Initiative

Co-Chair of MIT Congressional Visit Days

May 2022 – present

Member

Oct 2020 – present

- Participated in MIT Congressional Visit Days to advocate for an increase in federal spending on STEM research
- Participated in MIT Executive Visit Days and lead informational session with the State Department

VOLUNTEER

- **Aley County Summer School** (Summer 2017) Taught Syrian refugee children English and arithmetic
 - o Taught a 16-year-old lessons in chemistry, physics, mathematics, and English to prepare for Lebanese Brevet exam (government high-school entrance exams)
- **Goldwater Diversity and Inclusion Council** (Fall 2020 – Spring 2021) Mentored students at Morehouse College
- **MIT Mechanical Engineering Research Exhibition (MERE)** (Fall 2021) Poster Judge
- **MIT Summer Research Program (MSRP)** (Winter 2021) Application review committee member