

Curriculum Vita

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Education & Qualifications

Professional Engineer 1999	<i>Government of New Mexico</i>	<i>Santa Fe, USA</i>
Ph.D. Chemical Engineering 1995 – 1998	<i>New Mexico State University</i>	<i>Las Cruces, USA</i>
M.Sc. Chemical Engineering 1989 – 1992	<i>University of Jordan</i>	<i>Amman, Jordan</i>
B.Sc. Chemical Engineering 1984 – 1989	<i>Jordan University of Science & Technology</i>	<i>Irbid, Jordan</i>

Professional experience

Chairman, Chemical Engineering Department 9/2019 – present	<i>University of Jordan</i>	<i>Amman, Jordan</i>
Professor of Chemical Engineering 9/2017 - present	<i>University of Jordan</i>	<i>Amman, Jordan</i>
Professor of Chemical Engineering 4/2012 – 9/2017	<i>King Fahd University of Petroleum & Minerals</i>	<i>Dhahran, Saudi Arabia</i>
Associate Professor of Chemical Engineering 9/2007 – 4/2012	<i>King Fahd University of Petroleum & Minerals</i>	<i>Dhahran, Saudi Arabia</i>
Associate Professor of Chemical Engineering 8/2006 – 9/2007	<i>AL-Hussein Bin Talal University</i>	<i>Ma'an, Jordan</i>
Assistant to the President for Planning & Development Chairman of Central Tendering Committee 8/2005 – 9/2010	<i>Mutah University</i>	<i>Al-Karak, Jordan</i>
Associate Professor of Chemical Engineering 8/2004 – 8/2006	<i>Mutah University</i>	<i>Al-Karak, Jordan</i>
Chairman, Chemical Engineering Department 3/2003 – 8/2004	<i>Mutah University</i>	<i>Al-Karak, Jordan</i>
Director, HRH Prince Faisal Center for Dead Sea Studies 2/2000 – 2/2005	<i>Mutah University</i>	<i>Al-Karak, Jordan</i>
Assistant Professor of Chemical Engineering 8/1998 – 2/2000	<i>Waste-management Education & Research Consortium</i>	<i>Las Cruces, USA</i>
Postdoctoral Researcher 1995 – 6/1998	<i>National Physical Laboratory – DoE, USA</i>	<i>Las Cruces, USA</i>

Patents

	PAT. NO.	Title
1	US 16/230753	Method Of Sweetening Hydrocarbon Gas From Hydrogen Sulfide
2	US 10,883,038	Method for improving production of a well bore
3	US 10,479,919	Method for drilling a hydrogen sulfide-containing formation
4	US 10,501,676	Method for drilling a wellbore with a weighted hydrogen sulfide scavenger fluid
5	US 10,301,524	Method of drilling a subterranean geological formation with a drilling fluid comprising copper nitrate
6	US 10,294,407	Barite filter cake removing composition and method
7	US 14/072,768	Asphalt concrete with modified oil fly ash
8	US 9,757,709	Method for forming an acid-treated fly ash activated carbon
9	US 9,737,872	Modified activated carbon preparation and methods thereof
10	US 9,649,619	Sodium-calcium-aluminosilicate column for adsorbing CO ₂
11	US 9,616,407	Isothermal CO ₂ adsorption column
12	US 9,480,969	Synthesis of CO ₂ -one adsorbent for CO ₂ removal
13	US 9,193,608	Removal of heavy metals from aqueous solutions using vanadium-doped titanium Dioxide nanoparticles
14	US 9,145,492	Method to produce ultra-high molecular weight polyethylene
15	US 9,102,542	Method of producing activated carbon from fuel oil
16	US 8,604,115	Ethylene/propylene copolymer nanocomposite
17	US 8,596,047	Vehicle electrocatalyzer for recycling carbon dioxide to fuel hydrocarbons
18	US 8,545,781	Carbon dioxide adsorbent composition
19	US 8,541,520	Method of making high-density polyethylene with titania-iron nanofillers
20	US 6,225,256	Activated carbon feedstock

Book Chapter

21. Synthesis of Activated Carbon from spent Lubricating oil, Combined and Hybrid Adsorbents, *NATO Security through Science Series*, Springer Netherlands, 2006. 195-200.
 22. Adsorption of zinc and cadmium using activated carbo-aluminosilicate material from oil shale, Combined and Hybrid Adsorbents, *NATO Security through Science Series*, Springer Netherlands, 2006. 249-254.
 23. Synthesis of a new Cu-aluminosilicate catalyst for CO₂ capture and conversion to hydrocarbons *Advances in Gas Processing, Volume 4, Elsevier, 2014, 49-58.*
 24. Adsorption of H₂S from Natural Gas using treated Oil Fly Ash, *Advances in Gas Processing, Volume 4, Elsevier, 2014, 273-283.*
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Publications

25. M. Z. U. Rehman, Z. Aslam, R. A. Shawabkeh, I. A. Hussein, and N. Mahmood, "Concurrent adsorption of cationic and anionic dyes from environmental water on amine functionalized carbon," *Water Science and Technology*, vol. 81, pp. 466-478, **2020**.
 26. A. Mohamed, S. Elkatatny, M. Mahmoud, R. Shawabkeh, and A. Al-Majed, "Evaluating the effect of using micronised barite on the properties of water-based drilling fluids," *International Journal of Oil, Gas and Coal Technology*, vol. 25, pp. 1-18, **2020**.
 27. M. Mahmoud, A. Hamza, I. A. Hussein, M. Eliebid, M. S. Kamal, M. Abouelresh, R. Shawabkeh, and M. J. Al-Marri, "Carbon dioxide EGR and sequestration in mature and immature shale: Adsorption study," *Journal of Petroleum Science and Engineering*, vol. 188, p. 106923, **2020**.
 28. A. Hamza, I. A. Hussein, M. J. Al-Marri, M. Mahmoud, R. Shawabkeh, and S. Aparicio, "CO₂ enhanced gas recovery and sequestration in depleted gas reservoirs: A review," *Journal of Petroleum Science and Engineering*, p. 107685, **2020**.
 29. R. Ali, Z. Aslam, R. A. Shawabkeh, A. Asghar, and I. A. Hussein, "BET, FTIR, and RAMAN characterizations of activated carbon from waste oil fly ash," *Turkish Journal of Chemistry*, vol. 44, pp. 279-295, **2020**.
 30. G. Carchini, I. Hussein, M. J. Al-Marri, R. Shawabkeh, M. Mahmoud, and S. Aparicio, "A theoretical study of gas adsorption on α -quartz (0 0 1) for CO₂ enhanced natural gas recovery," *Applied Surface Science*, vol. 525, p. 146472, **2020**.
 31. S Elkatatny, S Basfer, R Shawabkeh, M Bahgat, M Mahmoud, Assessment of Using Copper Nitrate for Scavenging Hydrogen Sulfide While Drilling Sour Horizontal Wells, *Journal of Energy Resources Technology* **2019**, 141 (12), 122904
 32. G. Carchini, I. Hussein, M. J. Al-Marri, R. Shawabkeh, M. Mahmoud, and S. Aparicio, "A theoretical study of gas adsorption on calcite for CO₂ enhanced natural gas recovery," *Applied Surface Science*, vol. 504, p. 144575, **2020**.
 33. M Mahmoud, I Hussein, G Carchini, R Shawabkeh, M Eliebid, MJ Al-Marri, Effect of Rock Mineralogy on Hot-CO₂ Injection for Enhanced Gas Recovery, *Journal of Natural Gas Science and Engineering*, **2019**, 103030
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34. W Ahmad, A Al-Matar, R Shawabkeh, Z Aslam, IA Malik, HM Irshad, Cu-K/Al₂O₃ based catalysts for conversion of carbon dioxide to methane and carbon monoxide, *Chemical Engineering Communications*, **2019**, 1-15
35. Z Aslam, IA Hussein, RA Shawabkeh, MA Parvez, W Ahmad, Ihsanullah, Adsorption kinetics and modeling of H₂S by treated waste oil fly ash, *Journal of the Air & Waste Management Association*, **2019**, 69 (2), 246-257
36. N. Faqir, R. Shawabkeh, M. Al-Harhi, H. Wahhab, Fabrication of Geopolymers from Untreated Kaolin Clay for Construction Purposes, *Geotechnical and Geological Engineering*, **2018**, 37 (1), 129-137.
37. M. Eliebid, M. Mahmoud, I. Hussein, S. Elkatatny, R. Shawabkeh, A. Sultan, M. J. Al-Marri, Impact of Surfactant on the Retention of CO₂ and Methane in Carbonate Reservoirs, *Energy Fuels*, **2018**, 32 (4), pp 5355–5363.
38. M. Eliebid, M. Mahmoud, R. Shawabkeh, S. Elkatatny, I. Hussein, Effect of CO₂ adsorption on enhanced natural gas recovery and sequestration in carbonate reservoirs, *Journal of Natural Gas Science and Engineering*, **2018**, 55, 575-584.
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40. M. Liadi, B. Tawabini, R. Shawabkeh, N. Jarrah, A. Shaibania, M. Makkawi, Treating MTBE-Contaminated Water Using Sewage Sludge-Derived Activated Carbon, *Environmental Science & Pollution Research*, **2018** 2529397–29407.
41. M. Mahmoud, B. Ba Geri, K. Abdelgawad, M. Kamal, I. Hussein, S. Elkatatny, R. Shawabkeh, Evaluation of the Reaction Kinetics of Diethylenetriaminepentaacetic Acid Chelating Agent and a Converter with Barium Sulfate (Barite) Using a Rotating Disk Apparatus, *Energy Fuels*, **2018**, 32 (9), 9813–9821.
42. W. Ahmad, M.N. Younis, R. Shawabkeh, S. Ahmed, Synthesis of lanthanide series (La, Ce, Pr, Eu & Gd) promoted Ni/γ-Al₂O₃ catalysts for methanation of CO₂ at low temperature under atmospheric pressure, *Catalysis Communications*, 100 (2017) 121-126.
43. A.G. Rana, W. Ahmad, A. Al-Matar, R. Shawabkeh, Z. Aslam, Synthesis and characterization of Cu–Zn/TiO₂ for the photocatalytic conversion of CO₂ to methane, *Environmental technology*, 38 (2017) 1085-1092.
44. M. Mahmoud, A. Abdurraheem, S. Al-Mutairi, S. Elkatatny, R. Shawabkeh, Single stage filter cake removal of barite weighted water based drilling fluid, *Journal of Petroleum Science and Engineering*, 149 (2017) 476-484.
45. R. Khalid, Z. Aslam, A. Abbas, W. Ahmad, N. Ramzan, R. Shawabkeh, Adsorptive potential of Acacia Nilotica based adsorbent for Chromium (VI) from an aqueous phase, *Chinese Journal of Chemical Engineering*, (2017).
46. B. GERI, B. SALEM, M.A. Mahmoud, R.A. Shawabkeh, A. Abdurraheem, Evaluation of Barium Sulfate (Barite) Solubility Using Different Chelating Agents at a High Temperature, *Journal of Petroleum Science and Technology*, 7 (2017) 42-56.
47. N.M. Faqir, S. Elkatatny, M. Mahmoud, R. Shawabkeh, Fabrication of kaolin-based cement plug for CO₂ storage wells, *Applied Clay Science*, 141 (2017) 81-87.
48. M. Eliebid, M. Mahmoud, R. Shawabkeh, S. Elkatatny, I.A. Hussein, Effect of CO₂ adsorption on enhanced natural gas recovery and sequestration in carbonate reservoirs, *Journal of Natural Gas Science and Engineering*, (2017).
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50. Z. Aslam, M.S. Kamal, W. Ahmad, A. Abbas, R.A. Shawabkeh, Development of novel cross-linked chitosan for the removal of anionic Congo red dye, *Journal of Molecular Liquids*, 244(2017) 211-218.
51. Waqar Ahmad, Umer Mehmood, Amir Al-Ahmed, Fahad A. Al-Sulaiman, M. Zaheer Aslam, Muhammad Shahzad Kamal, R.A. Shawabkeh, Synthesis of zinc oxide/titanium dioxide (ZnO/TiO₂) nanocomposites by wet impregnation method and preparation of ZnO/TiO₂ paste using poly(vinylpyrrolidone) for efficient dye-sensitized solar cells, *Electrochimica Acta*, 222, **2016**, 473-480
52. Ba Geri, B.S., Mahmoud, M.A., **Shawabkeh, R.A.**, and Abdurraheem, A. **2016**. A New Formulation for Single Stage Filter Cake Removal of Barite Weighted Water Base Drilling Fluid. *Journal of Petroleum Science and Engineering*, Accepted.
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55. Badr Geri, Mohamed Mahmoud, **Reyad Shawabkeh**, Abdulazeez Abdurraheem, Evaluation of Barium Sulfate (Barite) Solubility Using Different Chelating Agents – Different Bases - at High Temperature, *Journal of Petroleum Science and Technology*, accepted.
56. Mohammed Saad, Mohammed Al-Marri, Ibnelwaleed A. Hussein, Ali Yaumi, *Reyad Shawabkeh, An Experimental and Kinetic Study of the Sorption of Carbon Dioxide onto Amine-treated Oil Fly Ash, *Journal of Chemistry*, 2016, 2016, 1-11.
57. Qusay Bkour, Naim Faqir, ***Reyad Shawabkeh**, Synthesis of a Ca/Na-aluminosilicate from kaolin and limestone and its use for adsorption of CO₂, *Journal of Environmental Chemical Engineering*, **2016**, 4, 973–983.

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58. Reyad A. Shawabkeh, Zaheer Aslam, Ibelwaleed A. Hussien, Thermochemical Treatment of Fly Ash for Synthesis of Mesoporous Activated Carbon, *Journal of Thermal Analysis and Calorimetry*, **2015**, 122(3), 1191-1201.
59. M. Mirghani, U. A. Al-Mubaiyedh, M.S. Nasser, *R. Shawabkeh, Experimental study and modeling of photocatalytic reduction of Pb²⁺ by WO₃/TiO₂ nanoparticles, *Separation and Purification Technology*, **2015**, 141, 285-293.
60. Zaheer Aslam, Reyad Shawabkeh, Ibelwaleed Hussein, Nadhir Al-Baghli, MladenEic, Synthesis of Activated Carbon from Oil Fly Ash for Removal of H₂S from Gas Stream, *Applied Surface Science*, **2015**, 327, 107-115..
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62. M Anwar Parvez, HI Al-Abdul Wahhab, **RA Shawabkeh**, IA Hussein, Asphalt modification using acid treated waste oil fly ash, *Construction and Building Materials*, **2014**, 70, 201-209
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67. **Shawabkeh, R.**, Rihan, R., AL-Baker, N., Effect of an alkyl amine-based corrosion inhibitor for 1018 carbon steel pipeline in sea water, *Anti-corrosion Methods and Materials*, **2013**, 60 (5) 259 - 270
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72. Khan, M., Al-Juhani, A., Ul-Hamid, A., **Shawabkeh, R.**, Hussein, I., Effect of Chemical Modification of Oil Fly Ash and compatibilization on the Rheological and Morphological Properties of Low-Density Polyethylene Composites, *Journal of Applied Polymer Science*, **2011**, 122, 2486-2496.
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75. **Shawabkeh, R.**, Hydrometallurgical Extraction of Zinc from Jordanian Electric Arc Furnace Dust, *Hydrometallurgy*, **2010**, 104 (1), 61-65.
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80. Al-Khushman, O. and **Shawabkah, R.**, Metal distribution in urban soil around steel industry beside Queen Alia Airport, Jordan, *Environmental Geochemistry and Health*, **2009**, 31 (6), pp. 717-726.
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82. **Shawabkeh, R.** and Al-Harashsheh, A., H₂S removal from sour liquefied petroleum gas using Jordanian oil shale ash, *Oil Shale Journal*, 2007, 24 (2) 109
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92. Abu Na'meh, E., **Shawabkeh, R.,** and Azzam Ali, High-Performance Liquid Chromatographic Determination of Simvastatin in Medical Drugs, *Journal of Analytical Chemistry*, 61 (1) 2006
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96. **Shawabkeh, R.** and Tutunji, M., Experimental study and modeling of basic dye sorption by diatomaceous clay, *Invented publication in Experimental Earth Journal*, 1 (5), 2003.
97. **Shawabkeh, R.,** Synthesis and characterization of activated carbo-aluminosilicate material from oil shale, *Microporous and Mesoporous Materials*, 75, 2004.
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100. **Shawabkeh, R.,** Al-Harahsheh, A., and Al-Otoom, A., Copper and zinc sorption by treated oil shale ash, *Separation and Purification Technology*, 40(3), 2004.
101. **Shawabkeh, R.** and Mahasneh, B., Encapsulation of lead ions in sand-cement-clay mixture, *Journal of Geotechnical Engineering*, 9(c), 2004.
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Conferences & Workshops

107. M. Nasser, A. Benamor, S. Yousefi, and R. Shawabkeh, "Enhancement of Flocculation and Dewaterability of MBR Activated Sludge Using a Hybrid System," in 2020 Spring Meeting & 16th Global Congress on Process Safety, 2020.
108. S. Elkatatny, S. Basfer, M. Mahmoud, R. Shawabkeh, M. Bahgat, New Hydrogen Sulfide Scavenger for Drilling Sour Horizontal and Multilateral Reservoirs, SPE Kingdom of Saudi Arabia Annual Technical Symposium and Exhibition, 23-26 April, Dammam, Saudi Arabia, 2018.
109. M. Eliebid, M. Mahmoud, D. Al-Shehri, S. Elkatatny, M. Abouelresh, R. Shawabkeh, Temperature Impact on Adsorption Contribution to Sequestration of CO₂ in Immature Shale Formations in Saudi Arabia, SPE Kingdom of Saudi Arabia Annual Technical Symposium and Exhibition, 23-26 April, Dammam, Saudi Arabia, 2018.
110. Shawabkeh, Effect of Activation Condition for Production of Activated Carbon from Fly Ash, AIChE Annual Meeting, Salt Lake City, UT November 8, 2015.
111. Shawabkeh, Electroreduction of Carbon Dioxide to Hydrocarbons Using Copper Nanoparticles Electrode, AIChE Spring Meeting, Austin, TX, November 8, 2015
112. R. Shawabkeh, Chemical and Thermal Treatment of Fly Ash for Synthesis of Mesoporous Activated Carbon, North American Thermal Analysis Society (NATAS), 2014, Santa Fe, USA; September 14-17, 2014

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113. Reyad Shawabkeh, Waqar Ahmad, Ibelwaleed Hussien "Synthesis of Ca-Naaluminosilicates from kaolinite for CO₂ capture and sequestration" Gas Processing Center's fourth International Symposium, Qatar, October 26-27, 2014
 114. Zahir Aslam, Reyad A. Shawabkeh, Ibelwaleed Hussien, Adsorption of CO₂ and H₂S from Natural Gas By Activated Fly Ash, AIChE 2014 Spring Meeting and 10th Global Congress on Process Safety , New Orleans, USA, from March 14 to 15, 2014.
 115. Shawabkeh, R. Sorption of Hydrogen Sulfide From Natural Gas Using Physicochemical Treated Fly Ash, AIChE 2013 National Meeting, San Francisco, CA, USA; November 3-8, 2013.
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 117. Rihan, R., Shawabkeh, R., Al-Bakr, N., Kinetic study of the effect of a mixture of two corrosion inhibitors in reducing the corrosion rate of 1018 carbon steel petroleum pipelines in sea water, NACE - International Corrosion Conference, Salt Lake City, Utah, USA; March 11-15, 2012
 118. Shawabkeh, R., Mirgani, M., Synthesis of V-TiO₂ nanoparticles and Application for Reduction of Cd²⁺ from Aqueous solution, The Sixth International Conference on Environmental Science and Technology, Houston, Texas - USA; June 25-29, 2012
 119. Shawabkeh, R.A., Yaumi, A., Hussein, I., Chemisorption of carbon dioxide on chemically treated fly ash surface: Experimental and kinetics modeling, AIChE Annual Meeting, Conference Proceedings , Pittsburgh, USA, 28/10-4/11 2012.
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 121. R. A. Shawabkeh, M. Gaily, T. Lau, N. Faqir, M. Al-Harithi, M. Ba-Shammakh, Synthesis and characterization of Fe-doped nanotitania using sol-gel technique and application for Zn²⁺ reduction from aqueous solution, AES-ATEMA International Conference Series - Advances and Trends in Engineering Materials and their Applications, Montreal, Canada; August 01-05, 2011
 122. O. Rihan, N. I. Al-Bakr, R. A. Shawabkeh, Studying the effect of two corrosion inhibitors in reducing the corrosion rate of 1018 carbon steel petroleum pipelines in sea water, European Corrosion Congress 2010 - EUROCORR 2010, Moscow, Russia; 01/2010
 123. Experimental and Modeling of CO₂ Sorption by Oil-Shale Ash, 3rd International IUPAC Conference on Green Chemistry, Ottawa, Canada, 15-19, August, 2010
 124. Photocatalytic degradation of phenol from aqueous solution by Fe/Zn-doped titanium dioxide, International Green energy Conference, Toronto (Oshawa) -Canada, June 24-29, 2006
 125. Synthesis of Activated Carbon from spent Lubricating oil, NATO Advanced Research Workshop, Kiev-Ukraine, September 15-18, 2005.
 126. Adsorption of zinc and cadmium using activated carbo-aluminosilicate material from oil shale, NATO Advanced Research Workshop, Kiev-Ukraine, September 15-18, 2005.
 127. Detection of Clarithromycin at the Hanging Mercury Drop Electrode Surface, International Engineering conference- Mutah 2004.
 128. Encapsulation of lead by sand-cement-clay composite material, International Engineering conference- Mutah 2004.
 129. Use of Pecan Shells in the Chemical Industry, R. Shawabkeh, XXXII Annual Western Pecan Conference, Las Cruces, New Mexico, March 9-11, 1998.
 130. Activated Carbon (PS276a) Manufactured by Novel Techniques, D.A. Rockstraw, R. Shawabkeh, R. Bhada, Waste-management Education and Research Consortium/Hazardous Substance Research Center Joint Conference on the Environment, Albuquerque, NM, April 22-24, 1997.
 131. Activated Carbon Manufactured by Novel Techniques, R. Shawabkeh, D. Rockstraw, and R. Bhada, American Institute of Chemical Spring Meeting, Houston, TX, March 9-13, 1997.
 132. Synthesis and Characterization of Activated Carbon Manufactured from Pecan Shells for Application to Water Remediation, D.A. Rockstraw, and R. Shawabkeh, Center for Applied Energy Research, University of Kentucky, Lexington, KY, April 23, 1998.
 133. Chemical Activation of Pecan Shells for Manufacturing of Activated Carbon, R. Shawabkeh, Graduate Research Symposium, NMSU, April 1997.
 134. Use of Lignocellulosic-Based Carbon Modified for Separation of Ionic Species from Aqueous Solution, D. Rockstraw, R. Shawabkeh, and R. Bhada, TechnoVentions98 Conference, Orlando, December 10, 1998.
 135. Feasibility of Using Diatomite and Mn-Diatomite for Remediation of Lead from Water, R. Shawabkeh, Y. Diqqis, and M. Tutunju, Waste-management Education and Research Consortium Conference on the Environment, Albuquerque, NM, April 26-29, 1999.
 136. Simulation of Separation Processes, Jordan Engineering Assignment Conference I, Amman, Jordan, August 2-5, 1992.
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Funded Projects

1. Co-I: Synthesis of M-doped nanozeolite and application for CO₂ adsorption from natural gas, Deanship of Academic Research - The University of Jordan, **JD 20,000 (\$28,190)**
2. P.I: Catalytic conversion of H₂S from natural gas to zero-valent sulfur, KFUPM, **SAR 266,600 (\$71,081)** April 1, 2016 – Sept. 1, 2017.
3. P-I: Conversion of carbon dioxide to formic acid, NSTIP-KACST, **SAR 1,943,120 (\$518,082)** Sept. 1, 2014 – Sept 1, 2016.
4. Co-I: Adsorption of Carbon Dioxide Gas by Chemically Treated limestone, Deanship of Scientific Research, KFUPM. **SAR 285,400 (\$76,094)** Sept. 1, 2012 – Sept. 1, 2014.
5. Co-I: Fabrication of Mineral Polymeric Materials from Local Saudi Mineral Resources for Construction Purposes using Mineral Polymerization Technique, NSTIP-KACST, **SAR 1,353,100 (\$360,643)**, September 1, 2012- September 1, 2014
7. Co-I: Destabilization of Oil-Water Emulsions in Oilfield Produced Water to Enhance Separation in Dissolved Air Flotation, Deanship of Scientific Research, KFUPM. **SAR 305,470 (\$ 81,445)** Sept. 1, 2013-Sept. 1, 2015.
8. PI: Production of Activated Carbon from Waste Fly Ash and Application for Selective Removal of hydrogen sulfide from Natural Gas, NSTIP-KACST, **SAR 1,965,400 (\$524,220)** Sept. 1, 2012-Sept.1, 2014.
9. Co-I: Treatment of waste oil fly ash for improvement of Saudi asphalt binder and asphalt concrete performance. **King Abdul-Aziz City for Science and Technology SAR 1,851,564 (\$495,309)**, Sept 1, 2010-Sept.1, 2012.
10. PI: Design and fabrication of nanocomposite-based electrode for electrocatalytic conversion of carbon dioxide to produce hydrocarbons. First National Science & Technology Plan, **Center for Refining & Petrochemicals, SAR 999,400 (\$266,464)**, Sept 1, 2009-Sept.1, 2011.
11. Co-I: The development of leak and contamination sensors for water pipeline network, Co-PI with Dr. Rashad Mansour (collaboration between **King Fahd University of Petroleum & Minerals** (KFUPM) and **Massachusetts Institute of Technology** (MIT)).
12. PI: Synthesis of titania nanofiber and its application for oxidation/reduction of solutes from aqueous solution. **King Abdul-Aziz City for Science and Technology, SAR 1,475,000 (\$393,270)** Sept. 1, 2008-Jan.1, 2011.
13. PI: Adsorption of anthracene, naphthalene and 2-chlorophenol by activated carbon from palm-date pits. **Deanship of Scientific Research- KFUPM, SAR 72,000 (\$19,200)** Jan 1, 2008-June 1, 2010.
14. Co-I: Design of adsorption-refrigeration cycles, Deanship of Scientific Research-Mutah University, **JD 8000 (\$12,000)** , 2004-2006.
15. PI: Sorption of Toxic gases by slurry of oil shale ash, Japan International Cooperation Agency-Jordan, **JD 3,000 (\$ 5,000)** , 2002-2005.
16. PI: Synthesis of engineered zeolite form oil shale ash and application for removal of metal ions from aqueous solutions. Higher Council for Science and Technology-Royal Scientific Research, **JD 17,000 (\$24,500)**, 2002-2004.
17. PI: Feasibility of sand-cement-clay mixture for encapsulation of metal ions and radioactive isotopes from sludge. Deanship of Scientific Research-Mutah University, **JD 2000 (\$3,000)**, 2001-2003.
18. PhD Student: Synthesis of activated carbon from pecan shells. Waste-management Education & Research Consortium-NMSU, USA, **(\$81,000)**, 1996-1998.

I have taught the following courses at Mutah University-Jordan, KFUPM-KSA and University of Jordan-Jordan.

Note. [The number in brackets indicates the no. of times of teaching this course].

Course Work

Graduate Courses:

1. Advanced Chemical Reaction Engineering [5]
2. Adsorption [3]
3. Advanced Heat Transfer Unit Design –IFP [2]
4. Transport Phenomena [2]
5. Mathematical Methods in Chemical Engineering [1]

Undergraduate Courses:

6. Chemical Engineering Plant Design [2]
7. Heterogeneous Chemical Reaction Eng. [7]
8. Chemical Engineering Thermodynamics I [1]
9. Numerical Analysis [6]
10. Unit operation (II) [1]
11. Industrial Analytical Chemistry [1]
12. Automatic Control [2]
13. Labs (Unit operation, Reaction and Control) [2]
14. Communication Skills [1]
15. Homogeneous Chemical Reaction Engineering [9]
16. Plant Design [4]
17. Chemical Process Design [4]
18. Electrochemical Engineering [7]
19. Applied Mathematics for Chemical Eng. [4]
20. Unit Operation (I) [1]
21. Heat Transfer [2]
22. Mass Transfer Operation [4]
23. Principles of Chemical Engineering [1]
24. Optimization of Chemical Engineering [1]
25. Chem. Eng. Thermodynamics II [6]
26. **Integrated design (Project)** [26]
27. Heat Exchanger Design [3]
28. Corrosion [3]

Awards received

- (1) **Recognition of World's Top 2% Scientists by Stanford University, 2020.**
- (2) **Excellence in Research Award, KFUPM, 2017.**
- (3) Recognition of KFUPM Inventors, KSA, April 2013.
- (4) Second place, Environmental Design Contest, United Arab Emirates, May 26-29, 2004.
- (5) First place, Engineering Design Contest, United Arab Emirates, March 22-26, 2002.
- (6) **Grand Prize, The National Excellence in Environmental Engineering, Washington DC, USA, April 16, 1998.**
- (7) BF Goodrich Collegiate Inventors Program recognition of distinguished contribution.
- (8) First place of Top honors: Graduate Research Symposium, Engineering Session Presenters/NMSU, USA, 1997.
- (9) Riotech Environmental Excellence Scholarship, Las Cruces, USA, 1997.

Professional Review Activities

- Associate Editor for Arabian Journal of Science and Engineering
- Peer reviewer for the following journals:
 1. *Separation and Purification Technology Journal*
 2. *Journal of Colloid and Interface Science*
 3. *Water International Journal*
 4. *Journal of Hazardous Materials*
 5. *Biosource Technology Journal*
 6. *Enzyme & Microbial Technology Journal*
 7. *Mutah Journal*
 8. *Microporous & Mesoporous Materials*
 9. *Current Microbiology Journal*
 10. *Process Biochemistry Journal*
 11. *Chemical Engineering Science Journal*
 12. *Drying Technology Journal*

PhD and Master Thesis Supervised & Examined

1. Aban Skhaita, electrochemical conversion of CO₂ to formic acid using rotating cylinder electrode, in progress.
2. Badr Bageri, Filter Cake Removal of Barite Weighted Water Based Mud (WBM) in Horizontal well, Co-advisor, Petroleum Engineering, **King Fahd University of Petroleum & Minerals**, in progress
3. Abdullah Mohammad, Electrocatalytic conversion of CO₂ to formic acid in three-phase reactor, **King Fahd University of Petroleum & Minerals**, in progress
4. Abdullah Musbah, Photocatalytic degradation of Benzene, Toluene and Xylene from water, **King Fahd University of Petroleum & Minerals**, May 2015
5. Adeem Rana, Photocatalytic conversion of CO₂ to hydrocarbons using Cu/Zn-TiO₂ catalyst, **King Fahd University of Petroleum & Minerals**, May 2015
6. Waqar Ahmen, Conversion of CO₂ from mobile phase to methane using Ru/Cu-Al₂O₃ catalyst **King Fahd University of Petroleum & Minerals**, May 2015
7. Qussay Bkour, Adsorption of CO₂ by chemically treated Kaolin, **King Fahd University of Petroleum & Minerals**, May 2014
8. Hafiz Zaheer Aslam, synthesis of selective H₂s and CO₂ adsorbent from oil fly ash. **King Fahd University of Petroleum & Minerals**, December 2014
9. Ali Yawmi, Adsorption of carbon dioxide using chemically treated fly ash, **King Fahd University of Petroleum & Minerals**, May 2012.
10. Musab Gaily, Synthesis of titania nanofiber and its application for oxidation/reduction of solutes from aqueous solution, **King Fahd University of Petroleum & Minerals**, May 2012..
11. Nawaf Baker, Batch and Kinetic study of different corrosion inhibitors for 1018 carbon steel. **King Fahd University of Petroleum & Minerals**, 2009
12. Saeed Al Gamidi, Adsorption of anthracene, naphthalene and 2-chlorophenol by activated carbon from palm-date pits. **King Fahd University of Petroleum & Minerals**, 2010
13. Ibraheem Al-Majali, Biodegradation kinetics of phenol using *Ewingilla americana*, Biology Department, **Mutah University** (Co-advisor with Dr. Khaled Khaifat)
14. Mahmood Zboun, Synthesis of activated carbon from asphalt, Chemical Engineering Department, **Jordan University of Science & Technology** (Co-advisor with Dr. Munther Qandah)
15. Basel Saydah, Synthesis and characterization of photocatalytic material from titanium dioxide and application for reduction of silver and lead ions from aqueous solution, Chemistry & Environment Department, **AL-Balqa Applied University** (Co-advisor with Dr. Eyad Naimah)

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16. Khader Abu Khdeer, Kinetic of adsorption of silver, lead and cadmium ions onto iron-impregnated titanium dioxide, Chemistry & Environment Department, *AL-Balqa Applied University* (Co-advisor with Dr. Eyad Naimah)
 17. Dheay' Rousan, Comparison between biosorbents for the removal of heavy metal ions from aqueous solutions, May 2001, Chemical Engineering Department, *Jordan University of Science & Technology* (Examiner)
 18. Naser Al-Dabaybeh, Evaluation of animal solid waste (Manure) as a new adsorbent, August 2001, Chemical Engineering Department, *Jordan University of Science & Technology* (Examiner)
 19. Basheer Hlihil, Removal of ammonia from industrial wastewater containing hydrogen sulfide using Jordanian zeolites and metal oxides, August 2002, Chemical Engineering Department, *University of Jordan* (Examiner)
 20. Mohammad Laymoun, The effect of different carbon and nitrogen sources on copper uptake by three strains of *Escherichia coli*, August, 2004, Biology Department, *Mutah University* (Examiner)
 21. Khaled Shurafa, Factors affecting the production of B-galactosidase in different strains of enterobacter aerogenes, August 2004, Biology Department, *Mutah University* (Examiner)
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Professional memberships

1. American Institute of Chemical Engineering
 2. American Chemical Society
 3. International Adsorption Society
 4. Jordan Engineering Association
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Reference

1. Professor Taha Al Khamis, Former President of Al-Hussein Bin Talal University, Professor of Chemical Engineering at Mutah University, AL-Karak – Jordan
 2. Professor Ali Al Hrouf, Former President of AL-Hussein Bin Talal University.
 3. Professor David Rockstraw, Chairman of Chemical Engineering Department, New Mexico State University, USA
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