
Dr. Husain E. Ashkanani

1. Name and contact information

Name: Husain E. Ashkanani
Rank: Assistant Professor
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2. Education

Degree	Field	Institution	Year
PhD.	Chemical Engineering	University of Pittsburgh	2021
M.S.	Chemical Engineering	University of Florida	2016
B.S.	Chemical Engineering	Kuwait University	2014

3. Academic Experience

Institution	Designation	Year/period
Kuwait University	Assistant Professor	2021 - Present

4. Activities

Surface Title / Description	Role in Service	Year
Applied Chemical Engineering Special Issue on CO ₂ Capture and Utilization	Co-Guest Editor	2024
Kuwait Competition for Science and Engineering	Judging Committee Member	2023
Graduate Safety Committee – Department of Chemical and Petroleum Engineering, University of Pittsburgh	Member	2017 –2021

5. Membership in professional organization

Society Name	Type of Membership	Year
AIChE	Member	2013 – 2022
SPE	Member	2018 – 2021

6. Honors and awards

- Award for Outstanding Technical Poster – 36th Annual International Pittsburgh Coal Conference 2019
- Dean's Honor List for Fall Semester 2013-2014 – Kuwait University 2014
- Dean's Honor List for Spring Semester 2012-2013 – Kuwait University 2013
- Dean's Honor List for Spring Semester 2011-2012 – Kuwait University 2012

7. Publications and Presentations

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K.H., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Resnik, K., Morsi, B.I., **2023**. TEA of the CO₂ capture process in pre-combustion applications using thirty-five physical solvents: Predictions with ANN. International Journal of Greenhouse Gas Control 130, 104007.

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K.H., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Kusuma, V.A., Morsi, B.I., **2023**. Using AI for Predicting TEA of CO₂ Capture Process in Precombustion Applications. Proceedings of the 40th Annual International Pittsburgh Coal Conference, October 4-6.

Wang, R., **Ashkanani, H.E.**, Shi, W., Siefert, N., Smith, K., Thompson, R.L., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Kusuma, V.A., Morsi, B.I., **2023**. TEA of CO₂ Capture Process in SMR-CCS Applications. Proceedings of the 40th Annual International Pittsburgh Coal Conference, October 4-6.

Smith, K.H., **Ashkanani, H.E.**, Thompson, R.L., Culp, J.T., Hong, L., Swanson, M., Stanislawski, J., Shi, W., Morsi, B.I., Resnik, K., Hopkinson, D.P., Siefert, N.S., **2023**. Performance of Hydrophobic Physical Solvents for Pre-Combustion CO₂ Capture at a Pilot Scale Coal Gasification Facility. International Journal of Greenhouse Gas Control 124, 103863.

Wang, R., **Ashkanani, H.E.**, Li, B., Morsi, B.I., **2022**. TEA of a Unique Two-Pathways Process for CO₂ Capture from Post-Combustion Applications Using Two Amino Acid Salts. Proceedings of the 39th Annual International Pittsburgh Coal Conference, September 19-22.

Smith, K.H., Thompson, R.L., Culp, J., Shi, W., Resnik, K., Hopkinson, D., Swanson, M., Stanislawski, J., **Ashkanani, H.E.**, Morsi, B.I., **2022**. Pilot Plant Performance and Process Simulation of a Hydrophobic Physical Solvent for Pre-Combustion CO₂ Capture. Proceedings of the 39th Annual International Pittsburgh Coal Conference, September 19-22.

Smith, K.H., Siefert, N., **Ashkanani, H.E.**, Morsi, B.I., **2022**. Review of Techno-Economic Analysis Studies Using Physical Solvents for Pre-Combustion CO₂ Capture. Proceedings of the 39th Annual International Pittsburgh Coal Conference, September 19-22.

Smith, K.H., Thompson, R.L., Culp, J., Shi, W., Resnik, K., Hopkinson, D., Swanson, M., Stanislawski, J., **Ashkanani, H.E.**, Morsi, B.I., **2022**. Pilot Plant Performance and Process Simulation of a Hydrophobic Physical Solvent for Pre-Combustion CO₂ Capture. Proceedings of the 39th Annual International Pittsburgh Coal Conference, September 19-22.

Wang, R., **Ashkanani, H.E.**, Li, B., Morsi, B.I., **2022**. TEA of a Unique Two-Pathways Process for Post-Combustion CO₂ Capture. Journal of Energy and Power Technology 04, 033.

Wang, R., **Ashkanani, H. E.**, Li, B., & Morsi, B. I., **2022**. Development of an innovative process for post-combustion CO₂ capture to produce high-value NaHCO₃ nanomaterials. International Journal of Greenhouse Gas Control, 120, 103761.

Smith, K.H., **Ashkanani, H.E.**, Morsi, B.I., Siefert, N.S., **2022**. Physical Solvents and Techno-Economic Analysis for Pre-Combustion CO₂ Capture: A Review. International Journal of Greenhouse Gas Control 118, 103694.

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Resnik, K., Morsi, B.I., **2021**. Techno-Economic

Analysis of the Pre-Combustion CO₂ Capture Process Using Ionic Liquids. Proceedings of the 38th Annual International Pittsburgh Coal Conference, September 20-23.

Wang, R., **Ashkanani, H.E.**, Li, B., Morsi, B.I., **2021**. TEA of a Unique Process for Producing High-value Nanomaterials or CO₂ Capture and Sequestration. Proceedings of the 38th Annual International Pittsburgh Coal Conference, September 20-23.

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Resnik, K., Morsi, B.I., **2021**. Effect of Power Plant Capacity on the CAPEX, OPEX, and LCOC of the CO₂ Capture Process in Pre-Combustion Applications. International Journal of Greenhouse Gas Control 109, 103371.

Santos, G.R.S., Basha, O.M., Wang, R., **Ashkanani, H.**, Morsi, B., **2021**. Techno-Economic Assessment of Fischer-Tropsch Synthesis and Direct Methane-to-Methanol Processes in Modular GTL Reactors. Catalysis Today 371, 93-112.

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Resnik, K., Morsi, B.I., **2020**. Effect of Power Plant Capacity on the CAPEX, OPEX, and LCOC of the CO₂ Capture Process using PEGPDMS Solvents in Pre-Combustion Applications. Proceedings of the 37th Annual International Pittsburgh Coal Conference, September 8-11.

Ashkanani, H.E., Wang, R., Shi, W., Siefert, N.S., Thompson, R.L., Smith, K., Steckel, J.A., Gamwo, I.K., Hopkinson, D., Resnik, K., Morsi, B.I., **2020**. Levelized Cost of CO₂ Captured using Five Physical Solvents in Pre-Combustion Applications. International Journal of Greenhouse Gas Control 101, 103135.

Ashkanani, H.E., Wang, R., Siefert, N.S., Gamwo, I.K., Resnik, K.P., Smith, K.H., Morsi, B.I., **2019**. Levelized Cost of CO₂ Captured Using Different Physical Solvents in Pre-combustion Applications. Proceedings of the 36th Annual International Pittsburgh Coal Conference, September 3-6.

Wang, R., **Ashkanani, H.E.**, Li, B., Morsi, B.I., **2019**. Modelling of CO₂ Absorption from Gas Mixtures Using Chemical Absorbents in Adiabatic Packed-Beds. Proceedings of the 36th Annual International Pittsburgh Coal Conference, September 3-6.

Banerjee, S., Wang, R., **Ashkanani, H.E.**, Basha, O., Morsi, B.I., **2019**. Carbon Dioxide Capture Using Aqueous MEA Solutions in a Countercurrent Adiabatic Packed-bed Absorber. Proceedings of the 36th Annual International Pittsburgh Coal Conference, September 3-6.

Chesnutt, J.K.W., **Ashkanani, H.**, Guo, B., Wu, C.-y., **2017**. Simulation of Microscale Particle Interactions for Optimization of an Electrodynamic Dust Shield to Clean Desert Dust from Solar Panels. Solar Energy 155, 1197-1207.

8. Supervised Thesis

- Aisha Almutairi, "Pre-Combustion CO₂ Capture using Ionic Liquids Mixed with Physical Solvents", MSc Thesis, Co-Supervisor, expected graduation, Fall 2023-2024
- Zahraa Alsarraf, "Techno-Economic Assessment of Post Combustion CO₂ Capture", MSc Thesis, Co-Supervisor, expected graduation, Fall 2023-2024