

**Mamdouh A. Allawzi**  
**Professor in Chemical Engineering**  
**Jordan University of Science and Technology (JUST)**

**CONTACT INFORMATION:**

Department of Chemical Engineering  
Jordan University of Science and Technology  
P.O. Box 3030  
Irbid 22110, Jordan

+962-2-720-1000 ext. 22409  
+962-79-8912448 (Mobile)  
e-mail: mallawzi@just.edu.jo

**RESEARCH INTERESTS:**

- Adsorption and Leaching
- Extraction
- Reaction Engineering

**EDUCATIONAL BACKGROUND:**

- Ph.D. Chemical Engineering, New Mexico State University, USA, 1992.  
Thesis title: *Kinetic Degradation and Adsorption Study of Surfactants Used in Enhanced Oil Recovery.*
- M. Sc. Chemical Engineering, New Mexico State University, USA, 1987.  
Thesis Title: *Well Damage Characteristics of New Well Fluid Formulated with Tetra Potassium Pyrophosphate (TKPP).*
- B.Sc. Petroleum Refining and Petrochemical, Oil and Gas Institute, Ploiesti, Romania, 1982

**PROFESSIONAL EXPERIENCE:**

- Jordan University of Science and Technology, Irbid, Jordan  
Professor, Chemical Engineering, 2018 – present
- Jordan University of Science and Technology, Irbid, Jordan  
Associate Professor, Chemical Engineering, 2007 – 2018
- On special leave from JUST to Al Imam University, Riyadh, Kingdom of Saudi Arabia, Associate professor, Chemical Engineering, 2009-2014.  
Establishing a new college of engineering.
- Jordan University of Science and Technology, Irbid, Jordan  
Assistant Professor, Chemical Engineering, 1993 – 2007  
Department Head, Chemical Engineering, 1999 – 2001

- New Mexico State University, Department of Chemical Engineering, Las Cruces, New Mexico, USA. Research and Teaching Assistant, 1985 – 1992
- El Paso Community Collage, Valle Verde Campus, El Paso, Texas, USA Part-time Instructor, 1990 – 1992
- Jordan Petroleum Refinery, Zarka, Jordan, Process Engineer and Shift Supervisor, 1982 – 1984.

**Academic duties at JUST:**

**Conducting research projects related to:**

- Jojoba oil extraction and characterization
- Oil shale extraction
- Tars sand utilization
- Extraction of bitumen from tar sand
- Adsorption of metals
- Supercritical fluid extraction

**Teaching undergraduate courses:**

- Process Dynamics and Control, ChE 551
- Optimization, ChE 457
- Chemical Reaction Engineering I & II, ChE 431 and ChE 432
- Equipment Design, ChE 472
- Plant Design & technical Communication, ChE 575
- Chemical Engineering Thermodynamics I & II, ChE 341 & ChE 342
- Experimental Design, ChE 450
- Petroleum Refining Engineering (Department Elective), ChE 424
- Petroleum Reservoir Modeling (Special Topics), ChE 780
- Graduation Projects I & II, ChE 591 & 592

**Teaching graduate courses:**

- Advanced Process Analysis and Control, ChE 762
- Advanced Chemical Engineering Thermodynamics, ChE 741
- Advanced Chemical Reaction Engineering, ChE 732

**Academic duties at Al Imam University, KSA 2009-2014:**

- Participate in the establishment of a new college of engineering at Al Imam University.

- Part of my duties was working on the curriculum development, admission criteria and acceptance of the first batch of students.
- Teaching undergraduate courses till the graduation of the first batch (2014)
- Head of the college of engineering labs committee where part of our duties were: selection, setup, installation, Commissioning and operation of the college of engineering labs.

### **FUNDED PROJECTS:**

- *Investigation of Oil Removal from Shale Oil Using Supercritical Fluid*, JUST Deanship of Research, 2007
- *Thermal Cracking of Diesel on Jordanian Zeolite*, JUST Deanship of Research, 2005
- *Testing of the Level of Contamination of Surface Water by Pesticides*, Jordan General Environmental Protection Agency, 2000 – 2001
- *Evaluation of Biomedical Wastes and Disposal Practices in Irbid Hospitals*, JUST Deanship of Research, 2000
- *Investigating the Formulation and Emulsion Stability of Some Pesticide Solutions*, JUST Deanship of Research, 1999
- *Joint Project for Environmental Case Studies between Purdue University, JUST, and AUB*, USIA Funded Case Study: Joint Project, Purdue, JUST, and AUB, 1997 – 1998
- *Utilization of Jojoba Oil and Seed Residue*. JUST Deanship of Research, 1996
- *Thermal Oil Recovery from the Hamza Oil Field Site*, Jordan Higher Council for Science and Technology, 1994

### **SCIENTIFIC AND PROFESSIONAL SOCIETIES:**

- EIT member, Arizona
- Member, American Institute of Chemical Engineers (AIChE)
- Member, Society of Petroleum Engineers (SPE)
- Member, Jordanian Association of Engineers (JEA)
- Member, Jordan Society for Scientific Research (JSSR)

### **PROFESSIONAL ACTIVITIES:**

- Jordan University of Science and Technology, Irbid, Jordan
  - Student Affairs Committee: 1994 – 1995; 2007
  - Committee for the Jordanian Chemical Engineering Conference II
  - Faculty of Engineering Scientific Day: 1996
  - Employment Affairs Committee: 1996 – 1998

- Higher Safety Committee: 1997 – 2005
- Jordanian Association of Engineers, Amman, Jordan
  - Supervision and Review Committee, University Graduation Project Award: 2001 – 2005

### **SKILLS AND INTEREST:**

- Knowledge of different programming and software such as: Matlab, Aspen, ChemCAD, SPSS, SAS, Polymath, and STARS (Steam and Additives Petroleum Reservoir Simulator)
- Interest in reading, social community services and environmental issues.
- Excellent communication in Arabic, English and Romanian Language.

### **PUBLICATIONS:**

1. Mamdouh Allawzi, Nadeen Al-Smadi, Munther Kandah, Mohammad AlHarahsheh, Salaheddin AbuYahya, " Bioplastic production using natural waste minerals". Submitted to Chemical Engineering & Technology Journal, 2023.
2. Mohammad Dudin, Mamdouh Allawzi, Deeb Abu Farah, " Implementing Gain Scheduling Approach to Control Large Scale Production of Diethyl Oxalate in a Catalytic Fixed Bed Multi-Tubular Reactor" Submitted to chemical Engineering and Design Journal, 2023.
3. Arwa Abdelhay, Mamdouh Allawzi, Baraa Al-Khateeb, Abeer Albsoul, Abeer Abu Othman., " Optimization of the Performance of Ultrasonic Irradiation for the Treatment of Textile Wastewater: Synergetic Effect of US and Advanced Oxidation", Water, Air, & soil Pollution, 233:210, 2022.
4. Mohammad Dudin, Deeb Abu Fara, Mamdouh Allawzi., " Modeling and simulation of the startup of the coupling reactor for an industrial scale production of diethyl oxalate.", Journal of king Saud University-Engineering Sciences, 2022. <https://doi.org/10.1016/j.jksues.2022.05.007>
5. Mamdouh Allawzi, Hussein Allaboun, Atheer Almasri, " CO<sub>2</sub> Supercritical Extraction of Essential Oil of Jordanian Rosemary", Journal of AOAC International, 102, 662-665, 2019.
6. Mamdouh Allawzi, Mohamad Al-Harahsheh, Hussein Allaboun., " Characterization and leachability propensity of bottom ash from medical waste incineration", Water, Air, & soil Pollution, Vol 5, PP 153, 2018.
7. Awni Al-Otooma, , Sameer Al-Ashehb, Mamdouh Allawzia, Khalid Mahshia, Nahawand Alzenatia, Bader Banata, Bdour Alnimra., " Extraction of oil from uncrushed olives using supercritical fluid extraction method", The Journal of Supercritical Fluids 95, 512-518, 2014.
8. Awni Al-Otoom , Mohammad Al-Harahsheh , Mamdouh Allawzi , Sam Kingman, John Robinson, Adnan Al-Harahsheh , Abdurrahman Saeid., " Physical and thermal properties of Jordanian tar sand", Fuel Processing Technology 2, 174-180, 2013.

9. Adnan Al-Harashsheha, Awni Al-Otoom, Mohammad Al-Harashshehd, Mamdouh, Allawzi, Rida Al-Adamatb, Mohammed Al-Farajat , Omar Al-Ayede., " The leachability propensity of El-lajun Jordanian oil shale ash", JJEES 2, 29-34, 2012.
10. Sameer Al-Asheh, Mamdouh Allawzi, Awni Al-Otoom, Hussein Allaboun, Amani Al-Zoubi., " Supercritical fluid extraction of useful compounds from sage", Natural Science 8, 544-551, 2012.
11. Allawzi, M.A., Awni Al-Otoom, Hussein Allaboun, Abdulaziz Ajlouni and Fatima Al Nseirat., " CO2 supercritical fluid extraction of Jordanian oil shale utilizing different co-solvents", Fuel Processing Technology 10, 2016-2023, 2011.
12. Allaboun, H.,Allawzi, M.,Al-Otoom, A.,Abu Al-Rub, F.A., " Effect of particle size on the alkaline leaching behavior of low grade uranium ", International Multidisciplinary Scientific GeoConference SGEM2011, Bulgaria, 1, 1131-1138, 2011.
13. Allawzi,M.A and Al-Asheh, S., " Use of Jordanian Natural Zeolite as Sorbent for Removal of Cadmium from Aqueous Solutions", Desalination and Water Treatment Science and Engineering Journal 1-3, 349-354, 2010.
14. Awni Al-Otoom, Mamdouh Allawzi, Naser Al-Omari, Emad Al-Hsienat., " Bitumen recovery from Jordanian oil sand by froth flotation using petroleum cycles oil cuts", Energy 10, 4217-4225, 2010.
15. Allawzi, M.A, Al-Asheh, S, Allaboun, H.R and borini., " Assessment of the Natural Jojoba Residues as Adsorbent for Removal of Cadmium from Aqueous Solutions", Desalination and Water Treatment Science and Engineering Journal 1-3, 60-65, 2010.
16. M. Allawzi, A. Al-Otoom, A. Ajlouni, F. Abu-Alrub, and M. Kandah, " Biodiesel Production from Waste Soybean Oil using Jordanian Oil Shale Ash", 1st International Nuclear and Renewable Energy Conference, 1st International Nuclear and Renewable Energy Conference, Amman, Jordan, 1, 1-6, 2010
17. Awni Al-Otoom, Mamdouh Allawzi, Adnan M. Al-Harashsheh, Mohammad Al-Harashsheh,Randa Al-Ghbari, Raeda Al-Ghazo, and Husam Al-Saifi., " A parametric study on the factors affecting the froth floatation of Jordanian tar sand utilizing a fluidized bed floatator", Energy 9, 1310-1314, 2009.
18. Adnan Al-Harashsheh, Mohammad Al-Harashsheh, Awni Al-Otoom and Mamdouh Allawzi., " Effect of demineralization of El-lajjun Jordanian oil shale on oil yield, Fuel Processing Technology 6, 818-824, 2009.
19. Allawzi, M. A., Kandah. M. I., "Parametric Study on the Production of Biodiesel from Used Soybean Oil", European Journal of Lipid Science and Technology 8, 760-767, 2008.
20. Allawzi, M. A., Aljarrah, N. A ., "Study of the Effect of Steam Injection on Crude Oil Displacement Yield from an Oil Contaminated Soil Bed", Jordan Journal of Civil Engineering 3, 208-217, 2008.

21. Allawzi, M. A., Kandah. M. I., "Parametric Study on the Production of Biodiesel from Used Soybean Oil", *European Journal of Lipid Science and Technology*. Accepted, March, 2008.
22. Abu-Arabi, M. K., Allawzi, M. A., and Al-Zoubi, A. S., "Adsorption of Phenol from Aqueous Solutions on Jojoba Nuts Residue", *Chemical Engineering and Technology* 4, 493-500, 2007.
23. Allawzi, M. A., Abu-Arabi, M. K., and Al-Taher, F. A., "Parametric Study on the Batch Leaching Process of Jojoba Oil", *European Journal of Lipid Science and Technology* 107, 469-475, 2005.
24. Tawalbeh, M., Allawzi, M. A., and Kandah, M. I., "Production of Activated Carbon from Jojoba Seed Residue by Chemical Activation Using a Static Bed Reactor", *Journal of Applied Sciences* 5(3), 482-487, 2005.
25. Abu-Eisha, S. I., Bani-Kananeh, A. A., and Allawzi, M. A., "Potassium Sulfate Production Via the Double Decomposition Reaction of Potassium Chloride and Phosphogypsum", *Chemical Engineering Journal* 76, 197-207, 2000.
26. Abu-Arabi, M. K., Allawzi, M. A., Al-Zoubi, H. S., and Tamimi, A., "Extraction of Jojoba Oil by Pressing and Leaching", *Chemical Engineering Journal* 76, 61-65, 2000.
27. Allawzi, M. A., Abu-Arabi, M. K., Al-Zoubi, H. S., and Tamimi, A., "Physicochemical Characteristics and Thermal Stability of Jordanian Jojoba Oil", *Journal of American Oil Chemical Society* 75, 57-62, 1998.
28. El-Fadel M., Sadek S, Abu-El-Sha'r W, Rusan M, Mousa H, Al-Sharif M, Al-Ghazzawi Z, Al-Lawzi M, Vorst J, Lee L, Graveel G, Biegel C, (1998). "Teachers notes for Environmental Curriculum Development for University and Professional Education in the Middle East and the United States." United States Information Agency (USIA).
29. Al-Ghazzawi, Z., M. Al-Lawzi, C.M. Biegel, and J.G. Graveel. 1998. Cases in reclaiming petroleum contaminated land in the U.S. and Middle East. p. 4. *Agronomy Abstracts*, ASA, Madison, WI.
30. Sadek S, El-Fadel M, Graveel G, Lee L, Moussa H, Al-Lawzi M, Abu-El-Sha'r W, (1998). "Managing Solid Waste Landfills: Case Studies from the US and the Middle-East." ASA, CSAA, SSSA, Annual Meeting, Baltimore, Maryland, 18-22 October 1998.
31. Allawzi, M.A., "Simulation of Thermal Enhanced Oil Recovery of Jordanian Oil from Hamza Oil Field by In-Situ Combustion and Steam injection methods", *The Higher Council for Science and Technology*, Amman, Jordan, 1998.
32. Allawzi, M.A., Mahasneh, M., Haddad, R.N., "Simulation of Thermal Enhanced Oil Recovery of Jordanian Heavy Oil by In-Situ Combustion", *Jordanian Chemical Engineering Conference II*, Vol II, 532-550, 2-4 September 1996.

33. Allawzi, M.A., Patton, J. T., "Thermal Stability of Foam Additive in Steam flood Core Tests", Society of Petroleum engineer/Department of Energy Improved Oil Recovery Symposium 87-97, Tulsa, Oklahoma, 17-20 April 1994.

## **MASTER THESIS:**

1. Nader Rawhi Haddad, "Thermal Enhanced Oil Recovery of Jordanian Oil using In-Situ Combustion Methods," Master Thesis, JUST, 1996
2. Habis Said Al-Zoubi, "Characteristics Study of Jordanian Jojoba Oil," Master Thesis, JUST, 1996.
3. Nabil A. Harrah, "Investigation of Thermal Enhanced Oil Recovery of Jordanian Oil using Steam Injection Methods," Master thesis, JUST, 1997.
4. Amjad Saleh Qazaq, "Investigation the formulation and Emulsion Stability of Some Pesticide Solutions," Master Thesis, JUST, 1997.
5. Ali A. Bani Kananeh, "Kinetics of the Production of Potassium Sulfate Via Double Decomposition Reaction of Potassium Chloride and Phosphogypsum," Master Thesis, JUST, 1997.
6. Faraj Ali Al-Taher. "Parametric Study on Batch Leaching Process of Jojoba Oil," Master Thesis, JUST, 1997.
7. Ahmad Said Al-Zou'b, "Adsorption of Phenolic Compounds from Aqueous Solution onto New Adsorbents," Master Thesis, JUST, 1997.
8. Mohammad Tawalbeh, "Production of Activated Carbon from Jojoba Residue and Evaluation of its Adsorptive Capacity," Master Thesis, JUST, 2000.
9. Omar Mohammad Al-Qudah, "Evaluation of Medical Wastes Disposal Methods and Their Applications in Jordan". Master Thesis, JUST, 2000.
10. Imad Husseinat, "Beneficiation of Bitumen Recovery from Jordanian Tar Sand" , M. S. Thesis ,JUST, 2008.
11. Amani Al-Zoubi, "Extraction of active ingredients from local herbs by supercritical extraction, JUST, 2009.
12. Fatima Nseirat, "Extraction of oil from oil shale by CO<sub>2</sub> supercritical extraction", M. S. Thesis, JUST, 2009.
13. Sahar Nasrallah, "Enhancement of mixing in lid driven bio-reactor with continuous flow from the inlet and outlet ports", JUST, 2018.
14. Baraa Al-Khateeb, "Extraction of Persistent Organic Pollutants in Textile Wastewater effluents using a high-frequency Ultrasound reactor", JUST, 2020.

15. Muhammad Dudin,” Modeling and Simulation of the Diethyl Oxalate Process using Coupling-Regeneration Reactions”, JUST, 2021.
16. Heba Nawafleh,” Separation of uranium from the leaching solution of central Jordanian ore using an ion-exchange process, JUST, 2022.