Prof. Arwa Walid Salim Abdelhay
✉ Amman-Jordan

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Jordanian

Curriculum vitae

Education

- **PhD: University of Grenoble (France)**

2005-2008 **PhD in Chemical engineering/Process Engineering**

Thesis title: Development of a two-phase partitioning bioreactor TPPB for Phenanthrene degradation by Mycobacterium sp. 6PY1.

- **MSc: University of Science and Technology (Jordan)**

2001-2003 **MSc in Chemical engineering**.

Thesis title: Extending the Shelf life of Urea Formaldehyde Resin Using Anti-Oxidants

- **BSc: University of Science and Technology (Jordan)**

1996-2001 **BSc in Chemical engineering.**

- **Professional Diploma (18 months): IHE Delft (Netherland)**
  May 2020-September 2022 **Humanitarian Water, Sanitation, and Hygiene**

Academic Experience

- ***Professor: February 2021 up-to-date:*** Civil and Environmental Engineering department-**German Jordanian University**- Jordan.
- ***Associate professor: February 2017-February 2021:*** Civil and Environmental Engineering department-**German Jordanian University**- Jordan.
- ***Assistant professor October* 2010- *February 2017***: Water and Environmental Engineering department-**German Jordanian University**- Jordan.
- ***Assistant professor*: *October 2009- October 2010*:** Department of chemical engineering- Joseph Fourier University-**France.**

- ***Full Time lecturer*: *November 2008*- October 2009:** Department of process and environmental engineering- National Institute of Applied Sciences INSA de Lyon-**France.**

- **Doctoral Teacher assistant***: 2007/2008: Department of process engineering*-Grenoble Polytechnic Institute (INPG)-**France.**

- ***Teacher Assistant*** February ***2001-September 2003***: Department of chemical engineering- University of Science and Technology-**Jordan.**

Taught courses

Undergraduate courses

- Biotechnology engineering
- Introduction to Environmental Engineering
- Heat and mass transfer
- Fluid mechanics
- Unit operations
- Air pollution control
- Water and Environmental chemistry
- Chemistry for Engineers

Master courses

- Sanitation and Public health
- Advanced water and wastewater treatment
- Technical Essentials: Water and Sanitation
- Humanitarian system and concepts
- Humanitarian WASH project cycle management

Administrative experience

Administrative positions

- **Dean, School of Natural Resources Engineering and Management**: Sept. 2019 up to Sept. 2021- German Jordanian University
- **Vice Dean, School of Natural Resources Engineering and Management**: Oct 2016 up to 2019- German Jordanian University
- **Chair, Water and Environmental Engineering:** Jul 2012 to Sep. 2014- German Jordanian University
- **Chair, Civil and Environmental Engineering:** Oct 2016 to Oct. 2018- German Jordanian University

- **Exchange Coordinator**, **Water and Environmental Engineering:** 2010/2011- German Jordanian University

Membership

Member of the Scientific Research and Innovation Fund (SRISF)- Water and Environmental Committee **(2019 and 2022)**

Member of the Technical Advisory Group TAG of "Incorporating Research into Practice: WASH in Humanitarian Response" Project funded by USAID/BHA

Committees

Representative of the Middle East and North Africa (MENA) in the global steering committee of the Sustainable Sanitation Alliance (SuSanA).

Representative of the German Jordanian University in the Global WASH cluster (GWC)

Projects

2022-2025 "Boosting Nexus Framework Implementation in the Mediterranean BONEX" **funded by PRIMA**

Role: Project Team Member

2021-2023 Supporting Circular Economy Opportunities for Employment and Social Inclusion SIRCLES. **Funded by ENI-CBC** through EDAMA Association.
Role: Project Coordinator

2018-2021 "Humanitarian Water, Sanitation and Hygiene MSc. program" **funded by OFDA/USAID &UNICEF**.
Role: Administrative project coordinator

2018-2021 "Integrated Water Resources Management IWRM" in collaboration with university of Cologne. **Funded by DAAD**.
Role: Project Team Member

2018-2019 "Climate-resilient Water Management" in cooperation with Koblenz University. **Funded by DAAD**
Role: Academic project coordinator.

2019 "Environmental assessment of Irbid vegetables and fruit wholesale market project" Funded by **World Bank**

Role: Project team member.

2019 "Installation and implementation of a pilot plant for the treatment of olive mill wastewater in Jordan cost efficient and environmentally sustainable project" in cooperation with TIA company and Rostock University **funded by TIA and DEG**.

Role: Project team member.

2018 "Water Security in Jordan: from Data to Decision" DLR Project in cooperation with Institute for Technology and Resources Management in the Tropics and Subtropics (ITT), TH Köln. **Funded by BMBF**

Role: Project team member.

2018-2020 "Waste to positive energy" Project), Universities Cooperation with Jordanian Universities in frame of Supporting Refugees Hosting Communities in Sector of Waste Management, in cooperation with Rostock university, Hamburg university, and Dresden university. **Funded by DAAD/(GIZ)**

Role: Project team member.

2008/2009 'Installation of bioactive bulk wastes of new generation' **Funded by EU**. INSA de Lyon-France

Role: Project team member

RESEARCH PROJECTS

2015-2016 'Destruction of Persistent Organic Pollutants (POPs) in wastewater using ultrasonic irradiation' **German Jordanian University Seed Fund**
Role: Principal Investigator

2015-2016 "Development of eco-efficient porous filters and membranes via a novel hybrid milling-molding process for potential water purification application" **German Jordanian University Seed Fund**

Role: Project team member

Publications

JOURNAL PAPERS

Abdelhay A, Magnin JP, Gondrexon N, Baup S & Willison JC **(2008)** Optimization and modeling of phenanthrene degradation by *Mycobacterium sp*. 6PY1 in a biphasic medium using response-surface methodology. Appl Microbiol Biotechnol **78**:881-888

Abdelhay A, Magnin JP, Gondrexon N, Baup S & Willison JC **(2009)** 'Adaptation of a *Mycobacterium* strain to phenanthrene degradation in a biphasic culture system: influence on interfacial area and droplet size.' Biotechnol lett **31**:57-63.

H. Benbelkacem, R. Bayard, **A. Abdelhay**, Y. Zhang, R. Gourdon **(2010)** 'Effect of leachate injection modes on municipal solid waste degradation in anaerobic bioreactor' Bioresource Technol **101:** 5206–5212.

Abdelhay A, Magnin JP, Gondrexon N, Baup S & Willison JC **(2011)** 'Enhancement of mass transfer characteristics and phenanthrene degradation in Two-Phase Partitioning Bioreactor equipped with internal static mixers'.Biotechnol. and bioprocess engineering **16 (2)**: 413-418.

Abeer Al bsoul , Lua'y Zeatoun, **Arwa Abdelhay**, Mahdi Chihad **(2014)** 'Adsorption of Copper Ions from Water by Different types of Natural Seed Materials' Desalination and Water Treatment. **52**: 5876-5882

A. Abdelhay, E. Abdulhay, L. Zeatoun, B. Albiss **(2015)** 'Adsorption based model for single-wall carbon nanotube SWNT response to NO2 gas.' Adsorption Science and Technology **33**(1): 37-43.

A.Abdelhay, A. Albsoul, F. Hadidi, A. Abuothman **(2016)** 'Optimization and Modeling of Biogas Production From Green Waste/Biowaste Co-Digestion Using Leachate and Sludge.' Clean Soil Air Water. 44(11) 1557–1563.

E. Abdulhay, **A. Abdelhay**, Aya Kilani, Lana Al-Shwiat, Salam Al-Rousan **(2016)** 'Development of arduino based low cost neuro-feedback applied to ADHD' Biomedical Research **27**(4): S31-S37.

A. Abdelhay, Abeer Al Bsoul, Amani Al-Othman, Nada M. Al-Ananzeh, Ahmed A. Al-Taani **(2017)** 'Kinetic and thermodynamic study of phosphate removal from water by adsorption onto (Arundo donax) reeds**'.** Adsorption science and technology.36(1-2) 46-61.

I. Jum'h, **A. Abdelhay**, H. Al-Ta'ani1, A. Telfah, M. Alnaief, S. Rosiwal **(2017) '**Fabrication and applicatio of boron doped diamond BDD electrode in olive mill wastewater treatment in Jordan' Journal of water reuse and desalination. 7(4) 502-510.

Enas Abdulhay, Maha Al-Afeef, **Arwa Abdelhay** Areen Al-Bashir **(2017)** 'Classification of Normal, Ictal and Inter-ictal EEG via Direct Quadrature and Random Forest Tree' DOI 10.1007/s40846-017-0239-z.

Arwa Abdelhay, Inshad Jum'h, Enas Abdulhay, Akeel Al- Kazwini, Mashael Alzubi **(2017)** 'Anodic oxidation of Poultry slaughterhouse waste water on boron doped diamond electrode: process variables. Water Science and Technology Journal. 76(12) 3227-3235.

Abeer Al Bsoul, Mohammad Hailat, **Arwa Abdelhay**, Muhammad Tawalbeh, Inshad Jum'h, Khalid Bani-Melhem **(2019)** 'Treatment of olive mill effluent by adsorption on titanium oxide nanoparticles' Science of the Total Environment. 688 : 1327-1334

Ruba Khnouf; Dina Karasneh; Enas Abdulhay; **Arwa Abdelhay**; Weian Sheng; Hugh Fan **(2019)** 'Evaluation and Mathematical Modeling of a Microfluidics-enabled Blood Viscometer for the Diagnosis of Hematological and Cardiovascular Diseases. Biomedical Microdevices.21(80) :1-10 DOI : 10.1007/S10544-019-0426-5.

Arwa Abdelhay, Inshad Jum'h, Abeer Albsoul, Dina Al Tarazi **(2019)** 'Dairy Wastewater Remediation Using Electrochemical Oxidation on Boron Doped Diamond Anode (BDD)' Desalination and Water Treatment. 171:177–182

Arwa Abdelhay, Aya Allafi, Abeer Albsoul **(2020)** Optimization of ibuprofen degradation in water using high frequency ultrasound-assisted biological reactor, Water Sci. Technol. 81(10): 2250-2259. https://doi.org/10.2166/wst.2020.291

Suhaib G. Abunaser, **Arwa Abdelhay (2020)** Performance of a novel vertical flow constructed wetland for greywater treatment in rural areas in Jordan. Environmental Technology. https://doi.org/10.1080/09593330.2020.1841832.

Abdelhay Arwa., Abunaser G. Suhaib **(2021)** Modeling and Economic Analysis of Greywater Treatment in Rural Areas in Jordan Using a Novel Vertical-Flow Constructed Wetland. Environmental Management. 67 (3) : 477-488 https://doi.org/10.1007/s00267- 020-01349-7

Arwa Abdelhay, Abeer Abu Othman & Abeer Albsoul **(2021)**: Treatment of slaughterhouse wastewater using high-frequency ultrasound: optimization of operating conditions by RSM, Environmental Technology, 42(26) 4170-4178 DOI: 10.1080/09593330.2020.1746409

Arwa Abdelhay, Lilian Al-Hasanat, Abeer Albsoul **(2021)** Anaerobic co-digestion of cattle manure and raw algae: kinetic study and optimization of methane potential by RSM. Polish journal of environmental studies 30(2):1029–1037.

Arwa Abdelhay, Inshad Jum'h, Abeer Albsoul, Dina Abu Arideh, Bahaa Qatanani **(2021)** Performance of electrochemical oxidation over BDD anode for the treatment of different industrial dye-containing wastewater effluents. Journal of water reuse and desalination. 11 (1): 110–121 https://doi.org/10.2166/wrd.2020.064

A Al Bsoul, M Hailat, **A Abdelhay**, M Tawalbeh, A Al-Othman, AA Al-Taani **(2021)** The Science of the total environment 826, 154308 Efficient removal of phenol compounds from water environment using Ziziphus leaves adsorbent Sci. Total Environ. 826, 154308

Mohammad M. Hamed; Munjed Al-Sharif; **Arwa W. Abdelhay**; Mo'ayyad Shawaqfah; Abeer Abu Othman **(2021)**. Integrated modelling of tap water perception and consumption of bottled water: An exploratory analysis. https://doi.org/10.1061/(ASCE)IS.1943-555X.0000661

A Abdelhay, MA Allawzi, B Al-Khateeb, A Albsoul, AA Othman **(2022)** 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 (6), 1-18.

Arwa Abdelhay, Amro Al-Hroub, Munjed Al Sharif **(2022)** Techno-economic assessment of waste sorting scenarios Regional Case study: Madaba sorting plant, Jordan. Journal of Material Cycles and Waste Management. https://doi.org/10.1007/s10163-022-01543-1.

CONFERENCE PAPERS

Abdelhay A, Magnin JP, Gondrexon N, Baup S & Willison JC **(2009)** 'Enhancement of mass transfer characteristics and phenanthrene degradation in Two-Phase Partitioning Bioreactor equipped with internal static mixers'. accepted : the conference of 'la Société Française de Génie des Procédés'

Enas Abdulhay, **Arwa Abdelhay**, Borhan Aldeen Albiss, Rami Oweis, 'Non-linear modeling of the dynamic response of single-wall carbon nanotube SWNT composites to NO2 gas in air' accepted in ICMTA: International Conference on Materials Technology and Applications 10/**2016**-Singapore. Materials Science Forum: Volume: Nano Engineering and Materials Technologies pages 91-96.

Inshad. Jum'h, **Arwa. Abdelhay**, Ahmad. Telfah, Bernd. Kofer, Stefan. Rosiwal **(2017)** 'Veratric acid removal from water by electrochemical oxidation on BDD anode'. ICAM 2017 conference proceeding Journal: IOP Conf. Series: Materials Science and Engineering 305 (2018) 012021 doi:10.1088/1757-899X/305/1/012021

Training Courses

DELIVERED COURSES

Title	Awarding Institution/Agency	Date
Visiting Professor	**Summer Academy** program DAAD , Ostfalia University-Suderberg, Germany.	Summer 2013
Visiting Professor	**Train Of the trainer** program DAAD/ GJU, , Ostfalia University, Germany	Summer 2013
Lecturer	**Training course**: Water Quality Control: methods of measurement to :Libyan water authority employees	Winter 2014
Visiting Professor	**DAAD** Scientific Award for research **, ISAS (Leibniz-Institute for Analytical science), Dortmund Germany**	Summer 2016
Lecturer	online course: Introduction to drinking water treatment :Edraak/edX	12/2016
Visiting Professor	**Train Of the trainer** program DAAD/ GJU, Hochschule Ostwestfalen-Lippe, Germany	Summer 2017

ATTENDED TRAINING COURSES

Courses	Awarding Institution/Agency	Date
Engineers training	***Natural Resources Authority***	2004
Engineers training	***Ministry of Environment***	2004
Decentralized wastewater management for climate	**GIZ**	2018

change adaptation in Jordan		
ISO9001:2015	**American Institute of Professional Diploma**	48 hours March 2018
Train of the Trainer Induction in Humanitarian Water Sanitation and Hygiene WaSH	**USAID, UNICEF, AND BIOFORCE INSTITUTE**	2019

OTHER ACTIVITIES

- Evaluator for the Jordan Environment fund for grants application in the area of Solid waste treatment and management.
- Reviewer for many peer reviewed journals

LANGUAGES:

Arabic (Mother language)
English (Fluent)
French (Fluent)
German (Beginner).