


# MOHAMMAD ALDEKHEEL

Assistant Professor

Kuwait 

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## EDUCATION

### **Doctor of Philosophy (Ph.D.) in Environmental Engineering | University of Southern California**

August 2022 – June 2024

GPA: 4.0

**Dissertation:** “Assessing Indoor and Outdoor Air Quality by Characterizing the Physicochemical and Toxicological Properties of Particulate Matter Using Well-Developed Sampling Technologies and Multivariate Statistical Analysis”

### **Master of Science (M.S.) in Civil Engineering | University of Southern California**

August 2021 – December 2022

GPA: 4.0

### **Bachelor of Science (B.S.) in Civil Engineering | Kuwait University**

September 2014 – May 2018

Overall GPA: 4.0

Major GPA: 4.0

Dean's list 2014 -2018



## PROFESSIONAL EXPERIENCE

### **Assistant Professor | Kuwait University**

July 2024 – Present

Sabah Alsalem University City, College of Engineering and Petroleum

### **Civil Engineer | Mabanee Company**

November 2018 – June 2021

The Avenues Mall, Alrai, Kuwait



## RESEARCH INTEREST

- Aerosol Science
- Particulate Matter (PM) Source Apportionment
- Particulate Matter (PM) Toxicity
- Environmental Health Risk Assessment
- Air Pollution Control
- Indoor Air Quality
- Real-Time Monitoring



## PEER-REVIEWED JOURNAL PUBLICATIONS

- Aldekheel, M., Altuwayjiri, A., Tohidi, R., Jalali Farahani, V., & Sioutas, C. (2022). The Role of Portable Air Purifiers and Effective Ventilation in Improving Indoor Air Quality in University Classrooms. *International Journal of Environmental Research and Public Health*, 19(21), 14558. <https://doi.org/10.3390/ijerph192114558>
- Aldekheel, M., Farahani, V. J., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2023). Development and performance evaluation of a two-stage cascade impactor equipped with gelatin filter substrates for the collection of multi-sized particulate matter. *Atmospheric Environment*, 294, 119493. <https://doi.org/10.1016/j.atmosenv.2022.119493>
- Badami, M. M., Tohidi, R., Aldekheel, M., Farahani, V. J., Verma, V., & Sioutas, C. (2023). Design, optimization, and evaluation of a wet electrostatic precipitator (ESP) for aerosol collection. *Atmospheric Environment*, 308, 119858. <https://doi.org/10.1016/j.atmosenv.2023.119858>
- Aldekheel, M., Farahani, V. J., & Sioutas, C. (2023). Assessing Lifetime Cancer Risk Associated with Population Exposure to PM-Bound PAHs and Carcinogenic Metals in Three Mid-Latitude Metropolitan Cities. *Toxics*, 11(8), 697. <https://doi.org/10.3390/toxics11080697>
- Aldekheel, M., Tohidi, R., Al-Hemoud, A., Alkudari, F., Verma, V., Subramanian, P. S. G., & Sioutas, C. (2024). Identifying urban emission sources and their contribution to the oxidative potential of fine particulate matter (PM<sub>2.5</sub>) in Kuwait. *Environmental Pollution*, 343, 123165. <https://doi.org/10.1016/j.envpol.2023.123165>
- Aghaei, Y., Aldekheel, M., Tohidi, R., Badami, M. M., Jalali Farahani, V., & Sioutas, C. (2024). Development and performance evaluation of online monitors for near real-time measurement of total and water-soluble organic carbon in fine and coarse ambient PM. *Atmospheric Environment*, 319, 120316. <https://doi.org/10.1016/j.atmosenv.2023.120316>

- Aghaei, Y., Badami, M. M., Aldekheel, M., Tohidi, R., & Sioutas, C. (2025). Seasonal characterization of primary and secondary sources of fine PM-bound water-soluble organic carbon in central Los Angeles. *Atmospheric Environment*, 346, 121084. <https://doi.org/10.1016/j.atmosenv.2025.121084>
- Alramzi, Y., Aghaei, Y., Badami, M. M., Aldekheel, M., Tohidi, R., & Sioutas, C. (2025). Urban emissions of fine and ultrafine particulate matter in Los Angeles: Sources and variations in lung-deposited surface area. *Environmental Pollution*, 367, 125651. <https://doi.org/10.1016/j.envpol.2025.125651>



## PEER-REVIEWED CONFERENCE PUBLICATIONS

- Alkudari F., Alkhaledi A., Aldekheel M., Abdullah W., Parol J. (2019). Sustainability of Existing Structures in Kuwait Subjected to Earthquake Loadings. *Challenges in Developing Sustainable Infrastructure Conference 2019*.



## CONFERENCE PRESENTATIONS

- Alkudari, F., Alkhaledi, A., Aldekheel, M., & Abdullah, W. (2019). Seismic effects on liquefaction potential in Kuwait. Presented at the Gulf Conference on Sustainable Built Environment (GCSBEKW-2019), Kuwait. Abstract published.
- Alkudari, F., Alkhaledi, A., Aldekheel, M., Abdullah, W., & Parol, J. (2019). Sustainability of Existing Structures in Kuwait Subjected to Earthquake Loadings. Presented at the Challenges in Developing Sustainable Infrastructure Conference, Kuwait. Abstract published.
- Aldekheel, M., Tohidi, R., Jalali Farahani, V., Altuwayjiri, A., & Sioutas, C. (2022). Indoor air quality assessments in densely seated classrooms under realistic conditions: A focus on the role of mobile air purifiers. Presented at the International Aerosol Conference, Athens, Greece. Abstract published.
- Aldekheel, M., Jalali Farahani, V., Altuwayjiri, A., & Sioutas, C. (2022). Development and evaluation of a high-volume cascade impactor for collecting fine and ultrafine particulate matter on gelatin filters. Presented at the International Aerosol Conference, Athens, Greece. Abstract published.
- Aldekheel, M., Tohidi, R., Jalali Farahani, V., Altuwayjiri, A., & Sioutas, C. (2022). Improving indoor air quality in university classrooms by employing air purifiers and effective ventilation. Presented at the 1st Annual Astani Research Symposium, University of Southern California, Los Angeles, CA, USA. Abstract published.

- Aldekheel, M., Jalali Farahani, V., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2022). Development and evaluation of a multi-stage cascade impactor for the collection of ambient particulate matter on gelatin substrates. Presented at the 40th American Association for Aerosol Research Conference, Raleigh, NC, USA. Abstract published.
- Aldekheel, M., Jalali Farahani, V., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2022). High-volume cascade impactor development for ambient particle collection on gelatin substrates. Presented at the 7th European Congress on Advanced Nanotechnology and Nanomaterials, Rome, Italy. Abstract published.
- Aldekheel, M., Altuwayjiri, A., Tohidi, R., Jalali Farahani, V., & Sioutas, C. (2023). Employing air purifiers and ventilation strategies to improve indoor air quality in classrooms. Presented at the International Summit on Public Health and Preventive Medicine, Belgium. Abstract published.
- Aldekheel, M., Jalali Farahani, V., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2023). High-flow-rate cascade impactor for the collection of particulate matter on gelatin filters. Presented at the 26th ETH Nanoparticles Conference (NPC23), Zurich, Switzerland. Abstract published.
- Aldekheel, M., Altuwayjiri, A., Tohidi, R., Jalali Farahani, V., & Sioutas, C. (2023). Indoor air quality enhancement in university classrooms using air purifiers. Presented at the 12th Environmental Science and Pollution Control Congress, Paris, France. Abstract published.
- Aldekheel, M., Jalali Farahani, V., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2023). Development and evaluation of a high-volume cascade impactor for fine and ultrafine particulate matter collection. Presented at the 8th International Conference on Health and Safety Issues in Grenoble, France. Abstract published.
- Aldekheel, M., Tohidi, R., Jalali Farahani, V., & Sioutas, C. (2023). Efficacy of portable air purifiers and mechanical ventilation filters in controlling indoor air pollution in classrooms. Presented at the 7th International Consortium on Prevention & Infection Control (ICPIC), Geneva, Switzerland. Abstract published.
- Aldekheel, M., Jalali Farahani, V., Tohidi, R., Altuwayjiri, A., & Sioutas, C. (2023). Development and evaluation of a cascade impactor equipped with gelatin filters for particulate matter collection. Presented at the 8th European Congress on Advanced Nanotechnology and Nanomaterials, London, UK. Abstract published.
- Aldekheel, M., Tohidi, R., & Sioutas, C. (2023). Identifying urban emission sources of fine particulate matter in Kuwait. Presented at the Southern California Civil and Environmental Engineering Research Symposium (SoCal CEERS), Los Angeles, CA, USA. Abstract published.

- Aldekheel, M., Altuwayjiri, A., Tohidi, R., Jalali Farahani, V., & Sioutas, C. (2023). Enhancing indoor air quality using air filtration technologies in university classrooms. Presented at the International Experts Summit on Public Health and Precision Medicine, Nice, France. Abstract published.



## SOFTWARE AND PROGRAMMING

- Statistical Package for Social Science (SPSS) software
- AutoCAD
- Staad Pro software
- Primavera program
- C++ programming
- Microsoft Office (Word, Excel, PowerPoint)



## SKILLS

- Time Management
- Student Mentorship and Advising
- Academic Writing and Publication
- Engaging Lecturing Techniques
- Instructional Expertise



## LEADERSHIP & EXTRACURRICULAR ACTIVITIES

### **Vice President | American Society of Civil Engineers**

January 2018 – June 2018

Khaldiya - Kuwait University

### **Treasurer | American Society of Civil Engineers**

June 2017 – January 2018

Khaldiya - Kuwait University

### **Member | American Society of Civil Engineers**

February 2017 – June 2017

Khaldiya - Kuwait University



## CONFERENCE ORGANIZATION

- Organized ASAS Conference, Kuwait (April 2017) as part of the American Society of Civil Engineers (ASCE) Kuwait University Chapter.



## WORKSHOPS AND SEMINARS

- Leadership in Energy and Environmental Design (LEED) Workshop (January 2018).
- Construction Sustainability Considerations for Sheikh Jaber Al Ahmad Al Sabah Project Seminar (April 2019).
- Fundamentals of Structural Health Monitoring with Novel Applications Workshop (March 2019).
- Sustainable Infrastructures of World Cup 2022, Qatar Seminar (April 2019).



## LANGUAGES

- Arabic
- English



## CONSTRUCTION PROJECTS

### **Hilton Garden Inn Hotel, the Avenues Mall, Kuwait**

Civil Engineer in the Project Management Department – Mabanee Company

### **Waldorf Astoria Hotel, the Avenues Mall, Kuwait**

Civil Engineer in the Project Management Department – Mabanee Company



## HONORS & AWARDS

- **KFAS Award – Best Civil Engineering Design Project**  
Kuwait Foundation for the Advancement of Sciences (KFAS), June 2018.
- **Presidential Honor – Kuwait University Graduation Ceremony**  
Recognized by the President of Kuwait, Sheikh Sabah Al-Ahmad Al-Sabah, for outstanding academic achievement among top students, March 2019.
- **Departmental Honor – First Kuwaiti Civil Engineering Graduate with a 4.0 GPA**  
Awarded by the Civil Engineering Department Chair, Kuwait University, May 2018.

- **Monjez Award – Ministry of State for Youth Affairs**  
Recognized for outstanding academic achievement among top students in Civil Engineering, December 2018.
- **Certificate of Gratitude – American Society of Civil Engineers (ASCE)**  
For active participation and contributions to the ASCE Student Chapter, June 2018.
- **Kuwait University Fully-Paid Scholarship – M.S. and Ph.D. Degrees**  
Awarded to pursue graduate studies in Civil and Environmental Engineering at the University of Southern California (USC), July 2021.