

## CURRICULUM VITAE

### MOHAMED HUMAID MOHAMED HASSAN AL-MARZOUQI

Professor

Chemical & Petroleum Engineering, College of Engineering  
United Arab Emirates University

**EDUCATION:** **Ph. D. in Chemical Engineering**, August 1994, Oregon State University, Corvallis, Oregon.  
**Thesis:** An Experimental and Modeling Investigation of Gas Transport in a Selective Microporous Silica Membrane.  
**M. S. in Chemical Engineering**, December 1989, Washington State University, Pullman, Washington. **Thesis:** Electrostatic Effect During Surfactant Adsorption.  
**B. S. in Chemical Engineering**, August 1988. Washington State University, Pullman, Washington.

#### EMPLOYMENT HISTORY:

|                                                            |                                                                                                                             |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Vice Dean<br>September 2013 – Present                      | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering.                                                |
| Professor<br>September 2013                                | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering, Chemical and Petroleum Engineering Department. |
| Department Chair<br>September 2006 – 2012                  | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering, Chemical and Petroleum Engineering Department. |
| Associate Professor<br>September 2007–August 2013          | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering, Chemical and Petroleum Engineering Department. |
| Assistant Professor<br>September 1996 – 2007               | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering, Chemical and Petroleum Engineering Department. |
| Assistant Dean for Research:<br>September 1998–August 2004 | United Arab Emirates University, Al-Ain, U. A. E.<br>College of Engineering, Chemical and Petroleum Engineering             |
| Corrosion Engineer<br>Dec. 1994-August 1996                | Abu Dhabi Company for Onshore Oil Operations (ADCO), Abu Dhabi, U. A. E.                                                    |

#### AWARDS:

- Sheikh Rashid Award for Academic Achievement, 2013, Dubai, United Arab Emirates
- Recipient of the merit Award in June 2007, UAE University.
- Recipient of the merit Award in June 2006, UAE University.
- Recipient of the best Externally Research Project, 8th UAE University Research Conference, April 2007.
- Recipient of “The Best Interdisciplinary Research Project Award”, the 6th Annual UAE University Conference, 2005, UAE.
- Sheikh Rashid Award for Outstanding Academic Achievement, 1995, Dubai, United Arab Emirates.

#### FUNDED PROJECTS:

Below are some of the research grants that I have received as a **principle investigator (PI)**:

- Japan Cooperation Center, Petroleum (JCCP): Acid Gas Removal from Natural Gas Using Membrane Contactors: Applications to UAE Oil & Gas Industry, Dhs. **1,495,000**, UAEU/JCCP/ADGAS, 2005 – 2008.
- Japan Cooperation Center, Petroleum (JCCP): Removal of acid gases from natural gas using membrane contactors: PHASE II: Applications to ADGAS Field Conditions, Dhs. **6,500,000**, UAEU/JCCP/ADGAS, 2008 – 2013.
- National Research Foundation (NRF) Fund: “Separation of olefin/paraffin using hollow fiber membrane contactors”, UAE University 2011-2014, total budget of AED **750,000**.
- Emirates Foundation (EF) Fund: “Synthesis, characterization and testing of polymeric hollow fiber membrane employed for separation of gaseous hydrocarbon mixtures” 2011-2013, total budget of AED **170,000**.

#### EDITORIAL & JOURNAL REVIEW:

Journal of Membrane Science, Separation & Purification Technology, Chemical Engineering Science, Chemical Engineering Journal, Industrial & Engineering Chemistry Research, Chemical Engineering &

---

PATENTS:

1. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi. "ANALYZER FOR CO<sub>2</sub> DETERMINATION IN GAS STREAMS", Japanese patent application number: 2007-299773.
2. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi. "ANALYZER FOR H<sub>2</sub>S DETERMINATION IN GAS STREAMS", Japanese patent application number: 2010-45429 2009.
3. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi. "APPARATUS FOR H<sub>2</sub>S DETERMINATION IN GAS STREAMS", US patent application number: 2010-45429 2009

SELECTED JOURNAL PUBLICATIONS:

1. R. Faiz, K. Li, M. Al-Marzouqi, "H<sub>2</sub>S absorption at high pressure using hollow fibre membrane contactors Chemical Engineering and Processing 83 (2014) 33–42.
  2. Nayef Ghasem, Mohamed Al-Marzouqi, Zahoor Ismail, "Gas-liquid membrane contactor for ethylene/ethane separation by aqueous silver nitrate solution", Separation and Purification Technology, 127 (2014), 140-148.
  3. Nayef Ghasem, Mohamed Al-Marzouqi, Nihmiya Abdul Rahim, "Absorption of CO<sub>2</sub> from natural gas via gas-liquid PVDF hollow fiber membrane contactors and potassium glacinat as solvent", Jurnal Teknologi (Sciences & Engineering) 69:9 (2014) 121–126.
  4. Nayef Ghasem, Mohamed Al-Marzouqi, Nihmiya Abdul Rahim, "Modeling of CO<sub>2</sub> absorption in a membrane contactor considering solvent evaporation", Separation and Purification Technology 110 (2013) 1–10.
  5. Muna S. Bufaroosha, Mohamed A.R.A. Al-Naqbi, Mohamed H. Al-Marzouqi, Sayed A.M. Marzouk, "Portable dual-channel gas analyzer for continuous monitoring of carbon dioxide in gas streams", Microchemical Journal 110 (2013) 185–191.
  6. Nayef Ghasem, Mohamed Al-Marzouqi, Nihmiya Abdul Rahim, "Effect of polymer extrusion temperature on Poly(vinylidene fluoride) hollow fiber membranes; properties and performance used as gas-liquid membrane contractor for CO<sub>2</sub> absorption", Separation and Purification Technology, 90 (2012), 91-103.
  7. Nayef Ghasem, Mohamed Al-Marzouqi, Ali Duidar, "Effect of PVDF concentration on the morphology and performance of hollow fiber membrane employed as gas-liquid membrane contactor for CO<sub>2</sub> absorption", Separation and Purification Technology, 98 (2012), 174-185.
  8. Mohamed Al-Marzouqi and Muftah El-Naas, "The Role of Environmental Design Competitions in Engineering Education", International Journal of Engineering Education, 28(4) (2012) 1-7.
  9. Nayef Ghasem, Mohamed Al-Marzouqi, Liping Zhu, "Preparation and properties of polyethersulfone hollow fiber membranes with o-xylene as an additive used in membrane contactors for CO<sub>2</sub> absorption", Separation and Purification Technology, 90 (2012) 1–10.
  10. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, Masaaki Teramoto, Nadia Abdullatif, Zahoor M. Ismail, "Simultaneous removal of CO<sub>2</sub> and H<sub>2</sub>S from pressurized CO<sub>2</sub>–H<sub>2</sub>S–CH<sub>4</sub> gas mixture using hollow fiber membrane contactors", Separation and Purification Technology, 86 (2012) 88–97.
  11. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, Analyzer for continuous monitoring of H<sub>2</sub>S in gas streams based on a novel thermometric detection, Sensors and Actuators B, 162 (2012) 377– 383.
  12. Rami Faiz, Muftah. H. El-Naas, M. Al-Marzouqi, "Significance of gas velocity change during the transport of CO<sub>2</sub> through hollow fiber membrane contactors", Chemical Engineering Journal 168 (2011) 593–603.
  13. Ghasem N. and Al-Marzouqi M., "Effects of Shear Rate, Temperature, and Polymer Composition on the Shear Stress of Polyethersulfone/1-Methyl-2-pyrrolidone Cast Solutions" Journal of Chemical & Engineering Data, 56 (2011), 4444-4448.
  14. Nayef Ghasem, Mohamed Al-Marzouqi, Ali Duaidar, "Effect of quenching temperature on the performance of poly(vinylidene fluoride) microporous hollow fiber membranes fabricated via thermally induced phase separation technique on the removal of CO<sub>2</sub> from CO<sub>2</sub>-gas mixture", International Journal of Greenhouse Gas Control, 5 (2011) 1550–1558.
- Rami Faiz, M. Al-Marzouqi, "Insights on natural gas purification: Simultaneous absorption of CO<sub>2</sub> and H<sub>2</sub>S using membrane contactors", Separation and Purification Technology 76 (2011) 351–361.

15. Sayed A. M. Marzouk, Mohamed H. Al-Marzouqi, N. Abdullatif, Zahoor M. Ismail, "Removal of percentile level of H<sub>2</sub>S from pressurized H<sub>2</sub>S-CH<sub>4</sub> gas mixtures using hollow fiber membrane contactors and absorption solvents", *Journal of Membrane Science*, 360, 436-441, 2010.
16. Rami Faiz, M. Al-Marzouqi, "CO<sub>2</sub> removal from natural gas at high pressure using membrane contactors: Model validation and membrane parametric studies", *Journal of Membrane Science* (2010), 365, 232-241.
17. Rami Faiz and M. Al-Marzouqi, "H<sub>2</sub>S absorption via carbonate solution in membrane contactors: Effect of species concentrations", *Journal of Membrane Science*, (2010), 350 (1-2), 200-210.
18. Saeid Rajabzadeh, Masaaki Teramoto, Mohamed H. Al-Marzouqi, Eiji Kamio, Yoshikage Ohmukai, Tatsuo Maruyama and Hideto Matsuyama, "Experimental and theoretical study on propylene absorption by using PVDF hollow fiber membrane contactors with various membrane structures", *Journal of Membrane Science*, (2010), 346 (1), 86-97.
19. Muftah H. El-Naas, Mohamed Al-Marzouqi, Sayed A. Marzouk and Nadia Abdullatif, "Evaluation of the removal of CO<sub>2</sub> using membrane contactors: Membrane wettability", *Journal of Membrane Science*, (2010), 350 (1-2), 410-416.
20. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, Muftah H. El-Naas, Nadia Abdullatif and Zahoor M. Ismail, "Removal of carbon dioxide from pressurized CO<sub>2</sub>-CH<sub>4</sub> gas mixture using hollow fiber membrane contactors", *Journal of Membrane Science*, 351 (2010), 21-27.
21. Sayed A.M. Marzouk and Mohamed H. Al-Marzouqi, "Gas analyzer for continuous monitoring of carbon dioxide in gas streams", *Sensors and Actuators B: Chemical*, 145 (2010), 398 – 404.
22. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, and Samira M.S.M. Baomran, "Simple analyzer for continuous monitoring of sulfur dioxide in gas streams", *Microchemical Journal*, 95 (2010), 207-212.
23. Rami Faiz, and M. Al-Marzouqi, "Mathematical modeling for the simultaneous absorption of CO<sub>2</sub> and H<sub>2</sub>S using MEA in hollow fiber membrane contactors", *Journal of Membrane Science*, 342 (2009) 269-278.
24. Al-Marzouqi, M., S. Marzouk, M. H. El-Naas, and N. Abdullatif, "CO<sub>2</sub> Removal from CO<sub>2</sub>-CH<sub>4</sub> Gas Mixture Using Different Solvents and Hollow Fiber Membranes", *Ind. Eng. Chem. Res.*, 48 (2009), 3600-3605.
25. Nayef M. Ghasem, Mohamed H. Al-Marzouqi, and Muftah H. El-Naas, "Effect of Temperature, Composition, and Shear Rate on Polyvinylidene Fluoride/Dimethylacetamide Solution Viscosity", *Journal of Chemical Engineering Data*, (2009), 54, 3276-3280.
26. Saeid Rajabzadeh, Shinya Yoshimoto, Masaaki Teramoto, M. Al-Marzouqi, Hideto Matsuyama, "CO<sub>2</sub> absorption by using PVDF hollow fiber membrane contactors with various membrane structures", *Separation and Purification Technology*, 69 (2009) 210-220.
27. M. Al-Marzouqi, M. El-Naas, S. Marzouk, and N. Abdullatif, "Modeling of chemical absorption of CO<sub>2</sub> in membrane contactors", *Separation and Purification Technology*, 62 (2008) 499-506.
28. M. Al-Marzouqi, M. H. El-Naas, S. Marzouk, M. Abdulkarim, N. Abdullatif, and R. Faiz, "Modeling of CO<sub>2</sub> absorption in membrane contactors" *Separation and Purification Technology*, 59 (2008) 286-293.
29. El-Naas, M. H., Abu Al-Rub, F., I. Ashour, and M. Al Marzouqi, "Effect of competitive interference on the biosorption of Lead (II) by *C. vulgaris*" *Chemical Engineering and Processing*, 46 (2007) 1391-1399.

#### BOOK CHAPTER:

Nayef Ghasem, Mohamed Al-Marzouqi, Modeling, simulation and experimental verification of gas-liquid membrane contactors for Carbon dioxide absorption. *Encyclopedia of Information Science and Technology*, Third Edition, June 2014

#### SELECTED CONFERENCE PRESENTATIONS:

1. Mohamed H. Al-Marzouqi, Sayed A.M. Marzouk, and Nadia Abdullatif, "Removal of CO<sub>2</sub> and H<sub>2</sub>S from natural gas using Hollow Fiber Membrane Contactors", The 22nd Joint GCC-Japan Environment Symposium, March 2014, Dhahran, Saudi Arabia.
2. Mohamed Al-Marzouqi, Sayed A.M. Marzouk, and Nadia Abdullatif, "Removal of Acid Gases from Natural Gas using Gas-Liquid Contactors", Abu Dhabi International Research and Development Academic Conference & Exhibition (ADRAC 2014), February 2014, Abu Dhabi, UAE.
3. Nayef Ghassem, Mohamed Al-Marzouqi, and N. Abdul Rahim, "Regeneration of alknol-amine solvents used for CO<sub>2</sub> absorption from natural gas via gas-liquid hollow fiber membrane contactor", Abu Dhabi International Research and Development Academic Conference & Exhibition (ADRAC 2014), February 2014, Abu Dhabi, UAE.

4. Nayef Ghassem, Mohamed Al-Marzouqi, and N. Abdul Rahim, "Silver-facilitated ethylene/ethane separation in a gas-liquid membrane contactor system", Abu Dhabi International Research and Development Academic Conference & Exhibition (ADRAC 2014), February 2014, Abu Dhabi, UAE.
5. Nayef Ghassem, Mohamed Al-Marzouqi, N. Abdul Rahim, Removal of Heavy Metals Using Water-Soluble Polymer via PVDF Hollow Fiber Membrane Contactor. 3rd ScienceOne International Conference on Environmental Sciences, Dubai on January 21-23, 2014.
6. Nayef Ghassem, Mohamed Al-Marzouqi, N. Abdul Rahim. Simulation of Gas/Liquid Membrane Contactor with COMSOL Multiphysics. COMSOL conference, WTC Rotterdam, Netherlands. October 23 - 25, 2013. Session: Chemical reaction engineering II.
7. Nayef Ghassem, Mohamed Al-Marzouqi, N. Abdul Rahim. Absorption of acid gas via gas-liquid membrane contactors and potassium glycinate as solvent. The 2nd international conference on water energy & environment 2013. September 21-24, 2013 Kusadasi, Turkey.
8. Nayef Ghassem, Mohamed Al-Marzouqi, N. Abdul Rahim. Absorption of CO<sub>2</sub> from natural gas utilized gas-liquid PVDF hollow fiber membrane contactors via potassium glycinate solvent. 11th International conference on membrane science and technology, Seri pacific hotel, Kuala Lumpur, 27-29th August 2013.
9. Mohamed Al-Marzouqi, Sayed Marzouk, and Nayef Ghassem, "Acid gas removal from natural gas using Hollow Fiber Membrane Contactors at ADGAS field conditions", ARDAC 2013, 26-28 February, 2013, Abu Dhabi, UAE.
10. Nayef Ghassem and Mohamed Al-Marzouqi, "Absorption of CO<sub>2</sub> form gas mixture employing gas-liquid membrane contactors via potassium glycinate", ARDAC 2013, 26-28 February, 2013, Abu Dhabi, UAE.
11. Nayef Ghassem, Mohamed Al-Marzouqi, "Modeling and simulation for the removal of pollutant gases from natural gas using membrane contactors", Advance in fluid mechanics & heat & mass transfer, World Scientific and Engineering Academy and Society (WSEAS) International Conferences Istanbul, Turkey, August 21-23, 2012.
12. L. Al Nuaimi, N. Ghassem, M. Al. Marzouqi, "Fabrication of polymeric hollow fiber membrane for the production of safe drinking water". The 2011 International Conference on Water, Energy and Environment, 14 -17 November, 2011, Sharjah, UAE.
13. Mohamed Al-Marzouqi, "Selective Removal of CO<sub>2</sub> and H<sub>2</sub>S from Pressurized Gas Streams using Hollow Fiber Membrane Contactors", The 20th Joint Japan-UAE Environmental Symposium, 22-24, November, 2011, Abu Dhabi, UAE.
14. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, "Gas analyzer for continuous monitoring of hydrogen sulfide in gas streams based on novel detection scheme", Pittsburgh Conference (PITTCO), March, 2011, Atlanta, USA
15. N. Ghassem, M. Al-Marzouqi<sup>1</sup>, R. Al-Marzouqi, A. Dowaidar, M. Vialatte, "Removal of CO<sub>2</sub> from gas mixture using hollow fiber membrane contactors fabricated from PVDF/ Triacetin/ Glycerol cast solution", European Conference of Chemical Engineering, Tenerife, Spain, November 30- December 2, 2010.
16. R. Al-Marzouqi, M. Vialatte, N. Ghassem, M. Al-Marzouqi, "Fabrication, characterization and testing of Polyethersulfone hollow fiber membranes for the separation of CO<sub>2</sub> from CO<sub>2</sub>-CH<sub>4</sub> gas mixture". 2nd International Conference on Chemical Engineering and Advanced Materials (CEAM 2010-VF). Italy, November 15th - 26th, 2010.
17. Basim Abu-Jdayil, Hazim Al-Attar and Mohamed Al-Marzouqi, "Outcomes Assessment in Chemical and Petroleum Engineering Programs", ISEE 1-2 July, 2010, Cork, Ireland.
18. Hazim Al-Attar, Basim Abu-Jdayil and Mohamed Al-Marzouqi, "Assessment of Educational Objectives in Chemical and Petroleum Engineering Programs", ISEE 1-2 July, 2010, Cork, Ireland.
19. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, "Gas analyzer for continuous monitoring of sulfur dioxide in gas streams based on amperometric detector", Pittsburgh Conference (PittCon 2010), Orlando, FL, USA, Feb. 28 - March 5, 2010.
20. Sayed A.M. Marzouk, Mohamed H. Al-Marzouqi, Muftah H. El-Naas, Nadia Abdullatif, Zahoor M. Ismail, "Removal of CO<sub>2</sub> and H<sub>2</sub>S from Pressurized Gas Streams using Hollow Fiber Membrane Contactors and Stripping Solvents: Challenges and Progress", 2010 JCCP Environmental Symposium, 01-04, February, 2010, Bahrain.