

Short CV - Prof. Samir I. Abu-Eishah (000002636)

Education & Titles of Theses:

- PhD in Chemical Engineering, Lehigh Univ., Bethlehem-Pa, USA, 1982 (Dissertation: Design and Control of a Two-Column Distillation Process for the Separation of Homogeneous Binary Azeotropic Mixtures).
- MS in Chemical Engineering, Iowa State Univ., Ames-Iowa, USA, 1979 (Thesis: Gas-Solid Reaction Kinetics for the Hydrolysis of the Anhydrous Magnesium Chloride) – An Intermediate Step in Hydrogen Production as an Alternative Source of Energy.
- B.Sc. in Chemical Engineering, Cairo University, Cairo-Egypt, 1975 (Design Project: Production of Portland cement by the Dry Process).

Professional Experience:

- Professor: Chemical & Petroleum Engineering Department, United Arab Emirates University, Al-Ain, UAE (Sept 2014-).
- Associate Professor: Chemical & Petroleum Engineering Department, United Arab Emirates University, Al-Ain, UAE (Sept 2004-Aug 2014), Jordan University of Science & Technology, Irbid-Jordan (Sept. 1991 - Jan. 2004). Sabbatical Leave: University of Jordan, Amman, Jordan (Jan. 1994 - Jan. 1995). Sabbatical Leave + Leave of Absence: University of Bahrain (Sept 1997 - Aug 2001).
- Chairman: Chemical Engineering Department Jordan University of Science & Technology, Irbid, Jordan (AY 1986/1987) and (Jan. 1996 - Aug 1997).
- Assistant Professor: Chemical Engineering Department, Yarmouk University, Irbid, Jordan. (Oct. 1982 - Aug 1986) then Jordan University of Science & Technology (Sept. 1986- Sept. 1991).
- Research Assistant: Chemical Engineering Department, Lehigh University, Bethlehem, Pennsylvania, USA (Sept. 1979 – Oct. 1982).
- Operation Engineer & Assistant Shift Control, Jordan Petroleum Refinery Co., Jordan (Oct. 1975 - Aug 1977).

Scholarships & Awards:

1. Merit of Quality Service to UAE University, AY 2006/2007.
2. Award of His Excellency Minister of Work & Social Affairs on Active Participation in Safety Issues: "Thermal Stress and Its Effect on Work Environment Seminar", May 2000, Bahrain.
3. Dean's Award of Excellence in Research at the University of Bahrain, June 1999.
4. Award of His Majesty King Hussein of Jordan for Distinguished Scientific Research, June 1997.
5. Award of Hisham Hijawi for Applied Sciences in the field of Industry and Environment for the Year 1994: A New Technique for the Beneficiation of the Low Grade Carbonaceous Phosphate Rocks by Digestion with Dilute Acetic Acid Solutions.
6. Postgraduate Research Award in the Chem. Eng. Dept.-University of Leeds-Britain, Sponsored by the Overseas Development Administration (ODA), Summer 1988.
7. Scholarship from Yarmouk University toward M.Sc. and PhD in Chemical Engineering, USA, 1977-1982.
8. Scholarship from Ministry of Education toward B.Sc., 1970.

Research Grants and Consultations:

1. Principal Investigator of the external research project "Experimental Investigation on the Conversion of Carbon Dioxide and Water Vapor into Hydrocarbons using nano TiO₂ and Solar Energy", funded by Emirates Foundation, UAE, Sept 2011.
1. Principal Investigator: Experimental Investigation on the Conversion of CO₂ and Water Vapor into Hydrocarbons, funded by UAE University, March 2011.
2. Principal Investigator of a Consulting/Research Team on "Investigation Utilization of Steel Slag and Dust, funded by General Holding Corporation (GHC), UAE, Jan. 2010.
3. Principal Investigator of a Consulting Team: Characterization of UAE Coastal Sea Water for RO Desalination Plants, Contractual Agreement signed between UAE University and Doosan Heavy Industries & Construction, Dubai, Oct 2007 - June 2008.
4. Individual Research Grant: Dearomatization of Petroleum Fractions using Ionic Liquids, funded by UAE University, Feb 2006 - Feb 2007.
5. Joint Research Grant: Dearomatization of Petroleum Cuts Using Ionic Liquids, funded by UAE University, Feb 2006 - Feb 2007.
6. Joint Research Grant: Dearomatization of Petroleum Cuts Using Sulfolane, funded by UAE University, Feb 2005 - Feb 2006.

- Individual Research Grant: Characterization of the Local Clays and Investigation of their Suitability as Adsorbents and as Ion Exchange Resins in Water Treatment Processes, funded by UAE University, Feb 2005 – Feb 2006.
- Member of Consulting Group: Petrochemical Horizon in UAE, funded by Ministry of Presidential Affairs, UAE, 2006.
- Research grant: Azeotropic Vapor-Liquid Equilibrium Data Measurement and Simulation; funded by Research Exchange Program - Japan Petroleum Institute, Tokyo Institute of Technology, Japan, June 21 - July 22, 2005.
- Research Grant - Project No. 36/88 on "Pilot Scale Beneficiation of Calcareous Phosphates", funded by the Deanship of Scientific Research and Jordan Phosphate Mines Co. (Laboratory and Pilot-Scale Tests), Jordan, 1988-1989.

Professional Computer Skills and Modeling & Simulation Background:

- Excellent experience with engineering software and packages such as Hysys, Aspen Plus, Molecular Thermodynamics, Optimization, Numerical Recipes, and many others.
- Built software packages for Vapor-Liquid Equilibrium calculations, Azeotropic Distillation Design, Thermophysical properties of materials, Critical Properties of Mixtures, Reaction Kinetics, Filtration Characteristics, Two-Phase Heat Flow, and many others.
- Supervised over 10 M.Sc. Theses dealing with Modeling & Simulation of Chemical Processes, Critical Properties of Mixtures, Phosphoric Acid Plant, and others.
- Attended several short courses on Computer-Aided Process Design and Simulation, Distillation Dynamics and Control in the USA.
- Organized and participated in short courses such as Modeling & Simulation of Chemical Processes, Risk Assessment in Chemical Process, Safety, Heat Exchangers & Condensers Maintenance, Petroleum Refining for Non-Chemical Engineers, and others.
- Taught courses on Programming with FORTRAN and Basic, Numerical Methods for Engineers, Modeling & Simulation, Optimization, Computer-Aided Calculations, Process Analysis, Dynamics and Control.

Membership in Scientific & Professional Societies:

- Member of the Association of Jordanian Engineers, since 1975.
- Member of the "Marquis Who's Who", 2007.
- Member of AIChE for several years.
- Member of Safety on Roads and Accident Prevention for several years.

Publications in International Refereed Journals (2004-2014):

- Abu-Eishah**, S.I., Anabtawi, M.J., Issac, S.L. "Upgrading of carbonaceous phosphate rocks by direct carbonation with CO₂-water solutions" *Chem. Eng. & Processing* 43: 8, 1085-1094 (2004)
- Abu-Eishah**, S.I., Haddad, Y., Solieman, A., Bajbouj, A. "A new correlation for the specific heat of metals, metal oxides and metal fluorides as a function of temperature" *Int. J. Latin America of Applied Research (LAAR)* 34: 257-265 (2004)
- Ashour, I.; **Abu-Eishah**, S.I. "Liquid-Liquid Equilibria for Cyclohexane + Ethylbenzene + Sulfolane at (303.15, 313.15, and 323.15) K", *J. Chem. Eng. Data* 51, 859-863 (2006)
- Ashour, I.; **Abu-Eishah**, S.I. "Liquid-Liquid Equilibria of Ternary and Six-Component Systems Including Cyclohexane, Benzene, Toluene, Ethylbenzene, Cumene, and Sulfolane at 303.15 K", *J. Chem. Eng. Data* 51: 1717-1721 (2006).
- Abu-Eishah**, S.I., "Removal of Zn, Cd, and Pb ions from water by Sarooj clay", *Applied Clay Science*, 42: 201-205 (2008).
- Abu-Eishah**, S.I., Dowaidar, A.M., "Liquid-liquid Equilibrium of Ternary Systems of cyclohexane + (Benzene, Toluene, Ethylbenzene, or Xylene) + 4-methyl-N-butyl pyridinium tetrafluoroborate Ionic Liquid at 303.15 K", *J. Chem. Eng. Data* 53: 1708–1712 (2008).
- Abu-Eishah**, S.I., "Ionic Liquids Recycling for Reuse", Chapter 11, pp. 239-272, in a specialized scientific book entitled "Ionic Liquids– Classes and Properties", ISBN 978-953-307-634-8, Scott T. Handy (Editor), InTech - Open Access Publisher, Croatia, October 2011.
- Abu-Eishah**, S.I. & H.S.A. Babahar, Investigation on the Minimization of SO₂ Emissions at ADGAS (UAE) Part II- Impact on Das Island Air Quality, *International Journal of Environmental Pollution Control & Management*, Vol. 3, No. 1, January-June 2011, pp. 23-40.
- Abu-Eishah**, S.I. & H.S.A. Babahar, Investigation on the Minimization of SO₂ Emissions at Das Island (UAE): Part I- Current Schemes vs. Modified Schemes, *International Journal of Environmental Pollution Control & Management*, Vol. 3, No.1, January-June 2011, pp. 47-67.

10. **Abu-Eishah, S.I.**; El-Dieb, A.S.; Bedir, M.S. Performance of concrete mixtures made with electric arc furnace (EAF) steel slag aggregate produced in the Arabian Gulf region, *Construction and Building Materials* 34 (2012) 249–256.
11. Ayesh, Ahmad; Ahmed, Haya; Awwad, Falah; **Abu-Eishah, S.I.**; Mahmoud, S.T., “Mechanisms of Ti nanocluster formation by inert gas condensation”, *J. Materials Research*, 28 (18): 2622-2628, 2013.
12. **Samir I Abu-Eishah**, Haitham SA Babahar and Munjed Maraqa, Minimization of SO₂ Emissions at ADGAS (Das Island, UAE): I- Current vs. Modified Schemes, *Research Article: J Pet Environ Biotechnol.* 2014, 5: 173, doi: 10.4172/2157-7463.1000173
13. **Samir I Abu-Eishah**, Haitham SA Babahar and Munjed Maraqa, Minimization of SO₂ Emissions at ADGAS (Das Island, UAE): II- Impact on Air Quality, *Research Article: J Pet Environ Biotechnol.* 2014, 5: 172, doi: 10.4172/2157-7463.1000172

International, Regional and Local Conferences (2004-2014):

1. Abu-Eishah, S.I., Darwish, N.A., Aldarwish, N.A. “Experimental VLE data for the CCl₄-1,Propanol System at 94.6 kPa” The 6th Annual UAE University Research Conference, United Arab Emirates University, April 24-26, 2005.
2. Abu-Eishah, S.I. “Correlations for the thermal conductivity of metal oxides, ceramic and insulating materials as a function of temperature”, *Proceedings of the 2nd International Conference on Thermal Engineering Theory & Applications*, United Arab Emirates University, Jan 3-6, 2006.
3. Abu-Eishah, S.I. “Characterization of the Local Clays and Investigation of Their Suitability as Adsorbents and as Ion Exchange Resins in Water Treatment Processes”, *The 7th Annual U.A.E. University Research Conference*, April 22-24, 2006.
4. Ashour, I. and Abu-Eishah, S.I. “Liquid-Liquid Equilibria for Ternary Systems of Cyclohexane + (Benzene, Toluene, Ethylbenzene, or Cumene) + Sulfolane and Mixture of the Six Compounds at 30°C”, *The 7th Annual U.A.E. University Research Conference*, April 22-24, 2006.
5. Abu-Eishah, S.I., “Operations Research and Its Applications in Process Industry”, *2nd Int. Conference on Modeling, Simulation, and Applied Optimization (ICMSAO' 07)*, Abu Dhabi, March 24-27, 2007.
6. Abu-Eishah, S.I., “Liquid-liquid Equilibrium of Ternary Systems of Cyclohexane + (Benzene, Toluene, Ethylbenzene, or o-Xylene) + 4-methyl-N-butyl pyridinium tetrafluoroborate Ionic Liquid at 303.15 K”, *The 8th Annual UAE University Research Conference*, Al Ain, April 23-25, 2007.
7. Abu-Eishah, S.I., Al Mansouri, H.A., “Assessment of Favorable Conditions and Potentials of Salinity Gradient in Solar Ponds (SGSPs) and the Production of Solar Salt along Abu Dhabi Coasts”. *10th Annual Research Conference (ARC10) of UAE University*, April 13-16, 2009.
8. Abu-Eishah, S.I., “Utilization of Salinity-Gradient Solar Ponds in Production of Fresh Water and Solar Salt from Inland and Coastal Areas”. *Renewable Energy Workshop*, Dubai June 1st, 2009.
9. Participated in a 3-days participation in Renewable Energy Symposium & Exhibition (Jan 16-18, 2009), Abu Dhabi
10. Abu-Eishah, S.I., “Economic Feasibility of Salinity-Gradient Solar Ponds (SGSP) for Production of Fresh Water and Pure Salt(s) from Saline and Hypersaline Waters”, *The 2011 Int. Conf. on Water, Energy and Environment (ICWEE2011)*, Nov. 14-17, 2011. The American University of Sharjah, Sharjah, UAE.
11. Abu-Eishah, S.I. and Maraqa, M. “Minimization of SO₂ Emissions at Refineries and Gas Processing Plants by Seawater Scrubbing for Improved Air Quality”, a proposal submitted for funding to JCCP (Japan Center for Cooperation, Petroleum), April 16, 2012.
12. Abu-Eishah, S.I., “Desertification: Causes and Possible Solutions”, *Global Day for Anti- Desertification*, organized by General Services and Environment Administration, Environment Protection Section in Fujairah, June 18, 2012.
13. Ayesh, Ahmad; Ahmed, Haya; Awwad, Falah; **Abu-Eishah, S.I.**; Mahmoud, S.T., “Fabrication of Size-Selected Ti Nanoclusters by Inert Gas Condensation”, in “*Advanced Materials World Congress*”, Izmir – Turkey, September 16-19, 2013.
14. Abu-Eishah, S.I., *Modeling and Simulation of Fluid Phase Behavior of CO₂/UAE Stock-Tank Oil at Reservoir Conditions*, Abu Dhabi International Research and Development (ADRAC) Conference 2014, Abu Dhabi, Feb 24-27, 2014.
15. *Modification of the SO₂ Emissions Schemes at ADGAS (UAE) and Its Impact on Air Quality*, GPC Fourth International Gas Processing Symposium, Doha, Qatar, Oct 26-27, 2014.

Technical Reviewer (Over 12 International Journals and Conferences): Examples

1. **Associate Editor:** *Emirates Journal for Engineering Research (EJER)* since Sept 2011-.
2. *Industrial & Engineering Chemistry: Process Design & Development & Research Journals.*
3. *Journal of Chemical & Eng. Data*, USA.

4. Water Int. Journal, USA.
5. Chemical Papers, chempap@chempap.org.
6. Int. Journal of Mineral Processing.
7. Journal of the Chinese Institute of Chemical Engineers, 2006.
8. Dirasat Scientific Journal; Mu'ta Scientific Journal; Abhathul Yarmouk Journal (Jordan).
9. Int. Conf. on Advances in Production & Processing of Aluminum, APPA 2001, Bahrain.
10. First and Second Jordanian Chemical Engineering Conferences (Jordan, 1993 & 1996).
11. Engineering Conference, An-Najah National University, West Bank, Palestine, 2000.
12. Research Proposals, Deanship of Research Affairs, UAE University.
13. Second Int. Conference on Thermal Eng. Theory & Applications, UAE, 2006.
14. 11th APCChE 2006 Congress, Malaysia.

Presentations in Seminars & Workshops:

1. Safety & Industrial Security: "*Safety in Industrial, Teaching & Research Chemical Labs*"
2. Joint Research Project: "*Pilot Scale Beneficiation of Calcareous Phosphates*"
3. Workshop on "*Modeling & Design Characteristics of Chemical Processing Equipment*"
4. Energy Conservation in Industry: "*Waste Heat Recovery in the Chemical Industry*"
5. Safety in Chemical Industry: "*Safety as an Objective of Process Control*"
6. Reduction of Energy Consumption in Industry: "*Role of Process Control in Energy Conservation*".
7. Manufacturing of Laboratory Glassware.
8. Protection of Environmental-Ozone Project: "*Chemistry of the Atmosphere*"
9. Short Course on "Energy Conservation"
10. Short Course on "Role of Process Control in Energy Conservation"
11. Organizing Committee of the Jordanian Chemical Engineering Conference II.
12. Workshop on "Applied Engineering of Today & Its Future Impact"
13. Short Course on "Chemical Engineering for Non-Chemical Engineers"
14. Short Course on "Industrial Safety"
15. Short Course on "Heat Exchangers & Condensers Maintenance"
16. Workshop on "Risk Assessment in the Process Industry"
17. International Conference on Advances in Production & Processing of Aluminum, APPA 2001.
18. Short Course on "Fundamentals of Petroleum Refining", Takreer, Abu Dhabi, 2006.

Short Courses, Workshops and Other Professional & Scientific Meetings:

1. Short Course on Computer-Aided Process Design & Simulation, USA.
2. Short Course on Distillation Dynamics & Control, USA.
3. Workshop on Engineering Education with Particular Reference to University-Industry Relations.
4. Workshop on Salt Gradient in Solar Ponds.
5. Seminar on "Creating an Internationally Competitive Fertilizer Industry".
6. Short Course on Industrial Crystallization,.
7. Seminar on Geostatistics & Its Use in Predetermination of Mineral Stocks.
8. Seminar on Extractive Industries.
9. Seminar on Role of Raw Materials in the Pharmaceutical Industry.
10. Short Course on Gas Chromatography Switzerland.
11. Workshop on Planning & Evaluation of the Teaching Process in the Engineering Faculties.
12. Seminar on Fertilizers.
13. The Arab Fertilizer Association (AFA) 10th Annual Technical Conference, Jordan.
14. Workshops & Seminars on, Detergents, Paints, Technology of Oil Shale Utilization by Direct Combustion in Power Generation, & others.
15. Symposium on Modern Coating Techniques (MCT), Jordan.
16. Workshop on Planning & Evaluation of the Teaching Process in the Engineering Faculties, Jordan.
17. Middle East PETROTECH'98, 2nd Middle East Refining & Petrochemicals Conference & Exhibition, Technology & Business Prospects at the Turn of the Century, Bahrain.
18. 3rd Middle East Fire & Security Conference & Exhibition, Bahrain.
19. Seminar on Thermal Stress & Its Effect on Work Environment, Bahrain.
20. International Conference on Advances in Production & Processing of Aluminum, Bahrain.

Services for Educational Institutes & Society

1. Taught Undergraduate Chemical Engineering Courses & Labs (Yarmouk University, Jordan University of Science & Technology, University of Jordan, University of Bahrain, &/or United Arab Emirates University): Process Equipment Design, Process & Plant Design, Process Modeling & Simulation, Process

Optimization, Process Dynamics & Control, & others.

2. Taught Graduate courses (at JUST, University of Jordan, &/or UAEU): Advanced Chemical Engineering Thermodynamics, Advanced Process Analysis & Control, Optimization of Chemical Processes, Water & Wastewater Treatment, Operations Research in Water Resources.
3. Member of Examining Committees in many B.Sc. Graduation Projects in Chemical Engineering, Mechanical Engineering (at Yarmouk University, JUST, University of Jordan, & UAEU).
4. Supervised/Co-supervised 11 MSc Theses in Chemical Engineering, Petroleum Engineering, Environmental Science, and Materials Science (JUST, University of Jordan, & UAE University):
5. Member of several Master Theses Examination Committees in Chemical Engineering, Mechanical Engineering, Chemistry, & Water Resources (at Yarmouk University, JUST, University of Jordan, & UAE University).
6. Member of Executive Committee of Water Resources Graduate Program (2005-2013)
7. Chairman of College Safety Committee (since Sept 2011-present)
8. Chairman of College Peer Evaluation of Teaching (PET) Committee (Sept 2014-).
9. Member of CHE Engineering Faculty Promotions (Sept 2014-).
10. Chairman/Member of many other Committees at different levels (Department, College, etc.)