



Eng. Aya Abdelhamid Ismail

Teaching Assistant - Academic Support

M.Sc., 2017, Chemical Engineering, UAEU

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Teaching Assistant

Academic Support Department

Education

Master of Science in Chemical Engineering, United Arab Emirates University, UAE-2017 Cumulative GPA 3.87 (Excellent with Honor)

Bachelor of Science in Chemical Engineering, United Arab Emirates University, UAE – 2013 Cumulative GPA 3.90 (Excellent with Honor)

Short Bio

Eng. Aya awarded her BSc degree (2013) and M.Sc. degree (2017) in Chemical Engineering from the United Arab Emirates University. In 2013, she worked as a graduate teaching assistant in the United Arab Emirates University. Then, she worked as a process engineer for two years (from 2014 to 2016) in Technip France-Abu Dhabi Company, in the field of Oil & Gas Industry. She has been involved in Front End Engineering Design (FEED) and Engineering Procurement and Construction (EPC) Projects in Offshore and Onshore Oil & Gas facilities including Greenfield and Brownfield Projects. She is currently working as a teaching assistant in Abu Dhabi Polytechnic since 2016. Over the period of her work as a teaching assistant she has gained a high level of skills and capabilities in teaching. Her main research areas are, modeling and simulation of membranes for energy processes including hydrogen production, air separation, carbon dioxide capture, and reject brine management. Her main strengths are adaptability, dependability, work in a team, work under pressure and leadership personality. It is always her intention to develop herself and to gain new experience as she believes that there is always a room for self-improvement both personally and professionally.

Teaching Areas/Interests

- Engineering subjects: Fluid mechanics, Heat transfer, Mass transfer, Thermodynamics, Chemical reaction kinetics, Equipment design, Plant design, Process dynamics and control as well as Process safety, Economics, and Engineering Management.
- General fundamental courses: Chemistry, Physics, Biology, Math.

Research Interests

- Modelling and Simulation of Hydrogen Production via Membrane Reactor.
- Using the response surface method in Minitab to find the optimum operating conditions.
- Applications of membranes for energy processes including hydrogen production, air separation, and carbon dioxide capture.

Recent Publications

1. **Aya Abdel-Hamid I. Mourad**, Ameera F. Mohammad, Ali H. Al-Marzouqi, Muftah H. El-Naas, Mohamed H. Al-Marzouqi, and Mohammednoor Altarawneh. "KOH-Based Modified Solvay Process for Removing Na Ions from High Salinity Reject Brine at High Temperatures." *Sustainability* 13, no. 18 (2021): 10200.
2. Mohammad, Ameera F., **Aya Abdel-Hamid I. Mourad**, Emmanuel Galiwango, Essa G. Lwisa, Ali H. Al-Marzouqi, Muftah H. El-Naas, Bart Van der Bruggen, and Mohamed H. Al-Marzouqi. "Effective and sustainable adsorbent materials for oil spill cleanup based on a multistage desalination process." *Journal of Environmental Management* 299 (2021): 113652.
3. **Aya Abdel-Hamid I. Mourad**, Ameera F. Mohammad, Mohammednoor Altarawneh, Ali H. Al-Marzouqi, Muftah H. El-Naas, and Mohamed H. Al-Marzouqi (2021). "Effects of potassium hydroxide and aluminum oxide on the performance of a modified solvay process for CO₂ capture: A comparative study." *International Journal of Energy Research*.
4. Mohammad, **Aya Abdel-Hamid I. Mourad**, Al-Marzouqi, A. H., El-Naas, M. H., Van der Bruggen, B., Al-Marzouqi, M., ... & Al Musharfy, M. (2021). CFD and statistical approach to optimize the average air velocity and air volume fraction in an inert-particles spouted-bed reactor (IPSBR) system. *Heliyon*, 7(3), e06369.
5. Mustafa, J., **Aya Abdel-Hamid I. Mourad**, Al-Marzouqi, A. H., & El-Naas, M. H. (2020). Simultaneous treatment of reject brine and capture of carbon dioxide: a comprehensive review. *Desalination*, 483, 114386.
6. Mohammad, A. F., **Aya Abdel-Hamid I. Mourad**, Mustafa, J., Al-Marzouqi, A. H., El-Naas, M. H., Al-Marzouqi, M. H., ... & Firmansyah, T. (2020). Computational fluid dynamics simulation of an Inert Particles Spouted Bed Reactor (IPSBR) system. *International Journal of Chemical Reactor Engineering*, 1(ahead-of-print).
7. **Aya Abdel-Hamid I. Mourad**, Ghasem, N. M., & Alraeesi, A. Y. (2018). Modelling and simulation of hydrogen production via water gas shift membrane reactor. *International Journal of Chemical Engineering and Applications*, 9(4).
8. Mohammad, Ameera F., **Aya Abdel-Hamid I. Mourad**, Jawad Mustafa, Ali H. Al-Marzouqi, Muftah H. El-Naas, Mohamed H. Al-Marzouqi, Bart Van der Bruggen, Mabruk I. Suleiman, and Mohamed Al Musharfy. "A CFD Investigation on the Effect of IPSBR Operational Conditions on Liquid Phase Hydrodynamics." In 2021 6th International Conference on Renewable Energy: Generation and Applications (ICREGA), pp. 153-157. IEEE, 2021.
9. Mustafa, Jawad, Ameera F. Mohammad, **Aya Abdel-Hamid I. Mourad**, Ali H. Al-Marzouqi, and Muftah H. El-Naas. "Treatment of saline wastewater and carbon dioxide capture using electrodialysis." In 2021 6th International Conference on Renewable Energy: Generation and Applications (ICREGA), pp. 158-162. IEEE, 2021.
10. **Aya Abdel-Hamid I. Mourad**, Nayef Mohamed Ghasem, Abdulrahman Yaqoub Alraeesi, "Modelling and Simulation of Hydrogen Production via Membrane Reactor", Annual Research and Innovation Conference, United Arab Emirates University, 2018.