

# Curriculum Vitae



## Esra Eisa Aleisa

Associate Professor PhD, PMP

Industrial and Management Systems Engineering Department  
Kuwait University  
College of Engineering and Petroleum  
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## Summary

Research interests and expertise includes systems simulations and Life Cycle Assessment (LCA), mathematical modeling and statistical analysis for sustainable development, cleaner water production and wastewater treatment. She has accomplished projects in collaboration with the United Nations Commission Committee (UNCC) in regard to post war environmental remediation, The United Nations Environment Programme (UNEP), The United Nations Industrial Development Organization (UNIDO) and Kuwait Foundation for Advancement of Science (KFAS) on national resource efficiency and cleaner production. She has a patent in an environmental invention. She is a project management professional (PMP). She is an author for UNESCO science technology and innovation report. And a consultant at the National Academies of Science, Engineering and Medicine (NASEM). She is a member of Omega Rho, IEEE and IIE and others.

## Degrees

Asso. Prof.	2015	Kuwait University, Industrial Engineering
Ph.D.	2005	State University of New York at Buffalo, Industrial Engineering
M.S.	2001	State University of New York at Buffalo, Industrial Engineering
B.S.	1998	Kuwait University, Industrial Engineering

## Career

UNESCO author, "Technical report on nonconventional water resource management"	2021 – present
Consultant National Academies of Science, Engineering and Medicine (NASEM)	2020 – present
UNESCO author, Science Report 2020, Towards 2030	2019 – 2021
Consultant, Ministry of Oil (and Ministry of Electricity and Water), Strategic Plan	2019 – 2020
Vice Dean for Planning and Career Development, College of Engineering and Petroleum, Kuwait University	2016 – 2018
Delegate at Kuwait Foundation for the Advancement of Science (KFAS)	2014 – 2016
Faculty member, Industrial and Management Systems Engineering, Kuwait University	2005 – present
Industrial Engineer, Al Essa Real Estate	1999 – 2000

## Publications

### Journal Papers

1. Aleisa E, Alsulaili A, Almuzaini Y. 2021. Recirculating treated sewage sludge for agricultural use: Life cycle assessment for a circular economy *Waste Management* 135:79-89.
2. Aleisa, E. and R. Heijungs, 2020. Leveraging Life Cycle Assessment and Simplex Lattice Design in Optimizing Fossil Fuel Blends for Sustainable Desalination, *The International Journal of Life Cycle Assessment*, 25(4) 744:759.
3. Aleisa, E. and K. Al-Shayji, 2019. Analysis on Reclamation and Reuse of Wastewater in Kuwait, *Journal of Engineering Research*, 7(1):1:12.
4. Al-Shayji, K., & Aleisa, E. 2018. Characterizing the fossil fuel impacts in water desalination plants in Kuwait: A Life Cycle Assessment approach. *Energy*, 158, 681-692, doi: <https://doi.org/10.1016/j.energy.2018.06.077>.
5. Aleisa, E., Al-Jarallah, R., & Shehada, D. 2018. The effect of geological and meteorological conditions on municipal waste management systems: a life cycle assessment approach, *International Journal of Environmental Science and Technology*, doi:10.1007/s13762-018-1688-9.
6. Aleisa, E., and Al-Shayji, K. 2018. Ecological-economic modeling to optimize a desalination policy: Case study of an arid rentier state. *Desalination*, 430, 64-73.
7. Aleisa, E. 2018. The fire station location problem: a literature survey, *Int. J. Emergency Management*.14(3): July issue.

8. Aleisa, E. and Al-Jarallah, R., 2017. A Triple Bottom Line Evaluation of Solid Waste Management Strategies: A Case Study for an Arid Gulf State, Kuwait. *The International Journal of Life Cycle Assessment*, doi.org/10.1007.
9. Aleisa, E. and W. Al-Zubari, 2017. Recommendations for better utilization of wastewater in the GCC countries (Arabic), *Emirates Journal for Engineering Research*, 22(3):1.
10. Aleisa, E. and W. Al-Zubari, 2017. Wastewater Reuse in the Countries of the Gulf Cooperation Council (GCC): The Lost Opportunity, *Environmental Monitoring and Assessment*, 189(11):553.
11. Aleisa, E., A. Al-Jadi and S. Al-Sabah, 2015. A simulation-based assessment of a prospective sewer master plan, *World Journal of Modelling and Simulation*, 11(4): 272-281.
12. Savsar, M. and Aleisa, E., 2015. Simulation Modeling and Analysis of Fire Fighting in the State of Kuwait, *International Journal of Information Systems and Supply Chain Management*, 8(2),31-48.
13. Aleisa, E., Savsar, M., Mohammed M. Al-Mashaan, Al-Jadi, A., Al-Sabah, S.A., 2014. A metaheuristic approach for location of gas stations in a metropolitan area. *International Journal of Operational Research* 21 (2), 172 - 200.
14. Al-Jarallah, R., Aleisa, E., 2014. A baseline study characterizing the municipal solid waste in the State of Kuwait. *Waste Management* 34 (5), 952-960.
15. Al-Jarallah, R., Aleisa, E., 2013. Investigating Causes Contributing to Increased Municipal Solid Waste in Kuwait: A National Survey. *Journal of Engineering Research* 1 (3), 123-143.
16. Savsar, M., Aleisa, E., 2013. Simulation Modeling and Analysis of In-Flight Service Operations for Commercial Passenger Flights. *International Journal of Applied Operational Research* 2 (4), 27-40.
17. Aleisa, E., Aljenai, L., Jeraq, D., 2013. Analysis on the suitability of exploiting oil-contaminated soils in wearing layer of Asphalt concrete. *European Journal of Environmental and Civil Engineering* 18 (2), 223-240.
18. Aleisa, E., Suresh, N.C., Li Lin, 2011. Team Formation in Concurrent Engineering Using Group Technology (GT) Concepts. *Concurrent Engineering* 19 (3), 213-224.
19. Aleisa, E., Al-Ahmad, M., Taha, A.M., 2011. Design and management of a sewage pit through discrete-event simulation, *Simulation* 87 (11), 989-1001.
20. Aleisa, E., Lin, L., 2010. A Design Structure Matrix Approach for Generating Planning Abstraction Hierarchies. *Kuwait Journal of Science and Engineering (KJSE)* 34 (1B), 203-224.
21. Aleisa, E., Lin, L., 2009. Sequencing of design tasks based on the degree of permissible concurrency. *International Journal of Applied Management Science (IJAMS)* 1 (4), 367-387.
22. Aleisa, E., Lin, L., 2008. Abstraction Hierarchies for Engineering Design. *International Journal of Electrical, Computer, and Systems Engineering* 2 (1), 20-32.

#### *Books and Chapter Books*

1. Aleisa E, Al-Asfour A, Alkandari A, Alhashem F, Alfaiakawi A, Alhouthi I, Almahmeed Y. "From here we shall set sail: A national initiative to reform and advance education in Kuwait" (Arabic), ISBN: 978-9921-0-1913-1, Kuwait, 2021.
2. Aleisa, Esra, Abdelkader Djeflat, and Moneef Zou'bi. "The Arab States." In *Unesco Science Report: The Race against Time for Smarter Development*, edited by Susan Schneegans, Tiffany Straza and Jake Lewis. Paris, France: United Nations Educational, Scientific and Cultural Organization, 2021.
3. Aleisa, E., 2010. *Facilities Planning and Simulation, the Passionate Attachment*. LAP Lambert Academic Publishing AG & Co, Saarbrücken, Germany.
4. Aleisa, E., 2010. *Abstraction Hierarchies for Conceptual Engineering Design*, in: Lazinica, A. (Ed.), *New, Technologies*. IN-TECH.

#### *Conference Proceedings*

1. Aleisa, E. and K. Al-Shayji, 2019, *Optimizing Environmental and Economic Impacts of Seawater Desalination in a Rentier State of An Arid Environment: Kuwait, Proceedings of SEEP2019, 18-21 November 2019, UOS, Sharjah, UAE*
2. Aleisa, E. and Al-Jarallah, R., 2018, *Triple Bottom-line Evaluation of Municipal Solid Waste Strategies for the State of Kuwait, The 3<sup>rd</sup> KISR/Italian Joint Workshop on Waste Management "Resources to resources", KISR, November 20, 2018, Kuwait.*
3. Aleisa, E. and Al-Jarallah, R., 2018, *Triple Bottom-line Evaluation of Municipal Solid Waste Strategies Using Life Cycle Assessment, The Life Cycle Innovation Conference, organized by Forum for sustainability through life cycle innovation (FSLCI), August 29-31, 2018, Berlin.*
4. Aleisa, E. and Al-Jarallah, R., 2018, *An Integrated Environmental, Financial and Social Evaluation of Municipal Solid Waste Strategies Using Life Cycle Assessment, International Conference on Sustainable Development 2018, organized by Institute for Sustainability, Newcastle University, August 14-15, 2018, Oxford, U.K.*
5. Rawa Al-Jarallah and Esra Aleisa, "Characterizing Municipal Solid Waste for the State of Kuwait", *The 1<sup>st</sup> Waste Management Research Forum, Environment & Life Sciences Research Center (ELSRC), Kuwait Institute for Scientific Research (KISR), Kuwait City, 28th March, 2018.*

6. Aleisa, E. and Al-Zubari, W., "Wastewater Reuse in the Gulf Cooperation Council (GCC) Countries, the Lost Opportunity" 36<sup>th</sup> Gulf Development Forum, Bahrain, February 19-20, 2016.(in Arabic)
7. Esra Aleisa, Mehmet Savsar, Anwar aljuwaisri, Sara Alosaimi, Fatma Alsabri, Driving Cost Per Kilo Watt Hour for Photovoltaic (PV) Systems Based on Climatic Conditions of the GCC Countries, ADNEC, Abu Dhabi, United Arab Emirates, 11 – 13 October, 2015.
8. Al-Jarallah, R., Aleisa, E., 2015. A National Survey on Socio-economic Factors Contributing to Increased Municipal Solid Waste in Kuwait. 18th International Academic Conference, London, UK, August 25–28, 2015.
9. Aleisa, E., Savsar, M., AlQenaei, E. and Almutairi, S. 2015. Conceptual and Detailed Design of Utilizing a Prospective State University Rooftop to Generate Energy Using an On-Grid Photovoltaic Solar System. Proceedings of the Ecocity World Summit, Abu Dhabi, UAE, 11-13 October, 2015.
10. Savsar, M., Aleisa, E., Aljuwaisri, A., Aljaser, F. and Alhijji, A., 2015. A Multi-Criteria Approach to Review Different Cleaning Methods and Maintenance Schedules for Pv Solar Panels of Prospective University Campus In Kuwait. Proceedings of the Ecocity World Summit, Abu Dhabi, UAE, 11-13 October, 2015.
11. Aleisa, E., Savsar, M., AlQenaei, E. and Almutairi, S. 2015. Conceptual and Detailed Design of Utilizing a Prospective State University Rooftop to Generate Energy Using an On-Grid Photovoltaic Solar System, Kuwait Conference for Oil and Gas in 2015, Kuwait, October , 2015.
12. Aleisa, E., Mutawa, R. and Al-Mansour, F. Realizing the Environmental and Financial Aspects for Three Desalination Technologies: A life Cycle Assessment Approach, Water Scarcity. The 5th World Sustainability Forum (wsf-5), Basel, Switzerland, 7–9 September 2015.
13. Aleisa, E., Savsar, M., 2014. Response Time Analysis of Firefighting Operations Using Discrete Event Simulation, Proceedings of the 2014 UKSim-AMSS 16th International Conference on Computer Modelling and Simulation. IEEE Computer Society. 330-334.
14. Aleisa, E. and Alsaleh, A., 2012. Germination of Two Native Plants Oil Contaminated Soil, The Role of Private & Public Sector in Development, Environment and Sustainability, Kuwait.
15. Alsabab, H., Abdullah, A., Alakshani, N., Aleisa, E., 2012. Detection Efficiency of Unexploded Ordinance in Oil Contaminated Soil, International Conference on Ecological, Environmental and Biological Sciences (ICEEBS'2012). www.psrcentre.org, Dubai, UAE.
16. Aleisa, E., Aljenai, L., Jeraq, D., Alwazzan , F., 2012. The Use of Oil Contaminated Soil in Asphalt Concrete for Road Construction, International Conference on Ecological, Environmental and Biological Sciences (ICEEBS'2012). www.psrcentre.org, Dubai, UAE.
17. Aleisa, E., Suresh, N.C., Lin, L., 2011. GT for CE: Operating Group Technology for Team Formation in Concurrent Engineering, European Concurrent Engineering Conf. (ECEC 2011). British Inst.of Technology & Ecommerce, UK, Prel. Program, Ecommerce, UK.
18. Aleisa, E., Al-Shayji, K., Al-Jarallah, R., 2011. Residential Wastewaters Treatment System in Kuwait, 2nd International Conference on Environmental Science and Technology ICEST, Singapore.
19. Aleisa, E., Alkassar, O., Al-Jadi, A., Al-Sabah, S., Hishmi, R.M., 2011. A simulation-based evaluation for a strategic residential wastewater network master plan Proceedings of the 2011 Winter Simulation Conference (WSC), Tempe, Arizona. 953 - 962.
20. Aleisa, E. and Al-Shayji, K. "Advances in the Treatment of Kuwait Residential Wastewaters" The third Kuwait waste management conference and exhibition, April 6<sup>th</sup> -8<sup>th</sup>, 2010, Kuwait.
21. Savsar, M., Aleisa, E., 2009. Analyzing in Flight Air Hostess Tasks through Discrete Event Simulation, Industrial Simulation Conference. eurosis.org, Loughborough, UK.
22. Aleisa, E., Lin, L., 2009. Accelerating Design Convergence Using the Degree of Permissible Concurrency, Proceeding of the International Conference on Information Science and Technology Applications (ISTA 2009), Kuwait. 29-36.
23. Aleisa, E., Al-Ahmed, M.D., 2009. Application of discrete event simulation to design and management of waste water pit –a case study. Proceeding of The 5th IEEE GCC Conference & Exhibitions (IEEEGCC 2009). IEEE, Kuwait City, Kuwait.
24. Aleisa, E., 2008. An Overview of Multilevel and Hierarchical Methods for Discrete-Event Simulation of Complex Systems, in: Colloc, J., Petit, C., Dussart, C. (Eds.), Industrial Simulation Conference (ISC08), Lyon, France. 249-255.
25. Aleisa, E. 2008. Developing Efficient Testing and Unloading Procedures for a Local Sewage Holding Pit, International Conference on Industrial Engineering (ICIE 2008), Paris, France, July 04-06, 2008.
26. Aleisa, E., Lin, L., 2005. For effective facilities planning: layout optimization then simulation, or vice versa?, Proceedings of the 37th conference on winter simulation. Winter Simulation Conference, Orlando, Florida. 1381-1385.
27. Aleisa, E., Lin, L., 2004. Partial Order Recursive Abstraction Hierarchies for Engineering Design, in: King, R., Norman, B. (Eds.), Industrial Engineering Research Conference. Institute of Industrial Engineers, Houston, TX. 152-161.
28. Aleisa, E., Lin, L., 2004. Formalizing hierarchical modeling for simulation of complex systems, Proceedings of the 36th conference on winter simulation. Winter Simulation Conference, Presentation and poster for the Ph.D. Student Colloquium of the Winter Simulation Conference '04, Washington D.C., December 5-8, 2004.

#### Conference Presentations

1. Speaker, food waste, circular economy and the role of non-governmental societies, Program of corporate social responsibility, Regional network for corporate social responsibility, Kuwait, 29 Sep 2021.
2. Speaker, "Science and technology trends, innovation... and the need for governance" Kuwait Anticorruption Authority, August 1, 2021, Kuwait.
3. Keynote speaker, Aleisa E., "Science Technology and Innovation A race against time UNESCO 2021", Allied Health Sciences and Public Health, July, 15, 2021.
4. Aleisa, E. "Blended learning in Kuwait What does it take" (Arabic), in conference, Ensuring Learning During Exceptional Times (Virtual), HY+ center of continuing education, University of Helsinki, in organization by the Educational Development Center, Kuwait University, and KFAS, June 1-2, 2021
5. Keynote speaker, Aleisa E., "Think Sustainably" , Kuwait National Petroleum Company (KNPC), February, 14, 2019.
6. Speaker, Triple Bottom-line Evaluation of Municipal Solid Waste Strategies Using Life Cycle Assessment, The Life Cycle Innovation Conference, organized by Forum for sustainability through life cycle innovation (FSLCI), August 29-31, 2018, Berlin.
7. Speaker, Kuwait Second Industrial Engineering Conference, "A first step into the future for newly IE graduates", organized by Industrial and Systems Engineering Kuwait Student Chapter, April 21<sup>st</sup>, 2018, Kuwait
8. Aleisa, E. Al-Jadi, A., Alsabbah, S. and Al kassar, O., 2011. Analysis of Kuwait Sanitary Master Plan, Fourth Kuwait Waste Management Conference and Exhibition, October 18-19, 2011.(presentation)
9. Aleisa, E. and AlHishmi, R. 2011. Construction & Demolition Waste Recycling, Fourth Kuwait Waste Management Conference and Exhibition, October 18-19, 2011.(presentation)
10. Aleisa, E. 2010. The Problem of Efficient Blood Transfusion. Poster in the Winter Simulation Conference, Baltimore, Maryland, USA, December 5-8, 2010.(presentation)

#### Conference Posters

1. Aleisa, E. and K. Al-Shayji, 2019, Ecological–Economic Modelling for Optimizing a Desalination Policy: A Case Study of an Arid Rentier State (poster), Cairo, Egypt, November 17-19, 2019 sponsored by: National Academies of Science, Engineering and Medicine (NASEM), Bibliotheca Alexandrina, Kuwait Foundation for the Advancement of Science (KFAS), NSF, NASA, USAID, SIMAR.
2. Aleisa, E., Mutawa, R. and Al-Mansour, F. 2015. Realizing the Environmental and Financial Aspects for Three Desalination Technologies: A Life Cycle Assessment Approach. The 7th International Conference on Life Cycle Management, Bordeaux, France, August 30 – September 1<sup>st</sup> 2015. (poster)
3. Aleisa, E., AlDakheel, A., Al Mutairi, S. 2009. Testing Intelligence for Kuwait University Engineering Students using IQ. The third poster day bulletin organized by the College of Science, Kuwait University, April, 12<sup>th</sup> 2009.
4. Aleisa, E., Al-Shuraian, N., Al-Jeri, S., Al-Fzaie, S. 2009. Conducting Design of Experiment Analysis on Shooting Sport Procedures. The third poster day bulletin organized by the College of Science, Kuwait University, April, 12<sup>th</sup> 2009.
5. Aleisa, E., Al-Otaibi, A., Al-Foraih, D., Al-Shatti, R. 2009. Effect of Energy Drinks on Heart Rate and Blood Pressure, A DOE Study. The third poster day bulletin organized by the College of Science, Kuwait University, April, 12<sup>th</sup> 2009.
6. Aleisa, E., 2008. Facility Layout Analysis Applied to Detergent Manufacturer in Kuwait. The poster day bulletin organized by the College of Engineering and Petroleum, Kuwait University, May, 26<sup>th</sup> 2008.
7. Aleisa, E., 2008. Hierarchical Modeling for Discrete-Event Simulation of Complex Systems. The poster day bulletin organized by the College of Engineering and Petroleum, Kuwait University, May, 26<sup>th</sup> 2008.
8. Aleisa, E. 2008. Using Hierarchies for Incremental Satisfaction of Constraint Objects' Constraints and Preferences. The poster day bulletin organized by the College of Engineering and Petroleum, Kuwait University, 26<sup>th</sup> 2008.

#### Chairing of Conferences, tracks and sessions

1. Co-chair, Sixth Arab-American Frontiers for Science, Engineering and Medicine, Kuwait, 4-6 November 2018, sponsored by: National Academies of Science, Engineering and Medicine (NASEM), Kuwait Foundation for the Advancement of Science (KFAS), NSF, NASA, USAID.
2. Panel coordinator, Water Scarcity. The 5th World Sustainability Forum (wsf-5), Basel, Switzerland, 7–9 September 2015.
3. Coordinator member (IPC), *Applications in Environmental Sciences*, Winter Simulation Conference (WSC), 2012.
4. Track Coordinator, *Environmental and Sustainability Applications*, Winter Simulation Conference (WSC), 2011

5. Urban and Intermodal Traffic Systems II, Industrial Simulation Conference (ISC), Loughborough, Leicestershire, LE11 4EX, United Kingdom (2009)
6. Networks and Wireless Technologies, Networks II, International Conference on Information Science and Technology Applications (ISTA 2009) March 20-22, 2009, Kuwait
7. Logistic Committee, First Poster Day Conference, College of Engineering and Petroleum (2008)
8. Committee Member in the rules and regulation committee in the efforts for establishing Kuwait Society for Quality.
9. Facilities Planning & Work Cell Design, Winter Simulation Conference (WSC), 2005
10. Parallel and Distributed Methods II committee, Winter Simulation Conference (WSC), 2004

#### *Conferences Attended*

1. Participant, Towards Sustainable Food Systems in Kuwait Dialogue. organized by The Public Authority for Food and Nutrition in Kuwait (PAFN), June 30th, 2021, Kuwait.
2. Participant, The Joint Workshop on Plastic-to-Fuel Recovery, between KISR and UK Science & Innovation Network, and the British Council (British Universities), KISR, January 14, 2020, Kuwait.
3. Participant, The 4<sup>th</sup> KISR/Italian Joint Workshop on Waste Management “Products, Energy & Fuel Recovery From Solid Waste”, KISR, November 24, 2019, Kuwait.
4. Participant, The solar desalination workshop workshop, in the 7<sup>th</sup> International Conference on Energy Research and Development. organized by ASHRAE and Kuwait University, November 19-21, 2019, Kuwait.
5. Participant, 1st EU-GCC regional workshop, Addressing the energy-water nexus through integrated approaches and regional cooperation, organized by EU-GCC Cleanenergy.net, Muscat, Oman, April 24-25th, 2019.
6. Participant, Next Generation Brine Desalination and Management for Efficiency, Reliability and Sustainability, Symposium organized by Kuwait University and MIT, KFAS, Kuwait City, March 27th, 2019.
7. Participant, Advances in Membrane Science and Water Technologies Supporting Sustainable Water Supply, Masdar city, Abu Dhabi, UAE, March 18<sup>th</sup>, 2019.
8. Participant, System Resilience: Definitions, Quantification and Associated Economics, by Prof. Bilal Ayyub, Kuwait University, March 10<sup>th</sup>, 2019.
9. Participant, SETAC Europe 24<sup>th</sup> LCA Symposium, organized setac.org, Vienna, September 24-26, 2018.
10. Participant, Fourth Arab Forum for Renewable Energy and Energy Efficiency (ARFREE), “Sustainable Energy: Investment Employment and Technology” organized by League of Arab States Secretariat and Ministry of Electricity and Water, Kuwait City, May 6-7, 2018.
11. Participant, Fourth Arab Forum for Renewable Energy and Energy Efficiency (ARFREE), “Sustainable Energy: Investment Employment and Technology” organized by League of Arab States Secretariat and Ministry of Electricity and Water, Kuwait City, May 6-7, 2018.
12. Participant, Third Arab Countries Water Conference, organized by Ministry of Electricity and Water, Kuwait City, May 2-4, 2018.
13. Participant, Arab-German Young Academy of Sciences and Humanities (AGYA), April 22-23, 2018, KFAS, Kuwait.
14. Participant, Second Kuwait-imec Symposium: Energy and Information Communications Technology: A Crucial Combination for Deploying a Sustainable Energy System, April 17-18, 2018, KFAS, Kuwait.
15. Participant, Water Day Forum, organized by Ministry of Electricity and Water, Kuwait City, 22<sup>nd</sup> March, 2018.
16. Participant, Project Leadership Through Excellence and Innovation, organized by PMI MENA, Kuwait City, 7<sup>th</sup> December, 2017.
17. Participant, Our Seas, Theories, Data and Policies Symposium, organized by KFAS, Kuwait, 18-20 November, 2017.
18. Participant, Women Leaders in Science, Technology, and Engineering, organized by KFAS, Kuwait, 23-25 October, 2017.

#### **Professional Services**

##### *United Nations*

- Author, Science, Technology and Innovation (STI) in the Arab Countries: GCC and Yemen Country Profiles, UNESCO World Science Report 2020, 2019-2020.
- Visit, Egypt National Cleaner Production Centre (ENCPC). 2015. The Ministry of Trade, Industry and Small and Medium Enterprises (SMEs). Part of UNIDO/UNEP Resource Efficient and Cleaner Production (RECP) Global Network. Downtown, Cairo, Egypt
- Participant in the workshop on “Green Industry: Transforming the Industry of the Future” Manama, Bahrain, June, 2014, The United Nations Industrial Development Organization (UNIDO) and Institute for Capacity Development, Investment and Technology Promotion Office (ITPO) / Arab International Center for Entrepreneurship & Investment (AICEI).

- Roundtable Expert and Participant in the “National Consultation Climate, Environment and Resilience” November 12, 2013, UNDP, UN house, Kuwait.
- Organizer and Participant, “Oil lakes/ Soil remediation forum” Kuwait National Focal Point (KNFP) and UNCC, March 22-25th, 2010, Al Habara Club, Kuwait Oil Company (KOC), Kuwait.
- Project Manager: Scoping and Phasing of Kuwait Oil Lakes, January 2010- 2012, Office of Career and Development (OCCD), Kuwait University and Kuwait National Focal Point (KNFP), UNCC.

#### *National Science Foundation (NSF)*

- Research Participant in the “Workshop on Simulation Optimization” Sponsored by the National Science Foundation (Robert L. Smith, OR Program Director) and the Robert H. Smith School of Business, University of Maryland, May 24-25, 2010
- Research Participant in the “Workshop on Simulation Optimization Follow up” Sponsored by the National Science Foundation (Robert L. Smith, OR Program Director), Baltimore, MD, December 4<sup>th</sup>, 2010.

#### **Associate/Guest Journal Editor**

1. Frontiers Science
2. Others

#### **Awards**

- First Place, Health Safety & Environment (HSE) Award by the Kuwait National Petroleum Company (KNPC), March 15<sup>th</sup>, 2018.
- Second place award, Administrative Excellence, for managing OCCD, Kuwait University August 2017
- Best senior project award (for supervising undergraduate students), Multi-criteria Evaluation of the Sustainable Use of Solar Energy in Sabah AlSalem Kuwait University City” awarded by Kuwait Foundation for the Advancement of Science (KFAS), May 12<sup>th</sup>, 2015.
- Best senior project award (for supervising undergraduate students), Multi-criteria Evaluation of the Sustainable Use of Solar Energy in Sabah AlSalem Kuwait University City” awarded by Kuwait Oil Company (KOC), October 13<sup>th</sup>, 2015.
- Best Undergraduate Industrial and Management Systems Engineering Senior Project Award, College of Engineering and Petroleum Kuwait University May 2014.
- Best Paper Award” Planetary Research Scientific Center, Dubai, UAE, 2012.
- Project Management Professional (PMP), Project Management Institute (PMI), July 26<sup>th</sup>, 2011
- Star Award, granted the Kuwait National Petroleum Company (KNPC) Health Safety & Environment (HSE), May 24<sup>th</sup>, 2011.
- First place award, Technical Poster Day, Kuwait University May 2008
- Third place winner e-learning course award for the academic year 2006-2007

#### **Patents**

- Aleisa, E., Aljenai, L., Jeraq, D., 2015. US 14/445,429, Asphalt composition and method for testing, selecting, and adding oil contaminated soil too asphalt for road construction. Lowe Hauptman & Ham, LLP Office, Kuwait.

#### **Computer skills**

- Java, C++, QBasic, Visual Basic, Excel programming, ARENA process simulation, Simapro (Pre) of Life Cycle Assessment (LCA), Geographic Information Systems (GIS), MS project, Primavera, Minitab, SPSS, Design Expert statistical software, Endnote, COMSOAL assembly line balancing, PlanOpt layout software, GAMS (General Algebraic Modeling System)

#### **Professional Society Membership**

Member, Forum for Sustainability through Life Cycle Innovation (FSLCI)  
 Member, European Association of Environmental and Resource Economists (EAERE)  
 Member, Society of Environmental Toxicology and Chemistry (SETAC)  
 Member, Life Cycle Initiative Network (LC Net)  
 Member, Project Management Institute (PMI)  
 Member, The Institute of Industrial Engineers (IIE)  
 Member, The Institute for Operations Research and the Management Sciences (INFORMS)  
 Member, The Omega Rho international Operations Research Society  
 Member, the Institute of Electrical and Electronics Engineers, Inc. (IEEE)

Member, The American Society for Engineering Education (ASEE)

### **Courses Taught at Kuwait University:**

Engineering Economy, Introduction to Industrial Engineering, Facilities Planning and Design, Design and Analysis of Experiment, Simulation modeling, Project Management, Senior design project, Life Cycle Assessment.

### **Institutional Services**

Research college committee, 2019- present

Masters' program review 2021

Member, Committee for the Award of Administrative Excellence at Kuwait University, 2018

Member, Revisions of Kuwait University Bylaws for professional consultation services, 2017

Grades variation committee for, January 2013 - 2015

*College of Engineering and Petroleum*

Scholarship Committee, 2014- 2020

Contract Renewal Committee, 2014- 2020

Coordinator of Budget Committee, 2016-2017, College of Engineering and Petroleum, Kuwait University.

Coordinator of Consultations and Training Committee, 2016-2017, College of Engineering and Petroleum, Kuwait University.

Coordinator of New Campus Committee, 2016-2017, College of Engineering and Petroleum, Kuwait University.

Chair, Committee for Developing the 2018-2022 Strategic Plan for the College of Engineering and Petroleum, Kuwait University, 2016-2017.

Chair, Committee for developing for revising the college of engineering and Petroleum organizational structure, 2016- 2017.

Committee for conducting need assessment for a bioengineering degree at Kuwait University, 2013.

Science and Technology (SAC) for Kuwait Inventors in collaboration with Sabah Al-Ahmed Center for Giftedness and Creativity of Kuwait Foundation for the Advancement of Sciences, 2012

Budget and facilities (2011- 2015)

Construction of new campus committee (2011- 2016)

Best E-learning Practice committee (2008-2009)

Excellent Teaching practices committee (September 2008-2009)

Students affairs committee representative (Sept 2007 – June 2010)

### **Professional Visits and Networking**

- Visit, Division for Quantitative Sustainability Assessment (QSA), Technical University of Denmark (DTU), Copenhagen, Denmark, September 2018.
- Visit, Department Environmental Science, Radboud University, Nijmegen, Netherlands, October 2018.
- Visit, Institute of Environmental Sciences, CML institutes, Leiden University, Leiden, Netherlands, October 2018.
- Visit, Department of Econometrics and Operations Research, De Boelelaan 1105, Vrije Universiteit, Amsterdam, Netherlands, October 2018.
- Visit, Environmental Change Institute, School of Geography and the Environment, University of Oxford, South Parks Road, Oxford, OX1 3QY, United Kingdom, August 2015.
- Visit, The Oxford Institute for Energy Studies, 57 Woodstock Road, Oxford OX2 6FA, United Kingdom. August 2015.

### **Professional Seminars and Invited Talks**

- Speaker, Triple Bottom-line Evaluation of Municipal Solid Waste Management Systems: A Life Cycle Assessment, October 2nd, 2018, CML institutes, Leiden University, Leiden, Netherlands.
- Speaker, Triple Bottom-line Evaluation of Municipal Solid Waste Management Systems through Life Cycle Assessment, October 4th, 2018, Radboud University, Department Environmental Science, Nijmegen, Netherlands.
- Organizer, "Risk Identification and Assessment an enterprise perspective", Bader Alrashoud, College of Engineering and Petroleum, Kuwait University, November 20<sup>th</sup>, 2017.
- Coordinator, "Multi Criteria Evaluation for a Sustainable Use of Solar Energy in Sabah Al-Salem University", Office of the Vice President for Planning, Kuwait University, February 8<sup>th</sup>, 2016.

- Speaker, “Wastewater reuse the lost opportunity”, Office of the Vice President for Planning, Kuwait University, February, 2016.
- Speaker, “Progress on Establishing a regional Resource efficiency and Cleaner production center in Kuwait”. United Nations Environment Programme (UNEP), Regional Office for West Asia (ROWA), Manama, Bahrain, June 13th, 2015.
- Speaker, “Challenges in Establishing a regional Resource efficiency and Cleaner production center in Kuwait”. United Nations Industrial Development Organization (UNIDO), Industrial Resource Efficiency Unit, Environment Branch, International Centre, Vienna, Austria, August 17th-18th, 2015.
- Organizer, “Multi Criteria Evaluation for a Sustainable Use of Solar Energy in Kuwait”, Kuwait Oil Company, November, 26<sup>th</sup> 2015.
- Speaker, "Conducting Flow Analysis Via Discrete-Event Simulation For Residential Wastewater Tanks Truck Loads Discharging At A Newly Constructed Sewage Outlet" A. James Clark school of Engineering, University of Maryland, March 2<sup>nd</sup>, 2010.
- Speaker, “Application of Discrete Event Simulation to Design and Management of Waste Water Pit - A Case Study” Tilburg University, Netherlands, November 2009
- Online webinar, “Industrial Engineering in Kuwait”, November 2008
- Speaker, “Industrial Engineering a great career choice” Society of Industrial Engineering – IIE Chapter-Kuwait, October 2008

### **Selected reports**

- Esra Aleisa, Strategic position for prospective strategy for the ministry of oil, Ministry of oil Kuwait, 2020.
- Esra Aleisa “A Feasibility Study Plan for Establishing and Operating a National Cleaner Production Center” Kuwait Foundation for the Advancement of Sciences, project number 2013-4406-01, 2016.
- Grades variation among students in college of engineering and petroleum for, 2015.
- UNESCO author, “ Technical report on nonconventional water resource management”, on going.

### **Delivered Workshops**

- Organizer, the “How to” for writing purchasing orders to fulfill your department needs at Kuwait University, November 22<sup>nd</sup>, 2017, Deans Hall, College of Engineering and Petroleum, Kuwait University.
- Organizer, Conducting SWOT Analysis and Developing a Strategic Plan, March, 2017, Farouq Barghash Hall, College of Engineering and Petroleum, Kuwait University. (co-organized with the office of vice president for planning).
- Organizer and Speaker, “Assessing the need for Establishing Resource Efficient Cleaner Production Center in Kuwait, How to make it .. For it to make a difference..” April 24th, 2016, KFAS, Kuwait.
- Speaker, “Six Sigma Strategy for Organizational Performance” Office of Consultation and Career Development, June, 2013
- Speaker, “Time Management” Office of Consultation and Career Development, December, 2013
- Speaker, “Project Management” Office of Consultation and Career Development, February, 2013
- Speaker, “Six Sigma Strategy for Organizational Performance” Office of Consultation and Career Development, November, 2008
- Speaker, “Six Sigma Strategy for Organizational Performance” Office of Consultation and Career Development, November, 2007
- Speaker, “Six Sigma Strategy for Organizational Performance” Office of Consultation and Career Development, October, 2006

### **Projects**

- Project No. EI01/18 “Entitled Generalizing Life Cycle Assessment by the Analytical Expressions of Simulation Metamodels” , Kuwait University. Ongoing.
- Project No. RE 02/18 “Entitled Mathematical Modeling of Municipal Solid Waste Treatment Options for the state of Kuwait: A life Cycle Assessment Approach, Kuwait University. Ongoing.
- Project manager, College of Engineering Electronic Workflow for professional consultations and training, 2016-2017. Internal Project, College of engineering and Petroleum, Kuwait University.
- Project manager, Business process reengineering of process workflow the Documents of the Office of Consultations and Career Development, 2016-2017. Internal Project, College of engineering and Petroleum, Kuwait University



- Project Coordinator, Calibration of Center for Testing Lab Equipment. 2016. Internal Project, College of engineering and Petroleum, Kuwait University.
- Project Coordinator, Development of Transitional plan to College of Engineering and Petroleum new campus, 2016-2017. Internal Project, College of engineering and Petroleum, Kuwait University.
- Project Coordinator, Study of the Space Program for the college of Engineering and Petroleum, 2016-2017. Internal Project, College of engineering and Petroleum, Kuwait University.
- Project Coordinator, Electronic Archiving System for the Documents of the Office of Consultations and Career Development, 2016-2017. Internal Project, College of engineering and Petroleum, Kuwait University.
- Principal Investigator, "A Feasibility Study Plan for Establishing and Operating a National Cleaner Production Center" Kuwait Foundation for the Advancement of Sciences, project number 2013-4406-01, 2013-2016.
- Co-investigator, "Strategies for solid waste management in the state of Kuwait- a life cycle assessment approach" Rawa Al Jarallah, Esra Aleisa, Project number EV03/10, Kuwait University, 2010 - 2014
- Creating a Student Training Program Plan: "Developing a Comprehensive Site Characterization for the Bahra Oil Lake" January 2010- 2012, Office of Career and Development (OCCD), Kuwait University and Kuwait National Focal Point (KNFP).
- Co-investigator, "Fire station Location analyses in a Metropolitan Area" Mehemet Savsar, Esra Aleisa, Project number EI02/11, Kuwait University, 2011 - 2013.
- Principal Investigator, "Team formation in concurrent engineering using group technology (GT) concepts" Esra Aleisa, Nallan Suresh and Li Lin, Kuwait University, Grant EI02/08, February 2009.

#### **Attended Professional Workshops and Certificates**

1. "Economic tools in LCA – Life cycle assessment costing, external costs, and cost-benefit analysis", organized by International Life Cycle Academy (ILCA), Barcelona, Spain, 14 – 16 January 2019.
2. "Sustainable local energy planning tools and methods; Lessons learnt from the Covenant of Mayors initiative in EU and beyond; Pathways towards cities carbon neutrality till 2050", organized by the EU-GCC Clean Energy Network and Environmental Protection Agency of Kuwait, Kuwait 25 – 27 November 2018.
3. "Smart energy cities; intelligent energy management tools and applications; replicability of European lighthouse cities for the GCC region", organized by the EU-GCC Clean Energy Network and Environmental Protection Agency of Kuwait, Kuwait 28 – 29 November 2018.
4. "Towards Innovative and Sustainable Technologies in Power Plants in Kuwait" organized by Kuwait Foundation for the advancement of Sciences, Kuwait, October 30<sup>th</sup>, 2018.
5. "Scopus database workshop" organized by Kuwait University Libraries, Kuwait University, October 22<sup>nd</sup>, 2018.
6. "SimaPro and LCA: essentials and in-depth", organized PRé, Amersfoort, Netherlands, September 26-28, 2018.
7. "Ecoinvent workshop", organized setac.org and ecoinvent.org, Vienna, September 24, 2018.
8. "The 7th International Summer School on Life Cycle Approaches to Sustainable Regional Development", Theme: Life cycle tool box for bio-economy initiatives, organized by Forum for sustainability through life cycle innovation (FSLCI) and UFZ, 25 - 28 August 2018 - Leipzig, Germany.
9. "Knovel, Mendeley and Scopus Database Training Session", organized by Engineering and Science Libraries, Kuwait University, December 4<sup>th</sup>, 2017.
10. "ISI Web of Science Training Session", organized by Engineering and Science Libraries, Kuwait University, November 15<sup>th</sup>, 2017.
11. "Short course: Introducing PSILCA –A comprehensive database for Social-LCA" Franziska Eisfeldt, Green Delta GmbH, Bordeaux, France, LCM 2015, 30 August 2015.
12. "Modeling and Optimization with GAMS", Thomas I. Maindl, Vienna, Austria, September 10<sup>th</sup> -11<sup>th</sup>, 2015.
13. "Effective Life Cycle Assessment (LCA) simulation with SimaPro" PRé consultants, Kuwait, August 2011.
14. "Introduction to GIS and Spatial Analysis" 10-hour course, Office of consultancy and career development at Kuwait University, April 7<sup>th</sup> -12<sup>th</sup>, 2011
15. "Advanced GIS and Model Building" 10-hour course, Office of consultancy and career development at Kuwait University, April 25<sup>th</sup> -30<sup>th</sup>, 2011
16. "Sampling Collection Procedures and Handling Methods (QA/QC)", Office of consultancy and career development at Kuwait University, April 6<sup>th</sup>, 2011
17. Scientific writing and publishing workshop for junior research staff, Office of the vice president for research, Kuwait University, March 30<sup>th</sup>, 2011
18. Scientific writing and publishing workshop for senior research staff, Office of the vice president for research, Kuwait University, March 31<sup>st</sup>, 2011
19. ArcGIS 10: A complete System, Esri, Openware, Crown Plaza, Kuwait, January 25<sup>th</sup>, 2011
20. An Introductory UXO Awareness Guidance Seminar, Mr. Brian Gentry, EOD Technology, Inc., Office of Consultation & Career development, Kuwait University, January 25<sup>th</sup>, 2011

21. Environmental Impact Studies and Evaluation: Different Techniques and Approaches, Mr. Saji Baby, Singapore, 2011.
22. Attended, Kuwait-MIT Forum "Perspectives on Energy and Climate", Kuwait Foundation for the Advancement of Sciences, Kuwait City, Kuwait, 18-20 January 2010.
23. Preparation for the PMP Certification Exam", Prof. Nabil Kartam, OCCD, Kuwait University, February 7-18, 2010.
24. Office SharePoint power end user and site owner course, MindSharp Education and Technology, Washington DC, Feb 23<sup>rd</sup> – Feb 26<sup>th</sup> 2010.
25. M101 Project Management with Microsoft Project 2007, Simplex Group, Pittsburg, PA March 2010.
26. Primavera Training - P6 Project Management Basic Course, Catalyst- Oracle, Chicago, IL, March 8-10, 2010.
27. Primavera Training - P6 Project Management Advanced Course, Catalyst- Oracle, Chicago, IL, March 11-12, 2010.
28. Preparation for the PMP Certification Exam, Dr. Khaled Mahdi and Dr. Souhaila Al-Mutawa, OCCD, Kuwait University, May 1-8, 2010.
  
30. Response Surface Methods for Process Optimization, Shari Kraber and Mark J. Anderson, Stat-Ease, Inc., Minneapolis, MN, December 2009

### **Programs and Workshops Attended to Improve Teaching and Communication with Students**

1. Attended workshop entitled "Ensuring Learning During Exceptional Times" Virtual, HY+ center of continuing education, University of Helsinki, in organization by the Educational Development Center, Kuwait University, and KFAS, June 1-2, 2021
2. Attended workshop entitled "How to design effective learning experiences: an approach between teaching and learning" organized by office of vice dean for academic affairs, Kuwait University, October 28<sup>th</sup>, 2018.
3. Attended workshop entitled "Sustainability in engineering Education & Industry" Organized by Kuwait University and Equate, Kuwait University, April 30<sup>th</sup> (2018).
4. Attended workshop entitled "Migration to latest Online Course System for the College of Engineering and Petroleum" Dr. Abdullah Al Mutawa, Millennium Hotel, February 4<sup>th</sup> (2018).
5. Attended seminar entitled "Realization of innovation and sustainability in Academia" Office of president for planning, Kuwait University, April 12<sup>th</sup> (2017).
6. Attended a workshop entitled "Certified Professional Emotional Intelligence Educator for dealing with adolescent" Dr. Mustafa Abu Al Saad, The Social Reform Society, Shamiya, Kuwait, January 10-14, 2010.
7. Attended a workshop entitled "Successful Communication" Nusiaba Al-Mutawa, HYMB, Surra, Kuwait, September (2009) – January 10<sup>th</sup> (2010)
8. Attended the workshop entitled "Outcome-Based Course and Class Room Assessment" organized by College of Engineering and Petroleum, Kuwait University, November 29<sup>th</sup> (2010).
9. Attended the following pre-conference Winter Simulation Conference workshop: "Simulation 101" Barry Lawson (University of Richmond and Larry Leemis (The College of William and Marry), December 5<sup>th</sup>, 2010, Baltimore, MD.
10. Attended Library workshop "Facilitating Online Book Orders for Students Courses" March 2009.
11. Attended seminar entitled "Developing Critical Thinking Abilities and Assessing Students knowledge Levels" Prof. Muhammad H. Rashid, March 10<sup>th</sup>, 2009, organized by the Electrical Engineering Department, Kuwait University (2009).
12. Attended a workshop entitled "The Teacher the Leader" The 38<sup>th</sup> Annual Educational Conference of Kuwait Teachers Society, Quality Training, Achieving the Future, Kuwait, March 22<sup>nd</sup> to 24<sup>th</sup> (2009).
13. Attended the workshop entitled "Dynamic Teaching in Science and Engineering: Principles and Applications" organized by the center for teaching and excellence, Office of the Vice President for Academic Affairs, Kuwait University, October 19<sup>th</sup>-20<sup>th</sup> (2009).
14. Attended a workshop entitled "Creative teaching skills" Dr. Mustafa Abu Al Saad, Qotoof Ideal School, Kuwait, October 10<sup>th</sup> (2009).
15. Attended a workshop entitled "Emotional Intelligence" Dr. Mustafa Abu Al Saad, Al-Salam School, Kuwait, November 10<sup>th</sup> (2009).
16. Attended a workshop entitled "Emotional Alchemy" Prof. Daniel Goleman and Tara Bennett-Goleman. Kripalu Center, Stockbridge, MA, December (2009).
17. Attended the workshop entitled "Enhancing your courses through e-learning tools – Advanced" organized by College of Engineering and Petroleum, Kuwait University (2007).
18. Attended the workshop entitled "Enhancing your courses through e-learning tools" organized by College of Engineering and Petroleum, Kuwait University (2006).

## Community

1. Aptitude test organization, Kuwait University 2018 – 2021.
2. Steering Committee, Chief Science Officers for middle and high school students, Organized by Kuwait Foundation for the Advancement of Sciences, 2018- Present.
3. Speaker, “Visioning for Chief Science Officers of middle and high school students”, Organized by Kuwait Foundation for the Advancement of Sciences, Gulf University, February 6, 2018.
4. Speaker, “Action Planning for Chief Science Officers of middle and high school students”, Organized by Kuwait Foundation for the Advancement of Sciences, Gulf University, February 6, 2018.
5. Co-founder of Charity Bus, 2009 - present
6. Co-founder and Member of food drive foundation, Kuwait, 2008 – present.
7. Lecturer on Emotional Intelligence and Life Skills, A variety of public schools, Kuwait, Academic Year 2009-2010
8. Lecturer on Effective Communication Skills, Ishraq Youth Center, Kuwait, October 25<sup>th</sup>, 2010.
9. Lecturer “Developing a sustainable culture for implementing voluntary Projects”, Kuwait Ministry of Islamic Affairs, 2010.
10. Participant “The first Conference on Women Training in Leadership”, Kuwait City, Kuwait, October 11-14, 2010.
11. Lecturer, “I am an Ambassador for my country”, Ishraq summer camp for youth, June 2008
12. Lecturer, “Things I want my students to know”, Society of Industrial Engineering, Kuwait University, April 2007
13. Lecturer, “College life-University life, what’s the difference”, Society of Industrial Engineering, Kuwait University, Al-Ru’ia bilingual school, December 2005.