Abdulaziz Waleed Alherz

Assistant Professor of Chemical Engineering

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CONTACT INFORMATION

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EDUCATION

Ph.D.	Chemical Engineering University of Colorado – Boulder May 2023 Advisor: Charles B. Musgrave
M.S.	Chemical Engineering University of Colorado – Boulder May 2018
B.S.	Chemical Engineering University of Colorado – Boulder May 2016

EMPLOYMENT EXPERIENCE

2023 –	Assistant Professor, Chemical Engineering Department Kuwait University
2018 – 2023	Kuwait University Fellowship

PUBLICATIONS

ARTICLES IN REFEREED JOURNALS

1. Abdulaziz Alherz, Chern-Hooi Lim, James T. Hynes, and Charles B. Musgrave. *The Journal of Physical Chemistry B* **2018** *122* (3). 1278-1288. 10.1021/acs.jpcb.7b12093

2. Abdulaziz Alherz, Chern-Hooi Lim, Yu-Ching Kuo, Philip Lehman, Jennifer Cha, James T. Hynes, and Charles B. Musgrave. *The Journal of Physical Chemistry B* **2018** *122* (44), 10179-10189. 10.1021/acs.jpcb.8b08536

3. Ilic, S.; Alherz, A.; Musgrave, C. B.; Glusac, K. D. Thermodynamic and Kinetic Hydricities of Metal-Free Hydrides. *Chemical Society Reviews* **2018**, *47* (8), 2809–2836. 10.1039/c7cs00171a.

4. Chern-Hooi Lim, Stefan Ilic, Abdulaziz Alherz, Brady T. Worrell, Samuel S. Bacon, James T. Hynes, Ksenija D. Glusac, and Charles B. Musgrave. *Journal of the American Chemical Society* **2019** *141* (1), 272-280. 10.1021/jacs.8b09653

5. Ilic, S.; Alherz, A.; Musgrave, C. B.; Glusac, K. D. Importance of Proton-Coupled Electron Transfer in Cathodic Regeneration of Organic Hydrides. *Chemical Communications* **2019**, *55* (39), 5583–5586. 10.1039/c9cc00928k

6. Myren, T. H.; Alherz, A.; Stinson, T. A.; Huntzinger, C. G.; Lama, B.; Musgrave, C. B.; Luca, O. R. Metalloradical Intermediates in Electrocatalytic Reduction of CO2 to CO: Mn *versus* Re Bis-n-Heterocyclic Carbene Pincers. *Dalton Transactions* **2020**, *49* (7), 2053–2057. 10.1039/c9dt04691g

7. Tessa H. T. Myren, Abdulaziz Alherz, Jonathan R. Thurston, Taylor A. Stinson, Chloe G. Huntzinger, Charles B. Musgrave, and Oana R. Luca. *ACS Catalysis* **2020** *10* (3), 1961-1968. 10.1021/acscatal.9b04773

8. Alkhater, M. F.; Alherz, A. W.; Musgrave, C. B. Diazaphospholenes as Reducing Agents: A Thermodynamic and Electrochemical DFT Study. *Physical Chemistry Chemical Physics* **2021**, *23* (33), 17794–17802. 10.1039/d1cp02193a

9. Ravindra B. Weerasooriya, Jonathan L. Gesiorski, Abdulaziz Alherz, Stefan Ilic, George N. Hargenrader, Charles B. Musgrave, and Ksenija D. Glusac. *The Journal of Physical Chemistry Letters* **2021** *12* (9), 2306-2311. 10.1021/acs.jpclett.0c03662

10. Yousef A. Alsunni, Abdulaziz W. Alherz, and Charles B. Musgrave. *The Journal of Physical Chemistry C* **2021** *125* (43), 23773-23783. 10.1021/acs.jpcc.1c07484

11. Karin U. D. Calvinho, Abdulaziz W. Alherz, Kyra M. K. Yap, Anders B. Laursen, Shinjae Hwang, Zachary J. L. Bare, Zachary Clifford, Charles B. Musgrave, and G.

Charles Dismukes. *Journal of the American Chemical Society* **2021** *143* (50), 21275-21285. 10.1021/jacs.1c03428

12. Petersen, H. A.; Alherz, A. W.; Stinson, T. A.; Huntzinger, C. G.; Musgrave, C. B.; Luca, O. R. Predictive Energetic Tuning of C-Nucleophiles for the Electrochemical Capture of Carbon Dioxide. *iScience* **2022**, *25* (4), 103997.10.1016/j.isci.2022.103997

13. Alherz, A. W.; Petersen, H. A.; Singstock, N. R.; Sur, S. N.; Musgrave, C. B.; Luca, O. R. Predictive Energetic Tuning of Quinoid O-Nucleophiles for the Electrochemical Capture of Carbon Dioxide. *Energy Advances* **2022**, *1* (11), 900–907. 10.1039/d2ya00114d

14. Paige Brimley, Hussain Almajed, Yousef Alsunni, Abdulaziz W. Alherz, Zachary J. L. Bare, Wilson A. Smith, and Charles B. Musgrave. *ACS Catalysis* **2022** *12* (16), 10161-10171. 10.1021/acscatal.2c01832

15. Cooper R. Tezak, Nicholas R. Singstock, Abdulaziz W. Alherz, Derek Vigil-Fowler, Christopher A. Sutton, Ravishankar Sundararaman, and Charles B. Musgrave. *ACS Catalysis* **2023** *13* (19), 12894-12903. 10.1021/acscatal.3c01978

16. Cooper Tezak, Jacob Clary, Sophie Gerits, Joshua Quinton, Benjamin Rich, Nicholas Singstock, Abdulaziz Alherz, Taylor Aubry, Struan Clark, Rachel Hurst, Mauro Del Ben, Christopher Sutton, Ravishankar Sundararaman, Charles Musgrave, and Derek Vigil-Fowler**.** *The Journal of Physical Chemistry C* **2024** *128* (47), 20165-20176. DOI: 10.1021/acs.jpcc.4c06826

17. Yousef A. Alsunni, Abdulaziz W. Alherz, and Charles B. Musgrave. *ACS Electrochemistry* **2025** *1* (3), 328-337. DOI: 10.1021/acselectrochem.4c00073

18. Petersen, H. A., Koltunski, H. J., Pham, P. H., Brink, Q. M., Ley, A., Lee, J., Wright, O. M., Wyatt, K., Noble, R. D., Alherz, A. W., & Luca, O. R. (2025). Quinone-annulated imidazolium salts as dual electrolyte-sorbents for electrochemical capture of carbon dioxide. *Journal of Materials Chemistry A*. https://doi.org/10.1039/d5ta01163a

PROFESSIONAL ACTIVITIES

Society Memberships

Society	Abbreviation	Year(s)
American Institute of Chemical Engineers	AIChE	2014 – Present
American Chemical Society	ACS	2023 – Present

Internal Service Activities – Kuwait University

Activity	Department	Year(s) Active
Professional Society & Training	Chemical Engineering	2023 – Present
Annual Report	Chemical Engineering	2023 – 2024
Teaching Area Group 1 (TAG-1): Chemical Processes	Chemical Engineering	2023 – Present
Department IT Coordinator	Chemical Engineering	2024 – Present
Scheduling Committee	Chemical Engineering	2024 – Present

Community Outreach / Workshops

Event	Date(s)
Gas Processing Training Program: Optimization of Gas Processing Units	May 2024, Nov 2024

Invited Talks and Presentations

Seminar/Presentation Title	Event	Year(s)

COURSES TAUGHT

Course Name	Course Code	Level	Credits
Chemical Engineering Thermodynamics	0640321 CHE 321	Undergraduate	3
Applied Numerical Methods & Programming for Engineers	0600307 ENG 307	Undergraduate	3
Mass Transfer Operations	0640440 CHE 440	Undergraduate	3
Fluid Mechanics Lab	0640242 CHE 242	Undergraduate	1

COURSE SURVEYS

Kuwait University ratings are on a 1 to 3 scale with 3 being best. Percentiles signify percentage of instructors receiving a lower Instructor Rating for the semester.

Course	Term Taught	Enrolled	Responses	Instructor Rating*	School Rating*	%
CHE 321 (UG Units 3) Chemical Engineering Thermodynamics	Fall 2023-2024	14	11	**2.84**	-	
ENG 307 (UG Units 3) Applied Numerical Methods and Programming for Engineers	Fall 2023-2024	23	22	**2.67**	-	
CHE 321 (UG Units 3) Chemical Engineering Thermodynamics	Spring 2023-2024	28	22	**2.69**	-	
ENG 307 (UG Units 3) Applied Numerical Methods and Programming for Engineers	Spring 2023-2024	18	16	**2.60**	-	
CHE 440 (UG Units 3) Mass Transfer Operations	Fall 2024-2025	28	26	**2.75**	-	
ENG 307 (UG Units 3) Applied Numerical Methods and Programming for Engineers	Fall 2024-2025	17	13	**2.79**	-	
CHE 242 (UG Units 1) Fluid Mechanics Lab	Fall 2024-2025	8	N/A	**N/A**		

CHE 440 (UG Units 3) Mass Transfer Operations	Spring 2024-2025	25			-	
ENG 307 (UG Units 3) Applied Numerical Methods and Programming for Engineers	Spring 2024-2025	14			-	
CHE 242 (UG Units 1) Fluid Mechanics Lab	Spring 2024-2025	14	N/A	**N/A**	-	