Curriculum Vitae

Joseph Nicolas

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Education

Ph.D. Chemical and Biomolecular Engineering, University of Pennsylvania (exp.) 2028
Doctoral Advisor: Dr. Dohyung Kim

B.S. Chemical Engineering, The Pennsylvania State University 2023
Graduated Magna Cum Laude

Professional Experience

Learning Assistant, Heat Transfer Jan 2023 - May 2023
Supervised by Dr. Stephanie Velegol
- Presented students with solutions to problems during weekly meetings.
- Communicated student needs and worked to implement instructional improvements.
- Planned out future course formatting as part of a diverse teaching team.

Research Assistant, Logan Lab: Penn State Oct 2021 - Jan 2023
Supervised by Dr. Bruce Logan
- Conducted research on electrochemical hydrogen production using microbial electrolysis cells (MECs).
- Spearheaded all data analysis and interpretation for electrochemical data.
- Presented findings at two poster conferences and in the Journal of Power Sources.

Consulting Intern, Ernst & Young, Kuwait Jul 2022 - Aug 2022
- Collaborated in teams to communicate IBOR transition solutions to clients and support client engagements.
- Analyzed progress data to solve project delays in coordination with client teams.
- Lead weekly result presentations on takeaways from data collected across the MENA region.

Engineering Intern, Pepsi Co., Kuwait Dec 2020 - Jan 2021
- Collaborated with team members to analyze and streamline process flow diagrams and schematics for 6 running production lines.
- Communicated with employees on all levels to reconstruct and bolster hazard analysis and critical control point reports.
- Guided efforts to solve problems relating to discrepancies in maintenance and process logs.

Research Assistant, Savage Lab: Penn State Jan 2020 - May 2020
Supervised by Dr. Phillip Savage
- Conducted research on renewable liquid bio-fuel and nutrient production from biomass.
- Utilized concepts on hydrothermal catalysis, kinetics of complex reacting systems, pyrolysis, and valorization of chemicals from food waste.
- Published results in Bioresource Technology journal.

Skills

Languages Arabic (*native*), English (*fluent*), French (*basic*)

Coding and Webdesign Mathematica, Python, LaTeX, WordPress

Presentations

Poster Presentation
"Inexpensive nickel-molybdenum metal catalyst dynthesis for use in microbial electrolysis cells"
24th Annual Environmental Chemistry and Microbiology Symposium April 2022
Energy Days May 2022

PUBLICATIONS

[1] R. Rossi, **J. Nicolas**, B. Logan Using nickel-molybdenum cathode catalysts for efficient hydrogen gas production in microbial electrolysis cells. *Journal of Power Sources*, vol. 580, 2023. DOI: 10.1016/j.jpowsour.2022.232594

[2] B. Motavaf, B. Dean, **J. Nicolas**, P. Savage Hydrothermal carbonization of simulated food waste for recovery of fatty acids and nutrients. *Journal of Bioresource Technology*, vol. 341, 2021 DOI: 10.1016/j.biortech.2021.125872