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1. Personal Information

a. Education

- 1996** *Doctor of Philosophy (Chemical Engineering)*
McGill University, Montreal, Canada
- 1991** *Master of Engineering (Chemical Engineering),*
McGill University, Montreal, Canada
- 1988** *Bachelor of Applied Science (Chemical Engineering)*
University of British Columbia, Vancouver, Canada

b. Professional Experience

- Jan 2021 to Present **Research Professor**
- Feb 2018 to Dec 2020 **Director**
Gas Processing Center, College of Engineering
Qatar University
- Aug 2015 to Aug 2018 **QAFCO Chair Professor**
Gas Processing Center, College of Engineering
Qatar University
- June 2013 to Aug 2015 **Professor**
Department of Chemical and Petroleum Engineering
UAE University
- Aug. 2012 to Aug 2014 **Chair**
Department of Chemical and Petroleum Engineering
UAE University
- Jan. 2011 to Sep. 2012 **Director**
Petroleum Science and Engineering Graduate Program
UAE University
- Sep. 2007 to 2013 **Associate Professor**
Department of Chemical and Petroleum Engineering
UAE University
- Sep. 2008 to 2010 **Director**
Internal Funding Unit at Research Affairs
UAE University
- Sep. 2005 to 2007 **Assistant Professor**
Sep. 1998 to 2004
Department of Chemical and Petroleum Engineering
UAE University
- Nov. 1997 to 1998 **Research Associate**
BIOPRO Research Center,
Ecole Polytechnique, Montreal, Canada

2. Research, Scholarly, and Creative Activities

a. Books

1. **El-Naas, M. H.**, A. Banerjee (Editors), “Petroleum Industry Wastewater: *Advanced and Sustainable Treatment Methods*, Elsevier (2022) ISBN: 9780323858847.
2. Zhang, Z., T. N. Borhani, **M. H. El-Naas**, S. M. Soltani, Y. (Editors) “Gas Capture Processes”, MDPI (2020) ISBN: 9783039287802

b. Chapters in Books

1. Al-Khalid, T., R. Surkatti, **M. H. El-Naas**, Prospects of green technology in the management of refinery wastewater: application of biofilms, Chapter 5 in “Petroleum Industry Wastewater: *Advanced and Sustainable Treatment Methods*” Edited by M. H. El-Naas and A. Banerjee, Elsevier (2022) ISBN: 9780323858847
2. Ibrahim, M. H., A. Banerjee, **M. H. El-Naas**, Treatment of petroleum industry wastewater: current practices and perspectives, Chapter 1 in “Petroleum Industry Wastewater: *Advanced and Sustainable Treatment Methods*” Edited by M. H. El-Naas and A. Banerjee, Elsevier (2022) ISBN: 9780323858847
3. Surkatti, R., M. H. Ibrahim, **M. H. El-Naas**, Date pits activated carbon as an effective adsorbent for water treatment, Chapter 7 in *Sorbents Materials for Controlling Environmental Pollution Current State and Trends*, Edited by A. N. Delgado, Elsevier (2021) ISBN: 978-0-12-820042-1.
4. Al-Khalid, T., R. Surkatti, **M. H. El-Naas**, “Organic Contaminants in Industrial Wastewater: Prospects of Waste Management by Integrated Approaches”, Chapter 10 in *Combined Application of Physico-Chemical & Microbiological Processed for Industrial Effluent Treatment Plant*, Editors: Maulin Shah and Aditi Banerjee, Springer (2020) ISBN 978-981-15-0496-9.
5. Hadi, B and **M. H. El-Naas**, “Biosorption of Heavy Metals: Potential and Applications of Yeast Cells for Cadmium Removal”, in *Environmental Contaminants: Ecological Implications and Management*, Editor: Ram N. Bharagava, Springer (2019). ISBN 978-981-13-7903-1
6. Zhang, Z.; M. H. Ibrahim; **M. H. El-Naas**; J. Cai, “Zeolites Nanocomposite Membrane Applications in CO₂ Capture”, Chapter 50 in *Handbook of Nanomaterials for Industrial Applications: A volume in Micro and Nano Technologies*, Editor: Chaudhery M. Hussain, Elsevier (2018). ISBN 978-0-12-813351-4.
7. Zacharia, R., **M. H. El-Naas**, and M. J. Al-Marri, “Photocatalytic Oxidation of Non-Acid Oxygenated Hydrocarbons: Application in GTL Process”, Chapter 15 in *Water Management : Social and Technological Perspectives*, Edited by Mutiu Kolade AMOSA , IQBAL M. Mujtaba , Thokozani Majozi, Taylor & Francis Ltd (2018). ISBN 9781138067240
8. Al-Khalid, T. and **M. H. El-Naas**, “Organic Contaminants in Refinery Wastewater: Characterization and Novel Approaches for Biotreatment”, in *Petroleum Science and Engineering*, Editor: M. Zoveidavianpoor, InTech (2018). ISBN 978-953-51-5321-4
9. Zhien Z., T. N. G. Borhani, **M. H. El-Naas**, CO₂ Capture, in *Exergetic, Energetic and Environmental Dimensions*, Editors: Ibrahim Dincer, Can Ozgur Colpan, Onder Kizilkan, Elsevier (2018). ISBN 978-0128137345.
10. Moussa, D. T. and **M. H. El-Naas**, Electrochemical technologies for produced water treatment, Chapter 13 in *Inorganic Pollutants in Wastewater: Methods of Analysis, Removal and Treatment*, Editors: Inamuddin, Abdullah M. Asiri and Ali Mohammad, Materials Research Forum (2017). ISBN 978-1-945291-34-0.

11. **El-Naas, M. H.**, Hussein A. Mousa and Maisa El Gamal, Microbial Degradation of Chlorophenols, in *Microbe-induced Degradation of Pesticides*, Edited by: S. N. Singh, Springer (2017), ISBN: 978-3-319-45155-8.
12. **El-Naas, M. H.**, Reject Brine Management, in *Desalination, Trends and Technologies*, Edited by: Michael Schorr, Publisher: InTech, February 2011; ISBN 978-953-307-311-8.
13. **El-Naas, M. H.** and M. A. Alhaija, Modeling of Adsorption Processes, in *Mathematical Modelling*, Edited by: Christopher R. Brennan, Nova Publishing, June 2011, ISBN: 978-1-61209-651-3.

c. Patents and Patent Applications

1. Mohammad, A. F., A. H. Al-Marzouqi, **M. H. El-Naas**, "A Method for Ammonia Recovery from Contaminated Water Including Solvay Effluent and Aqueous Solutions" U.S. Patent No. 11,453,951B1 (2022).
2. **El-Naas, M. H.**, R. Surkatti, "Nano-biotreatment of GTL Process Water". U.S. Patent Application No. 63170055 (2021).
3. Ali, S., D. Kumar, **M. H. El-Naas.**, "Active and Stable Copper-Based Catalysts for CO₂ Hydrogenation to Methanol". US Patent Application No. 63136542 (2021).
4. Ali, S., D. Kumar, A. Gamal, M. M Khader, **M. H. El-Naas.**, "Metal-Silica Nanocomposites prepared through a Single Step Solution Combustion Synthesis (SCS) Method". US Patent Application No. 63133637 (2021).
5. Deina T. A., **El-Naas, M. H.**, "Electrocoagulation Cell Design". U.S. Patent No. 11,161,759 (2021)
6. Magzoub, M. I., **El-Naas, M. H.**, Nasser, M. S., "Utilization of Steel-Making Waste in Drilling Fluids Formulations". U.S. Patent No. 11,034,874 (2021)
7. **El-Naas, M. H.**, " Process for Capture of Carbon Dioxide and Desalination" US Patent No. 10,118,843 B2 (2018).
8. **El-Naas, M. H.**, "System for Contacting Gases and Liquids" US Patent No. 9,724,639 B2 (2017).
9. **El-Naas, M. H.**, J. Acio and A. Hassan "Spouted Bed Bio-Reactor System" US Patent Application No. 13/975,834
10. **El-Naas, M. H.** and S. Al-Zuhair, Process and System for the Treatment of Industrial and Petroleum Refinery Wastewater; Canadian Patent No. 2,796,105
11. **El-Naas, M. H.** and S. Al-Zuhair, Process and System for the Treatment of Industrial and Petroleum Refinery Wastewater; UK Patent Application No. 1202411.3; US No. 13/676,755.

d. Articles in Refereed Journals

1. Mustafa, J., A. H. Al-Marzouqi, N. Ghasem, **M. H. El-Naas**, B. Van der Bruggen, Electrodialysis process for carbon dioxide capture coupled with salinity reduction: A statistical and quantitative investigation, *Desalination* (2023) 548, 116263.
2. Sodiq, A., Y. Abdullatif, B. Aissa, A. Ostovar, N. Nassar, **M. H. El-Naas**, A. Amhamed, A review on progress made in direct air capture of CO₂, *Environmental Technology & Innovation* (2023) 29, 102991.
3. Migdadi, Y. K. A., A. A. Khalifa, A. Al-Swidi, A. I. Amhamed, **M. H. El-Naas**, A Conceptual Framework of Customer Value Proposition of CCU-Formic Acid Product, *Sustainability* (2022) 14, 16351.

4. Ali, S., D. Kumar, K. C. Mondal, **M. H. El-Naas**, Development of highly active Cu-based CO₂ hydrogenation catalysts by solution combustion synthesis (SCS): Effects of synthesis variables, *Catalysis Communications* (2022) 172, 106543
5. Ewis, D., M. Ba-Abbad, A. Benamor, **M. H. El-Naas**, Adsorption of organic water pollutants by clays and clay minerals composites: A comprehensive review, *Applied Clay Science* (2022), 229, 106686.
6. Ahmed, S.A.; Surkatti, R.; Ba-Abbad, M.M.; **El-Naas, M.H.** Optimization of the Biotreatment of GTL Process Water Using *Pseudomonas aeruginosa* Immobilized in PVA Hydrogel. *Processes* (2022) 10, 2568.
7. Mourad, A. A., A. Mohammad, A. Al-Marzouqi, M. Altarawneh, M. H. Al-Marzouqi, **M. H. El-Naas**, Carbon dioxide capture through reaction with potassium hydroxide and reject brine: A kinetics study, *International Journal of Greenhouse Gas Control* (2022) 120, 103768.
8. Mourad, A. A., A. Mohammad, A. Al-Marzouqi, M. Altarawneh, M. H. Al-Marzouqi, **M. H. El-Naas**, A process for CO₂ capture and brine salinity reduction through reaction with potassium hydroxide: A multi-stage evaluation, *Journal of Natural Gas Science and Engineering* (2022) 106, 104756.
9. Mahmud, N., M. H. Ibrahim, D. Fraga Alvarez, D. Esposito, **M. H. El-Naas**, Evaluation of parameters controlling calcium recovery and CO₂ uptake from desalination reject brine: An optimization approach, *Journal of Cleaner Production* (2022) 369, 133405.
10. Alrebei, O., A. I. Amhamed, **M. H. El-Naas**, M. Hayajnh, Y. Orabi, W. Fawaz, A. Al-tawaha, A. Valera Medina, State of the art in separation processes for alternative working fluids in clean and efficient power generation, *Separations* (2022) 9, 14.
11. Khalifa, A. A., A. Ibrahim, A. I. Amhamed, **M. H. El-Naas**, Accelerating the Transition to a Circular Economy for Net-Zero Emissions by 2050: A Systematic Review, *Sustainability* (2022) 14, 11656.
12. Ewis, D., N. Mahmud, A. Benamor, M. M Ba-Abbad, M. Nasser, **M. H. El-Naas**, Enhanced Removal of Diesel Oil Using New Magnetic Bentonite-Based Adsorbents Combined with Different Carbon Sources, *Water, Air, & Soil Pollution* (2022) 223, 1-19.
13. Ashraf, H. M. SA Al-Sobhi, **M. H. El-Naas**, Mapping the desalination journal: A systematic bibliometric study over 54 years, *Desalination* (2022) 526, 1155352.
14. Ewis, D., M. M. Ba-Abbad, A. Benamor, N. Mahmud, M. Nasser, **M. H. El-Naas**, A. W. Mohammad, Adsorption of 4-Nitrophenol onto Iron Oxide Bentonite Nanocomposite: Process Optimization, Kinetics, Isotherms and Mechanism, *International Journal of Environmental Research* (2022) 16m 1-13.
15. Mahmud, N., D.V.F. Alvarez, M.H. Ibrahim, **M .H. El-Naas**, D.V. Esposito, Magnesium recovery from desalination reject brine as pretreatment for membraneless electrolysis, *Desalination* (2022) 525, 115489.
16. Mourad, A. A.H., A.F. Mohammad, A.H. Al-Marzouqi, **M. H. El-Naas**, M. H. Al-Marzouqi, M. Altarawneh, CO₂ capture and ions removal through reaction with potassium hydroxide in desalination reject brine: Statistical optimization, *Chemical Engineering and Processing-Process Intensification* (2022) 170, 108722.
17. Mohammad, A. F., A. H. Al-Marzouqi, **M. H. El-Naas**, B. Van der Bruggen, M. H. Al-Marzouqi, A New Process for the Recovery of Ammonia from Ammoniated High-Salinity Brine, *Sustainability* (2021) 13, 10014.
18. Mustafa, J., A. H. Al-Marzouqi, **M. H. El-Naas**, N. Ghasem, Electrodialysis based waste utilization methodology for the desalination industry, *Desalination* (2021) 520, 115327.
19. Mourad, A., A. F. Mohammad, A. H Al-Marzouqi, **M. H El-Naas**, M. H Al-Marzouqi, M. Altarawneh, KOH-Based Modified Solvay Process for Removing Na Ions from High Salinity Reject Brine at High Temperatures, *Sustainability* 13 (2021) 10200.

20. Mohammad, A. F., A. A-H Mourad, E. Galiwango, E. G. Lwisa, A. H. Al-Marzouqi, **M. H. El-Naas**, B. Van der Bruggen, M. 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
21. Al-Tamreh, S. A., M. H. Ibrahim, **M. H. El-Naas**, J. Vaes, D. Pant, A. Benamor, A. Amhamed, Electroreduction of Carbon Dioxide into Formate: A Comprehensive Review, *ChemElectroChem* (2021), 8, 1-15.
22. Gamal, A., K. Eid , **M. H. El-Naas**, D. Kumar, A. Kumar, Catalytic Methane Decomposition to Carbon Nanostructures and CO_x-Free Hydrogen: A Mini-Review, *Nanomaterials* (2021) 11,1226.
23. A. I. Mourad, A. F. Mohammad, M. Altarawneh, A. H. Al-Marzouqi, **M. H. El-Naas**, M. H. Al-Marzouqi, 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* (2021), 1–13.
24. Sleiti, A. K., W. A Al-Ammari, M. Abdelrazeq, **M.H. El-Naas**, M. A. Rahman, A. Barooah, R. Hasan, K. Manikonda, Comprehensive assessment and evaluation of correlations for gas-oil ratio, oil formation volume factor, gas viscosity, and gas density utilized in gas kick detection, *Journal of Petroleum Science and Engineering* (2021), 207, 109135.
25. Awad, A. A., R. Jalab, M. S. Nasser, **M. H. El-Naas**, I A. Hussein, J. Minier-Matar, S. Adham, Evaluation of cellulose triacetate hollow fiber membrane for volume reduction of real industrial effluents through an osmotic concentration process: A pilot-scale study, *Environmental Technology & Innovation* (2021), 101873
26. Mohammad, A., A.A.H.I. Mourad , A.H. Al-Marzouqi a , **M.H. El-Naas** , B. Van der Bruggen e , M. Al-Marzouqi a , F. Alnaimat b , M. Suleiman f , M. Al Musharfy, CFD and statistical approach to optimize the average air velocity and air volume fraction in an inert-particles spouted-bed reactor (IPSBR) system, *Heliyon* (2021) 7, 3, E06369.
27. Nafis Mahmud, N., A. Benamor, M., S. Nasser, M. M. Ba-Abbad, **M. H. El-Naas**, A. W. Mohammad, Effective Heterogeneous Fenton-Like degradation of Malachite Green Dye Using the Core-Shell Fe₃O₄@SiO₂ Nano-Catalyst, *ChemistrySelect* (2021), 6, 865– 875.
28. Surkatti, R., Z. A Al Disi, **M. H. El-Naas**, N. S. Zouari, M. van Loosdrecht and U. Onwusogh, Isolation and identification of organics-degrading bacteria from GTL process water, *Frontiers in Bioengineering and Biotechnology* (2021) 8, 603305.
29. Albatrni, H., H. Qiblawey, **M. H. El-Naas**, Comparative study between adsorption and membrane technologies for the removal of mercury, *Separation and Purification Technology* (2021), 257, 117833
30. Surkatti, R., **M. H. El-Naas**, M. van Loosdrecht, A. Benamor, F. Al-Naemi, U. Onwusogh, Biotechnology for Gas-to-liquid (GTL) wastewater treatment: A review, *Water* (2020) 12 (8), 2126
31. Yousef, R., H. Qiblawey, **M. H El-Naas**, Adsorption as a Process for Produced Water Treatment: A Review, *Processes* (2020) 8 (12), 1657
32. Al-Marzouqi, A., J. Mustafa, A. Mourad, **M. H. El-Naas**, Simultaneous treatment of reject brine and capture of carbon dioxide: A comprehensive review, *Desalination* (2020) 483, 114386.
33. Ewis, D., A. Benamor, M. M Ba-Abbad, M. Nasser, **M. H. El-Naas**, H. Qiblawey, Removal of Oil Content from Oil-Water Emulsions Using Iron Oxide/Bentonite Nano Adsorbents, *Journal of Water Process Engineering* (2020), 38, 101583.
34. Genawi, N. W., M. H. Ibrahim, **M. H. El-Naas**, A. E. Alshaik, Chromium Removal from Tannery Wastewater by Electrocoagulation: Optimization and Sludge Characterization, *Water* (2020) 12 (5) 1374.

35. Sleiti, A. K., G. Takalkar, **M. H. El-Naas**, A. R. Hasan, M. A. Rahman, Early Gas Kick Detection in Vertical Wells via Transient Multiphase Flow Modelling: A Review, *Journal of Natural Gas Science and Engineering* (2020) 103391.
36. Mohammad, A., A. I Mourad, J. Mustafa, A. H. Al-Marzouqi, **M. H. El-Naas**, M. H. Al-Marzouqi, F. Alnaimat, M. I Suleiman, M. Al Musharfy, T. Firmansyah, Computational fluid dynamics simulation of an Inert Particles Spouted Bed Reactor (IPsBR) system, *International Journal of Chemical Reactor Engineering* (2020) 20200025.
37. Mahmud, N., A. Benamor, M. S. Nasser, M. M. Ba-Abbad, **M. H. El-Naas**, H. Qiblawey, Chemical kinetics of carbon dioxide in the blends of different amino acid salts and methyldiethanolamine, *International Journal of Energy Research* (2020),
38. Dina Ewis, Ahmed Gomaa Talkhan, Abdelbaki Benamor, Hazim Qiblawey, Mustafa Nasser, Muneer M Ba-Abbad, **M. H. El-Naas**, Corrosion Behavior of API-X120 Carbon Steel Alloy in a GTL FT Process Water Environment at Low COD Concentration, *Metals* (2020) 10 (6), 707
39. Magzoub, M. I., M. H. Ibrahim, M. S. Nasser, **M. H. El-Naas**, M. Amani, Utilization of Steel-Making Dust in Drilling Fluids Formulations, *Processes* (2020) 8 (5) 538.
40. Talkhan, A. G., A. Benamor, M. Nasser, **M. H. El-Naas**, S. A. El-Tayeb, S. El-Marsafy, Absorption of CO₂ in aqueous blend of methyldiethanolamine and arginine, *Asia-Pacific Journal of Chemical Engineering* (2020), 15, 2460.
41. Ibrahim, M. H., D.T. Moussa, **M. H. El-Naas**, M. S. Nasser, A perforated electrode design for passivation reduction during the electrochemical treatment of produced water, *Water Process Engineering* (2020) 33, 101091
42. Awad, A., R. Jalab, A. Benamor, M. S Naser, M. M Ba-Abbad, **M. H. El-Naas**, A. W. Mohammad, Adsorption of organic pollutants by nanomaterial-based adsorbents: An overview, *Journal of Molecular Liquids*. 301 (2020) 112335.
43. Shamlooh, M.; A. Rimeh, M. S Nasser, M. A Al-Ghouti, **M. H El-Naas**, H. Qiblawey, Enhancement of flocculation and shear resistivity of bentonite suspension using a hybrid system of organic coagulants and anionic polyelectrolytes *Separation and Purification Technology*, 237 (2020) 116462.
44. Zhang, Z., T. N. Borhani, **M. H. El-Naas**, S. M. Soltani, Y. Yan, Gas Capture Processes, *Processes* (2020) 8 (1), 70
45. Yousefi, S., M. S.Nasser, I. A Hussein, A. Benamor, **M. H. El-Naas**, Influence of polyelectrolyte structure and type on the degree of flocculation and rheological behavior of industrial MBR sludge, *Separation and Purification Technology* (2020), 233, 116001.
46. Ibrahim, M. H., **M. H. El-Naas**, R. Zevenhoven, S. A. Al-Sobhi, Enhanced CO₂ capture through reaction with steel-making dust in high salinity water, *International Journal of Greenhouse Gas Control*, 91 (2019) 102819
47. Osman, M. A., **M. H. El-Naas**, S. Al-Zuhair, Electrocoagulation treatment of reject brine effluent from Solvay process, *Desalination and Water Treatment*, (2019) 163 (2019) 325–335
48. Yousefi, S. A., M. S. Nasser, I. A. Hussein, A. Benamor, **M. H. El-Naas**, Influence of polyelectrolyte structure and type on the degree of flocculation and rheological behavior of industrial MBR sludge, *Separation and Purification Technology*, 233 (2019) 116001
49. Mohammad, A.F., **M. H. El-Naas**, A.H. Al-Marzouqi, M. I. Suleiman, M. Musharfy, “Optimization of magnesium recovery from reject brine for reuse in desalination post-treatment”, *Journal of Water Process Engineering* (2019) 31, 100810
50. Bouabidi, Z. B; **M. H. El-Naas**; Z. Zhang, Immobilization of Microbial Cells for the Biotreatment of Wastewater: A Review, *Environmental Chemistry Letters* (2019), 17 (1) 241-257.
51. Al Ketife, A.M. D., F. A. O. Al Momani, **M. H. El-Naas**, S. Judd, “A technoeconomic assessment of microalgal culture technology implementation for combined wastewater

- treatment and CO₂ mitigation in the Arabian Gulf”, *Process Safety and Environmental Protection* (2019) 127, 90-102
52. Ibrahim, M. H., **M. H. El-Naas**, A. Benamor, S. S. Al-Sobhi, Z. Zhang, “Carbon Mineralization by Reaction with Steel-Making Waste: A Review”. *Processes* (2019) 7 (2) 115
 53. Mahmud, M., A. Benamor, M. Nasser, **M. H. El-Naas**, P. Tontiwachwuthikul, “Reaction Kinetics of Carbon Dioxide in Aqueous Blends of N-Methyldiethanolamine and L-Arginine Using the Stopped-Flow Technique”. *Processes* (2019) 7 (2) 81
 54. **El-Naas, M. H.**, Zacharia, R., N. Elbashir, Zhang, Z., Dindoruk, B., Editorial for the special issue (GPS, 2016), *Journal of Natural Gas Science and Engineering* (2018), 55, 563-564.
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 56. Ibrahim, M., **M. H. El-Naas**, Z. Zhang, and B. Van der Bruggen, CO₂ Capture Using Hollow Fiber Membranes: A Review of Membrane Wetting, *Energy Fuels* (2018), 32, 963–978
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 59. Abotaleb, A., **M. H. El-Naas**, A. Amhamed, Enhancing gas loading and reducing energy consumption in acid gas removal systems: A simulation study based on real NGL plant data, *Journal of Natural Gas Science and Engineering* (2017). Doi.org/10.1016/j.jngse.2017.08.011
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 61. Surkatti, R., **M. H. El-Naas**, Competitive interference during the biodegradation of cresols, *International Journal of Environmental Science and Technology* (2018), Volume 15, Issue 2, pp 301–308
 62. Al-Saydeh, S. A., **M. H. El-Naas**, S. J. Zaidi, Copper removal from industrial wastewater: A comprehensive review, *Journal of Industrial and Engineering Chemistry* 56 (2017) 35–44.
 63. **El-Naas, M. H.**, A. F. Mohammad, M. I. Suleiman, M. Al Musharfy and A. H. Al-Marzouqi, A New Process for the Capture of CO₂ and Reduction of Water Salinity, *Desalination* 411 (2017) 69–75
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69. **El-Naas, M. H.**, R. Surkatti, S. Al-Zuhair, Petroleum refinery wastewater treatment: A pilot scale study, *Journal of Water Process Engineering*. 14 (2016) 71–76.
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87. Hastaoglu, M. A., **M. H. El-Naas** and A. Othman, Sulfur Removal in Fluidized Bed Reactors, *UAEU Research Conference*, Al-Ain, 2001.
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89. Hilal N., M. A. Hastaoglu, M. Abdulkarim, and **M. H. El-Naas**, Simulation of a Reacting Particle in a Fluidized Bed, *Research 2000*, Bath, England, January 2000.
90. **El-Naas, M. H.**, R. J. Munz, and F. Ajersch, Effect of Calcium Oxide Structure on the Solid Phase Synthesis of Calcium Carbide, *The 49th Canadian Chemical Engineering Conference*, Saskatoon, Canada, 1999.

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92. El-Naas, M. H., R. J. Munz, and D. Berk, Plasma Pyrolysis of CANMET Residue, *The 42nd Canadian Chemical Engineering Conference*, Toronto, Ontario, Canada, October 1992.

iii. Invited talks

93. El-Naas, M. H, CO₂ sequestration through Carbon Mineralization: Current Practice and Future Prospective, *the Fifth Global Sustainable Technology & Innovation Community (CCU in the Middle-East)*, Dubai, UAE, 24-27 October 2021 (**Keynote**).
94. El-Naas, M. H., Mineral Carbonation: an effective approach to carbon management, *International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climate*, Doha, Qatar, December 5, 2019.
95. El-Naas, M. H., Capturing the essence of CO₂ capture, *ORYX GTL Seminar Series*, Department of Chemical Engineering, Texas A&M Qatar, April 2018.
96. El-Naas, M. H., "Assessment of a New Process for CO₂ Capture ", 6th TRC-JCCP/IDEMITSU International Symposium, Abu Dhabi, , February 10-11, 2016 (**Keynote**)
97. El-Naas, M. H., Industrial water treatment: a Pilot Study, *Industrial Water Re-use & Recycling conference*, Abu Dhabi, June 7-10, 2015
98. El-Naas, M. H., R. Surkatti, A. R. Kadiri, Novel approaches to the treatment of refinery wastewater, *The 23rd Joint JCCP-GCC Environment Symposium*, Kuwait, December 15-17, 2014.
99. El-Naas, M. H., Innovation in industrial wastewater treatment: A Case Study, *Water Management in Oil and Gas industry*, Abu Dhabi, UAE, June 9-10, 2014.
100. El-Naas, M. H., Sequestration of carbon dioxide using steel slag, *SPE-Abu Dhabi Section, Distinguished lecturer series*, Abu Dhabi, UAE, March 19, 2014.
101. El-Naas, M. H., Reduction of CO₂ emissions through reactions with desalination brine, *The 4th TRC-Idemitsu Workshop*, Abu Dhabi, UAE, January 23, 2014.
102. El-Naas, M. H., M. A. Alhaija, and S. Al-Zuhair, Innovative Approaches to the Treatment of Refinery Wastewater, *The 20th Joint JCCP-GCC Environment Symposium*, Abu Dhabi, UAE, November 2011.
103. El-Naas, M. H, Electrocoagulation for Water Treatment: Technical Aspects and Potential of Industrial Investment, *The International Conference on Perspectives of Industrial Investment in the GCC*, RAK, November 2010
104. El-Naas, M. H, Carbon Dioxide Capture, *The RAK Symposium on Environment Friendly Industries and Sustainable Economic Development*, June 5, 2010
105. El-Naas, M. H., Exploring Innovative Approaches to the Management of Refinery Wastewater, *Middle East Waste and Water Congress*, Dubai, May 2008.
106. El-Naas, M. H., S. Al-Muhtaseb, and S. Makhlof, Biodegradation of Organic Contaminants in Refinery Wastewater, *The 4th Joint KFUPM-JCCP Environment Symposium*, Dhahran Saudi Arabia, January 2008.
107. El-Naas, M. H. and A. H. Al-Marzouqi, Managing Desalination Reject Brine through Reactions with CO₂, *Middle East Waste and Water Congress*, Dubai, May 2007.

f. Industrial and International Collaborations

Over the past few years, I have established excellent research collaboration with major industrial partners and researchers in major academic institutions. These include:

1. Participated and led one team in a five-subproject Cluster Program for Carbon management involving more than 30 researchers. The five teams won a grant of US\$ 5,200,000 (2020 to 2025)
2. Worked on a major research project on the treatment of refinery wastewater, which was sponsored by *Japan Cooperation Center, Petroleum (JCCP)* in collaboration with *Abu Dhabi National Oil Company (ADNOC)*. The project led to the development and patenting of a three-step water treatment process. A pilot plant was then designed, fabricated and successfully tested inside a local refinery.
3. Obtained funding from *ADNOC* to study *CO₂ Capture through Reactions with High Salinity Water*. The project led to the development and patenting of a process and a reactor system. A second phase of the project, involving design, fabrication and testing of a pilot plant is currently underway.
4. Collaborated with *Qatar Shell* in obtaining research funding from *Qatar National Research Fund (QNRF)* on four major projects: *GTL water treatment, CO₂ mineralization, CO₂ conversion, and methane conversion*.
5. Established good research collaboration with researchers in major international institutions including:

○ Columbia University, USA	○ Ku Leuven University, Belgium
○ Texas A&M, College Station, USA	○ Imperial College London, UK
○ The Ohio State University, USA	○ VITO, Belgium
○ The University of Regina, Canada	○ Åbo Akademi University, Finland
○ Delft University, Netherland	○ Chongqing University, China

g. Major Contracts and Grants

Externally Funded Research Projects

- Obtained **NPRP** funding as Lead PI (2020-2025) for a *CO₂ Conversion* project in a five-subproject Cluster on *CO₂ management “Development of a highly Efficient and Practical Carbon Management System for Improving Qatar’s Sustainability: A holistic approach”* (My subproject fund is **US\$1,200,000** out of the total grant of **US\$5,200,000**)
- Obtained **NPRP** funding as Lead PI (2020-2023), “*An integrated process for the simultaneous desalination of reject brine and CO₂ mineralization*” (**US\$ 599,950**)
- Obtained funding from **ADNOC Refining Research Centre** as a Co-Investigator (2019-2022), Pilot Plant Project “*Design and Evaluation of a Pilot Plant for CO₂ Capture through Reactions with High Salinity Water (Phase II)*” (**US\$ 696,028**).
- Obtained **NPRP** funding as Lead PI (2017-2020), “*Development and Evaluation of Nanoparticles-based Biocatalysts for the Treatment of GTL Process Water*” (**US\$ 599,892**)
- Obtained **NPRP** funding as PI (2017-2020), “*Fluidized Graphene Oxide-Multifunctional Nano-Adsorbents Reactor as Pretreatment Process Prior Membrane Filtration Unit for Water Treatment and Wastewater Reclamation*” (**US\$ 598,675**)
- Obtained funding from Abu Dhabi Oil Refining Company (**TAKREER**) as a Principal Investigator (2013-2016), “*CO₂ Capture through reactions with high salinity water*” (**US\$ 605,300**).
- Obtained funding from **NRF** as a Co-Investigator (2013-2015) “*Effect of Fluidization Hydrodynamics on the Carbonation of Industrial Alkaline Solid Wastes*” (**US\$ 87,000**).

- Obtained funding from **NRF** as a Co-Investigator (2012-2013) “*Production of Biofuels Using Date Palm Cellulosic Waste*” (US\$ **108,152**).
- Obtained funding from **JCCP** of Japan as a Principal Investigator (2010-2013) “*Design and Evaluation of a Pilot Plant for the Treatment of Refinery Wastewater*”. The project is co-sponsored by the UAE petroleum industry (US\$ **2,649,500**). A pilot plant was designed, fabricated, commissioned, and tested under real field conditions.
- Obtained funding from **NRF** as a Principal Investigator (2010-2012) “*Biodegradation of BTEX in a Novel Spouted Bed Bioreactor SBBR*” (US\$ **135,870**).
- Obtained funding from **NRF** as a Co-Investigator (2010-2012) “*Sequestration of CO₂ through Reactions with Iron Slag*” (US\$ **135,870**).
- Obtained funding from **JCCP** of Japan as a Principal Investigator (2010-2013), “*Development, Design and Evaluation of Refinery WW Treatment Processes*”. The project is co-sponsored by the UAE petroleum industry (US\$ **1,342,120**). A novel process has been developed and a patent application has been registered.

h. Fellowships, Prizes, and Awards

- Selected by Stanford University to be among the **World’s Top 2%** Scientists for the past two years.
- Received the College of Engineering **Best Performance Award** for excellence in scholarship, UAE University, May 2015.
- Received **Best Professor Award**, Asian Education Leadership Awards, September 2014
- Received **Excellent Presentation Award** at the *5th International Conference on Chemical Engineering and Applications* (CCEA 2014), Taipei, Taiwan, August 2014.
- Received **Best Professor in Chemical Engineering Award**, Asian Education Leadership Awards, September 2013.
- Received the College of Engineering **Best Performance Award** for excellence in scholarship, UAE University, June 2008.
- Received **Excellent Presentation Award** at the *2nd International Conference on Chemical Engineering and Applications* (CCEA 2011), Maldives, Nov. 2011.
- Received the **Best Externally Funded Research Project Award** (College of Engineering), 9th UAEU Research Conference, April 2008.
- Received, as a Co-Investigator, the **Best Externally Funded Research Project Award** (College of Engineering), 8th UAEU Research Conference, April 2007.
- Received, as a Co-Investigator, the **Best Interdisciplinary Research Project Award** (College of Engineering), 6th Annual UAE University Conference, April 2005.
- Received the **Merit Award** in June 2007, UAE University.

i. Editorships, Editorial Boards, and Reviewing Activities for Journals and Other Learned Publications.

- Guest Editor, Special Issue: Sustainability and Circular Economy: Frontier Research on Water Treatment and Purification, *Sustainability* (2021)
- Guest Editor, Special Issue: Gas Capture Processes, *Processes* (2020)
- Guest Editor, Special Issue: GPS 2016, *Journal of Natural Gas Science and Engineering* (2018)

- Associate Editor, the *American Journal of Engineering and Applied Sciences*
- Member of the Editorial Board of the *International Journal of Chemical Engineering and Applications*
- Serving or have served as a reviewer for more than **30** international journals,
- Served as a reviewer of several grant applications for different institutions
- Served as an examiner of several M.Sc. and PhD theses

j. Other.

- Co-Chaired the organizing committee for “Future UAE Energy and Environment Leaders Competition” (FUEL 2013 and FUEL 2014)
- Organized a Specialty Symposium on “Carbon Management” as part of the UAEU annual research conference, April 2009.
- Established the “Biotechnology and Water Purification Research Laboratory” and acquired about 900 k \$US worth of equipment, in addition to a new 1.2 Million \$US Wastewater Treatment Pilot Plant.
- Participated as a team member in establishing the “Membrane Separation Research Laboratory” with about 900 k \$US worth of equipment.

3. Teaching, Mentoring, and Advising

a. Courses taught in the last five years.

Course code	Course title	Course type
CHME 433	Water Desalination	Undergraduate
CHME 508	Chemical Process Control	Undergraduate
CHME 585	Graduation Project	Undergraduate
CHME 590	Graduation Project II	Undergraduate
CHME 712	Advanced Reaction Engineering	Graduate
CHME 724	Advanced Process Dynamics and Control	Graduate
CHME 740	Independent Research in Chemical Engineering	Graduate
GENG 602	Environmental Impact Assessment	Graduate
PTSE 700	Graduate Seminar	Graduate
WATR 619	Thermal Desalination	Graduate

b. Course or Curriculum Development.

- Developed several undergraduate and graduate courses, including two core chemical engineering courses, namely *Reactor Design* and *Chemical Process Control* as part of the Innovation in Teaching Project. Also, developed *Water Desalination* and *Process Control*.

c. Contributions to Students’ Activities and Programs

I participated in numerous students’ activities that contributed to strengthening ties between the University and the community. These included important events such as the industrially sponsored *Environmental Design Contest (EDC)*; the *Summer Undergraduate Research Experience (SURE) Program*; the *Chancellor Undergraduate Research Award (CURA)*; and *Future UAE Energy and Environmental Leaders (FUE²L) Competition*. I

played key roles in these activities in either initiating the event or participating as a member of the organizing committee.

d. Teaching Awards and Other Special Recognition

- Supervised several teams of students who won local and international awards:
 - i. *Excellent Student Presentation Award, the 6th International Conference on Chemical Engineering and Applications (CCEA 2015), Hong Kong, August 2015.*
 - ii. *Best Student Paper Award* at the “West-Meets-East: Exploring Sustainable development and Innovation conference, Dubai, February 2014.
 - iii. *First place award, Local AIChE Chapter’s 2nd Chemical Engineering Competition, PI, Abu Dhabi, UAE, May 2010*
 - iv. *Best student paper Award, UAEU Research Conference, Al-Ain, April 2006*
 - v. *First place award, Innovation and Design Competition, SQU, Oman, April 2004*
 - vi. *First place award, UAEU Environmental Design Competition, UAE, March 2002*
 - vii. *Best written report, UAEU Environmental Design Competition, UAE, March 2002*
 - viii. *Most innovative design, UAEU Environmental Design Competition, UAE, April 2000*
 - ix. *Best written report, UAEU Environmental Design Competition, UAE, April 2000*
 - x. *Best bench-scale award, WERC Environmental Design Competition, Las Cruces, USA, April 1999.*

e. Student Advising

- I supervised the graduation projects for **13** groups of senior chemical engineering students.
- I have supervised the M.Sc. and PhD theses of several students. The following are the topics of the most recently completed theses:
 1. Mohamed H. Ibrahim, “*Carbon capture through reaction with steel-making waste*”
 2. Dina A. Moussa, “*A novel system for Electrochemical treatment of produced water*”
 3. Shaima Hamdan, “*Removal of Chromium (VI) from Groundwater by Electrocoagulation*”
 4. Riham Surkatti, “*Evaluation of the Biodegradation of Cresols by P. putida*”,
 5. Ayat El Telib, “*Modeling the Biodegradation of BTEX in a Spouted Bed Bioreactor*”,
 6. Ameerah Fares, “*Evaluation of a Combined Approach for the Management of Desalination Reject Brine and Capture of CO₂*”
 7. Shereen Wajeih, “*Assessment of Electrocoagulation for the Treatment of Carbide Slurry*”
 8. Suhaib Hameedi, “*CO₂ capture through reactions with steel-making dust*”
 9. Taghreed Al-Khalid “*Biodegradation of Chlorophenols in a SBBR: Modeling and Experimentation*”,
 10. Miada Osman, “*Evaluation of Electrocoagulation for the Removal of Chloride and Ammonium Ions from the Effluent of Reject Brine Pretreated by Solvay Process*”

4. Service

a. Professional

- i. *Offices and committee memberships held in professional organizations.*

- Senior membership of the Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEEES)
- Member of the Chemical Institute of Canada (MCIC).
- Member of the Canadian Society for Chemical Engineering.
- Member of the American Institute of Chemical Engineers.

b. Campus Activities

i. Department, College and University (UAE University)

Served as a chair or a member of the following Department, College and University committees:

- Member of the University Research Council
- Chair of the College Safety Committee
- Member of the College Scheduling Committee
- Member of the College Course Development Committee
- Member of the College Alumni Committee
- Member of the College Examination Committee
- Member of the Environmental Design Contest (EDC) organizing Committee
- Member of the College Peer Evaluation of Teaching Committee
- Member of the Steering Committee on Energy and Environment Center
- Member of the College Strategic planning Committee
- Chair of the Department Space and Safety Committee
- Chair of the Department Internet-computer Committee
- Chair of the Department Research Committee
- Member of the Department Scheduling Committee
- Member of the Department Curriculum Committee
- Chair of the Department Outcome Assessment Committee (ABET)
- Member of the Department Engineering Day Committee
- Co-chair of the FUE²L competition

ii. GPC, College and University (Qatar University)

- Chair of the GPC strategic planning committee
- Chair of the GPC Safety Committee
- Member of the GPC Promotion Committee
- Member of the Organizing and Technical Committees of GPS 2016
- Member of the Coordinating committee of the Environmental Engineering Graduate Program