



Name: Dr. Rana Malhas

Rank: Assistant Professor - Petroleum Engineering

Personal Information

Nationality:	Jordanian
AU Joining Date:	26 Jan 2014
E-Mail Address:	r.malhas@au.edu.kw

Professional Information

Education:	<p>Qualifications:</p> <ul style="list-style-type: none"> - 1987-1990 Bachelor of Science (BSc) in Chemistry, University: Yarmouk University- Jordan - 1996 -1999 Master of Science (MSc) in Organic – Analytical Chemistry University: Kuwait University - 2000-2006 Philosophy doctorate (PhD) in Organic – Analytical Chemistry University: Kuwait University
Specialization:	<ul style="list-style-type: none"> • Water and Wastewater Treatment Process • Oil spill remediation. • Waste Management • Nanotechnology and Nanoparticles • Adsorption and kinetic studies • Environmental Protection • Agriculture Waste • Heavy Metals Removal
Current Academic Position:	Assistant Professor - Petroleum Engineering
Current Professional Positions:	NA

<p>Previous Administrative Position Held:</p>	<p>Advisor for Petroleum and Electrical Engineering Petroleum Lab Committee head Aug 2017 – Aug 2022 Petroleum PBL Committee head Aug 2017 – Aug 2022 Acting Head – Petroleum Engineering – Summer 2015</p>
<p>Previous Academic Positions Held:</p>	<p><u>Assistant Professor</u> AU May 2015 - Current Fall 2009 till Fall 2013 In Gulf university for science & technology (GUST), Summer 2011 In Petroleum Training center, teaching and supervising postgraduate for graduate students. Summer 2012 In Petroleum Training center, for teaching and supervising postgraduate for the following's courses: Math courses (Basic Algebra, Intermediate Algebra, College Algebra). General Chemistry, Organic Chemistry courses for Program for new employee. - Fall 2009 till spring 2013-2014 in Kuwait University (KU) teaching Chemistry in Chemistry Department for teaching chemistry courses.</p> <p><u>Lecturer</u> AU Aug 2014 – Aug 2015 2013 Adjunct in Australian University</p> <p><u>Teaching & Research assistant</u> Kuwait University of Science and Technology. 1998-2006</p>
<p>Fellowships And Honors:</p>	<ul style="list-style-type: none"> - Member ship in Kuwait chemical society - Graduate Research Award from Kuwait University 2007 for the research named "Studies on synthesis properties and application of some crown compounds" given by Prof. Abdullah Al-Fhaid, and Graduate Research Award Prof. Faiza Al-Kharafi. - Wining KOC HSSE Award (2018) - Wining senior project award Fall 2019 - wining KOC award CEO HSSE (2018) - Chosen in Maker faire participation 11- 15 February 2020 - Chosen in Australian Day 21 January 2020 - Wining the 13th KNPC HSE Award March 2020 - Wining in Innovation Corner in Maintcon 2022 - Inter College Environmental Public Speaking Competition 2022 - Wining Tamilnadu Engineers Forum, Kuwait (TEF-2022). - Journal of Water Process Engineering reviewer (Elsevier). - Discover water Journal reviewer (Springer).
<p>Teaching Experience:</p>	<ul style="list-style-type: none"> - 2007-2009 In Kuwait Institute for Scientific Research (KISR), as research Associate in research projects in Environmental department in analytical chemistry laboratory. - Fall 2009 till Fall 2013 In Gulf university for science & technology (GUST), - Summer 2011 In Petroleum Training center, teaching and supervising postgraduate for graduate students. - Summer 2012 In Petroleum Training center, for teaching and supervising postgraduate for the following's courses: Math courses (Basic Algebra,

	<p>Intermediate Algebra, College Algebra). General Chemistry, Organic Chemistry courses for Program for new employee.</p> <ul style="list-style-type: none"> - Fall 2009 till spring 2013-2014 in Kuwait University (KU) teaching Chemistry in Chemistry Department for teaching chemistry courses. - 2013 Adjunct in Australian University of Kuwait - 2014 – till now assistant Professor in petroleum engineering at Australian University of Kuwait
Industrial And Technical Experience:	<ul style="list-style-type: none"> - Kuwait Institute for Scientific Research (KISR), as research Associate in research projects in Environmental department
Research Interest:	<ul style="list-style-type: none"> - Environment - water treatment - Nanotechnology - waste management.
Research Grants:	<ul style="list-style-type: none"> - PI of an AU internal funded Research Project titled "Oil polluted water treatment using innovative technique by super magnetic nanoparticles and bio-sorbent waste materials" (KWD 1,000) - Co-I of AU internal funded Research Project titled Green valorization of Petroleum Solid Waste and its conversion into bioenergy through anaerobic digestion technology" (KWD 1500). - Co-I of AU internal funded Research Project titled Fluids Evaluating the Rheological Properties of Synthetic-Based Muds (SOBMs), Well Drilling Fluids with Nanoparticles Using a Taylor-Couette Device in Laminar and Turbulent Flows (KWD 900).
Research and Publications including Journal and Books:	<ol style="list-style-type: none"> 1. Achkar, J. E., Malhas, R., & Alsaba, M. (2024). Innovative Produced Water Management: A Nexus Approach for Sustainable Oil and Gas Industry - A Critical Review. In Day 2 Wed, March 06, 2024 (p. D022S006R005). Presented at the SPE Water Lifecycle Management Conference and Exhibition, Abu Dhabi, UAE: SPE. https://doi.org/10.2118/218994-MS.new 2. Malhas, R., Alamgir, T., Benhusain, A., Alotaibi, N., Alhaddad, N. (2023). Oil content removal from oil water emulsion by super magnetic nanoparticles. <i>Journal of Water Process Engineering</i>, 55, 104246. https://doi.org/10.1016/j.jwpe.2023.104246. 3. Malhas, R., El Achkar, J. H., Misbah, B., & Al Radhwan, S. (2023). Optimizing Oil Removal from Oil-Water Emulsions Using Novel Iron Oxide Magnetic Nanoparticles. <i>Water, Air, & Soil Pollution</i>, 234(9), 564. https://doi.org/10.1007/s11270-023-06590-4. 4. Misbah, B., Sedaghat, A., Balhasan, S., Elgaddafi, R., Malayer, M. A., Malhas, R. N., et al. (2023). Enhancing thermal stability and filtration control for water-based drilling fluid using viscosifier polymers and potassium chloride additives. <i>Geoenergy Science and Engineering</i>, 230, 212235. https://doi.org/10.1016/j.geoen.2023.212235 5. Malhas, R. N., & Amadi, K. W. (2023). Oil Removal from Polluted Seawater using Carbon Avocado Peel as Bio-Absorbent. <i>European Journal of Engineering and Technology Research</i>, 8(2), 26–32. https://doi.org/10.24018/ejeng.2023.8.2.3004. 6. Misbah, B., Malhas, R. N., & Elgaddafi, R. (2023). Reducing Environmental Impact of Drilling Operations through the

- Implementation of Organic Waste Additives for Environmental Protection. Proceedings of the 8th World Congress on Civil, Structural, and Environmental Engineering (CSEE'23) Lisbon, Portugal – March 29 – 31, 2023. Paper No. ICEPTP) 204<https://doi.org/10.11159/iceptp23.204>
7. S. Ghafoori, M. Omar, N. Koutahzadeh, S. Zendejboudi, R.N. Malhas, M. Mohamed, S. Al-Zubaidi, K. Redha, F. Baraki, M. Mehrvar, New advancements, challenges, and future needs on treatment of oilfield produced water: A state-of-the-art review, *Separation and Purification Technology*. 289 (2022) 120652. <https://doi.org/10.1016/j.seppur.2022.120652>.
 8. Malhas, R.; Ghafoori, S.; Omar, M.; Marquez, S.; Al Saeedi, A.; Al-Husainan; A., Al-Ibrahim, Y.; Al-Meraj, A.; and Alshatti, A. Application of ultrafiltration membrane-embedded activated carbon-filter in Kuwait wastewater treatment in comparison with a conventional method" *Desalination and Water Treatment*. Desalination and water treatment, 246 (2022).
 9. Malhas, R.; Marquez, S.; AlSalem, A.; Al Saeedi, A. Badiei, M. Treating Kuwait's oilfield water via conventional methods and membrane technology. *Desalination and water treatment*, 209 (2021) 121–130. CiteScore: 2.7. doi: 10.5004/dwt.2021.26546.
 10. Malhas, R.; Al-Ibrahim, Y.; Al-Meraj, A.; Abdullah, H.; Alshatti, A.; Application of magnetic separation for oil Spill Remediation and recovery in Kuwait sea water. *Desalination and water treatment*, 209 (2021) 114-120). doi: 10.5004/dwt.2021.26498.
 11. Malhas, R.; Marquez, S.; Khoshouei, P. Potential application of carbon nanotubes in wastewater treatment in comparison with conventional method. *Desalination and water treatment*, 2021, 226, 85-94. doi:10.5004/dwt.2021.27230.
 12. Malhas, R.; Ghafoori, S.; Omar, M.; Nibi, M.; Al-Husainan; A., Al-Ibrahim, Y.; Al-Meraj, A.; and Alshatti. Proceedings of the 19th Kuwait Japan symposium- advanced petroleum refining industries. February 2020. Utilization of ultrafiltration membrane in treatment of KUBD wastewater in Kuwait.
 13. Shoukry, A. F.; Shuaib, N. M.; Melhas, R. N. Halogen-Free ionic Liquid for extraction and simultaneous determination of Cu(II), Pb(II), Cd(II) and Hg(II). *European Chemical Bulletin*, 2012, 1 (6), 184– 187. <https://doi.org/10.17628/ecb.2012.1.184-187>. Open access.
 14. Malhas, R. N.; Al-Awadi, N. A.; El-Dusouqui, O. M. E. Kinetics and Mechanism of Gas-Phase Pyrolysis Of N-Aryl-3-Oxobutanamide Ketoanilides, Their 2- Arylhydrazono Derivatives, and Related Compounds. *Int. J. Chem. Kinet.*, 2007, 39 (2), 82–91. <https://doi.org/10.1002/kin.20220>.
 15. Malhas, R.; Ibrahim, Y. Synthesis of Olefinic Crown Diamides and Their Conversion into Pyrazolino Macrocycles: Promising

	<p>Photoluminescent Crown Compounds. <i>Synthesis</i>, 2006 (19), 3261–3269. https://doi.org/10.1055/s-2006-942540.</p> <p>16. Behbehani, H.; Ibrahim, Y. A.; Malhas, R. N. <i>Kuwait Journal of Science & Engineering</i>. 2006, 33(2), 81-88. Efficient N-alkylation of Aza and diaza macrocycles under microwave Irradiation in solventless media.</p> <p>17. Shoukry, A. F.; Shuaib, N. M.; Ibrahim, Y. A.; Malhas, R. N. Thermal Studies of New Lead(II) Coated-Wire Membrane Electrodes. <i>Electroanalysis</i>, 2005, 17 (8), 713–718. https://doi.org/10.1002/elan.200403133.</p> <p>18. Behbehani, H.; Ibrahim, Y. A.; Malhas, R. N. <i>Kuwait Journal of Science & Engineering</i>. 2004, 31(2), 61-75. Synthesis of benzo and naphtho unsaturated crown ethers via ring closing metathesis.</p> <p>19. Shoukry, A.; Shuaib, N.; Malhas, R. N. Ionization of Some Derivatives of Benzamide, Oxamide and Malonamide in DMF Water Mixture. <i>Talanta</i>, 2004, 64 (4), 949–954. https://doi.org/10.1016/j.talanta.2004.04.020.</p> <p>20. Ibrahim, Y. A.; Behbehani, H.; Ibrahim, M. R.; Malhas, R. N. Efficient Synthesis of 16–28 Membered Macrocyclic Crown Amides via Ring Closing Metathesis. <i>Tetrahedron</i>, 2003, 59 (37), 7273–7282. https://doi.org/10.1016/S0040-4020(03)01174-8.</p>
Paper Presentations at Professional Conferences:	<ol style="list-style-type: none"> 1. Presenting paper in Tamilnadu Engineers Forum, Kuwait (TEF 2022)/ 13th TICE/ 6th EEA on 27th Oct'2022 @Radisson, Blu- Kuwait. 13th Technological innovation conference & exposition. Title: Pioneering treatment of oily water using nanoparticles. 2. Participate in 6th Maintcon Conference & Exhibition in the innovation corner in Bahrain, Dates: 27 to 30 November 2022 with AU students. 3. participate in “Inter College Environmental Public Speaking Competition 2017”, Dates: 26 to 27 November 2017 in Emirates. Hosted by Emirates Environmental Group. 4. Presenting paper in Japan symposium- advanced petroleum refining industries. 3-4 February 2020. Title: Utilization of ultrafiltration membrane in treatment of KUBD wastewater
College Service including committee Membership:	<ul style="list-style-type: none"> - Membership at Kuwait chemical society - Chairperson for LAB committee - Chairperson for PBL committee - Participation in Health & Safety events
National Service:	NA
College Committees:	<ul style="list-style-type: none"> - CT Committee - Curriculum Committee - Lab Committee - PBL - Labs Committee - Teaching, Learning Validation & Moderation Committee