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Associate Professor of Environmental Engineering
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Gender: Female

PATENT

Abu-Ghunmi N. L. (2023). Industrial process to sustain virgin-olive-oil production by converting olive fruit constituents into marketable products: water, dehydrated-solid and virgin-olive-oil. European patent office; Patent number: EP3956424 B1: Application number: 20863014.5. <https://data.epo.org/publication-server/document?iDocId=7196819&iFormat=0>

EDUCATION:

PhD in Environmental Engineering, June -2009, Wageningen University/ the Netherlands; Dutch Government Scholarship “NUFFIC”/ the Netherlands

M.Sc. in Civil engineering/ Environment and water resources, February-2002, University of Jordan/ Jordan; Graduate Studies Scholarships / University of Jordan/Jordan

B.Sc.in Chemical Engineering, February-1999, University of Jordan/ Jordan; Ministry of Higher Education Scholarships

EMPLOYMENTS:

Associate Researcher (Associate Professor), water energy and environment center, The University of Jordan, Jordan, 2016 till present

Assistant Researcher, water energy and environment center, The University of Jordan, Jordan, 2009-2016

Part-time Lecturer, Faculty of engineering, The University of Jordan, Jordan, 2009 -2012

PhD candidates, Wageningen university / the Netherlands; 2005-2009

Assistant research, water energy and environment center, The University of Jordan, Jordan, 2002-2005

RESEARCH INTERESTS:

Waste management, Circular Economy, Green Development and sustainability. Special interest on domestic and industrial wastewater related issues that includes treatment, management, reuse, sustainability and circular economy

RESEARCH “PROJECTS”:

Sustainability of Olive Oil Industry in Jordan: Moving Olive Mills toward Circular Economy, The University of Jordan/Jordan, 2022-2025 [Principal Investigator]

Water Footprint Analysis as Tool for Water Better Management in Jordan, The University of Jordan/Jordan, 2020-2022 [Co- Investigator]

Natural Based Nano-Composite for treatment of surfactants polluted water, The University of Jordan/Jordan, 15,000 EU, 2016-2018 [Principal Investigator]

Minimizing Risk of Hazard By Using Nanotechnology For Water Disinfection”. USAID, 2015-2016 [Principal Investiagtor]

Developing a bio-zeolite filter for treatment of surfactants in grey water. TWAS, 2015-2016 [Principal Investiagtor]

Expanding access to sanitation for unsewered communitis in Middel East and North Africa Countires. USAID. 2013-2015 (Principal Investiagtor)

Treatment of grey water by zeolite, [Principal investigator] funded by Deanship of Academic Research, The University of Jordan/ Jordan; 2011-2013

Role of Fungi in treatment of water-polluted by surfactants, [Principal investigator] funded by Scientific research support fund/ Jordan; 2012-2013.

The economic environmental and social sustainability of wastewater treatment plants in Jordan. Funded by Deanship of Academic Research, the University of Jordan/ Jordan; 2013-2014

Characterization and treatment of grey water; options for (re)use, [Principal investigator] funded by the Dutch government "Nuffic". My Ph.D research project at Wageningen university/ the Netherlands; 2005-2009

Cost effective treatment technology for reuse of reclaimed domestic wastewater in Irrigation, funded by European Union; Joint project between The Netherlands, Ireland Jordan, and Egypt, 2002-2005

Investigating the potential of SBR technology in treatment of textile wastewater, Deanship of Academic Research, the University of Jordan/ Jordan; 2002-2002

TEACHING EXPERIENCE:

Environmental Issues and Water Management Policies in the Middle East: B.Sc. course, joint program of The University of Jordan/ Middlebury college / USA [2012-2013] one semester

Water supply: B.Sc. course, Civil Engineering Department, Faculty of Engineering and Technology, University of Jordan [2012-2013] one semester

Water supply: M.Sc. course, Water Integrated Resources Management program, joint program of The University of Jordan/ Jordan and Collon University/ Germany [2009-2016] four semesters

Water treatment processes and technology: M.Sc. course Department of Land and Water Resources Engineering, Royal Institute of Technology-KTH. Stockholm. [2012] One semester

Air pollution: M.Sc. course, Civil Engineering Department, Faculty of Engineering and Technology, University of Jordan [2009-2010] one semester

Numerical methods for Engineers: M.Sc. course, Civil Engineering Department, Faculty of Engineering and Technology, University of Jordan [2010-2011] one semester

Technical writing: B.Sc. course, Industrial Engineering Department, Faculty of Engineering and Technology, University of Jordan [2009-2011] for semesters

INTERNATIONAL EXPERIENCE AND HONORS:

Visiting Researcher, Mexico Government scholarship for academic staff exchange, Department of Environmental Engineering, Autonomous University of San Luis Potosi, San Luis Potosi state, Mexico, 1st October, 2019 to 1st November, 2019.

Coordinator since 2018, of partnership of the university of Jordan in the international network of Center of Natural Resources and Development, funded by DAAD.

Visiting Lecturer, Erasmus+ Project/ EU fund for academic staff exchange, Department of Chemical Engineering Department, Lund University, Lund, Sweden, 21st to 25th/ May/ 2018

Visiting Lecturer, Erasmus+ Project/ EU fund for academic staff exchange, Department of Environmental Engineering, Ataturk University, Erzurum, Turkey, 9th to 14th/ April/ 2017

Post-doctoral research, Islamic Development Bank fund, School of Industrial Engineering and Management, Department of Production Engineering, Royal Institute of Technology-KTH. Stockholm, Sweden, 2015/ 2016

Visiting researcher, USAID fund, Department of Material and nano-physics, Royal Institute of Technology-KTH. Stockholm, Sweden, August-September- 2015

Visiting researcher and lecturer, Erasmus Mundus/ JOSYLEEN project/ Academic staff exchange, Department of Land and Water Resources Engineering, Royal Institute of Technology-KTH. Stockholm, Sweden, 2-months 2011

Module developer of on-line grey water management module, UNESCO-IHE, Delft, as part of AskNest project in the period 2009 to 2011.

FUNDRAISING:

Sustainability of Olive Oil Industry in Jordan: Moving Olive Mills toward Circular Economy, *Grant of Deanship of Academic Research*, The University of Jordan/Jordan, JD18,200, 2022-2025 [Principal Investigator]

Water Footprint Analysis as Tool for Water Better Management in Jordan, *Grant of Deanship of Academic Research*, The University of Jordan/Jordan, JD18,000, 2020-2022 [Co- Investigator]

Natural Based Nano-Composite for treatment of surfactants polluted water, *Grant of Deanship of Academic Research*, The University of Jordan/Jordan, 15,000 EU, 2016-2019 (principal Investigator)

Minimizing Risk of Hazard By Using Nanotechnology For Water Disinfection". USAID. 18,842 \$, 2015-2018 (Principal Investigator)

Developing a bio-zeolite filter for treatment of surfactants in grey water. TWAS, \$ 10,000, 2015-2017 (Principal Investigator) and ***Grant of Deanship of Academic Research***, The University of Jordan/Jordan, 5,000 EU, 2015-2017 (principal Investigator)

Expanding access to sanitation for unsewered communities in Middel East and North Africa Countires. USAID. 35,400 \$, 2013-2015 (Principal Investigator)

The economic environmental and social sustainability of wastewater treatment plants in Jordan. *Grant of Deanship of Academic Research*, The University of Jordan/Jordan, 17,700 EU, 2013-2015 (Co-principal Investigator)

The role of Fungi in Treatment of water polluted by surfactants. *Grant of Scientific Research Support Fund*/ Jordan, 16,400 EU 2012-2014 (Principal Investigator).

The potential of zeolite in treating grey water. *Grant of Deanship of Academic Research*, The University of Jordan/Jordan, 15,000 EU, 2011-2014 (Principal Investigator)

AWARDS:

Mexico Government scholarship; A One-month International Academic Scholarships for academic staff exchange, Fund by Government of Mexico through the Mexican Agency for International Development Cooperation (AMEXCID) and the Association of Arab Universities (AAU). Environmental Engineering Department, Autonomous University of San Luis Potosi, San Luis Potosi state, Mexico, 1st October, 2019 to 1st November, 2019.

Erasmus+, EU fund for academic staff exchange, Chemical Engineering Department, Lund University, Lund, Sweden, 21st to 25th/ May/ 2018

Erasmus+, EU fund for academic staff exchange, Environmental Engineering Department, Ataturk University, Erzurum, Turkey, 9th to 14th/ April/ 2017

Islamic Development Bank; Post-doctorate research scholarship: Industrial and Manufacturing Engineering Department, Royal Institute of Technology, Stockholm, Sweden, December, 2015-November, 2016.

Erasmus Mendus, JOSYLEEN; EU fund for academic staff exchange, October-November/ 2011

Dutch Government Award; Nuffic, for PhD study: 2004-2009

University of Jordan; Graduate studies scholarship for M.Sc. study: 1999-2002

Ministry of Higher Education scholarship for B.Sc. study: 1994-1999

TRAINING COURSES: Trainer of the following courses

Course Title	Location	Hours
Primary and secondary treatment of wastewater	Yemen	20
Sludge treatment and disposal	Jordan	20
Sludge management and control	Yemen	20

PUBLICATIONS

Gunmi, M. A., Hu, F., Abu-Ghunmi, D., & **Abu-Ghunmi, L.** (2024). A smart home energy management system methodology for techno-economic optimal sizing of standalone renewable-storage power systems under uncertainties. *Journal of Energy Storage*, 85, 111072.

Ahogle, A. M. A., Korir, N. K., Houngnandan, P., **Abu-Ghunmi, L.**, & Letema, S. (2024). Bacterial hazards in urban stream irrigation in peri-urban interface of Nairobi-Machakos counties, Kenya. *International Journal of Environmental Studies*, 81(4), 1836-1852.

Abu-Ghunmi, D., **Abu-Ghunmi, L.**, Ahmad Khamees, B., Anderson, K. and Abu Gunmi, M. (2023). Green economy and stock market returns: evidence from european stock markets. *Journal of Open Innovation: Technology, Market, and Complexity*. 9(3): 2023: 100146: <https://doi.org/10.1016/j.oiotmc.2023.100146>.

Abu-Ghunmi N. L. (2023). Industrial process to sustain virgin-olive-oil production by converting olive fruit constituents into marketable products: water, dehydrated-solid and virgin-olive-oil. **European patent office: Patent number: EP3956424 B1: Application number:** 20863014.5. <https://data.epo.org/publication-server/document?iDocId=7196819&iFormat=0>.

Abu-Ghunmi, L., Alkhalwaldeh, M. and Alkhateeb, F. (2020). Determinants of linear alkylbenzene sulfonate destiny in the environment: a study of linear alkylbenzene sulfonate interactions with *Aspergillus niger*. *Desalination and water treatment*. 207(December): 197–204 Impact factor (1.32) : <https://doi:10.5004/dwt.2020.26410>

Kayal, B., Abu-Ghunmi, D., **Abu-Ghunmi, L.**, Archenti, A., Larkin, C., and Corbet, S. (2019) An economic index for measuring firm’s circularity: The case of water industry. *Journal of Behavioral and Experimental Finance* 21(March): 123-129 Impact factor (0.662): <https://doi.org/10.1016/j.jbef.2018.11.007>.

Abu-Ghunmi, D., **Abu-Ghunmi, L.**, Kayal, B., and Bino, A. (2016) Circular economy and the opportunity cost of not ‘closing the loop’ of water industry: the case of Jordan. *Journal of Cleaner Production* 131 (10) 228-236. Impact factor (4.167). <https://doi.org/10.1016/j.jclepro.2016.05.043>.

- Jemmali, H., and **Abu-Ghunmi, L.** (2016) Multidimensional analysis of the water-poverty nexus using a modified Water Poverty Index: a case study from Jordan. *Water Policy* 18 (4), 826-843. Impact factor (0.83)
- Abu-Ghunmi, L.,** Alkhatib, L. and Alkhalwaldeh, M. (2016). Aspergillus niger-mediated bioremediation of Triton X-100-contaminated resources. *Desalination and water treatment*. 57(32): 15200-15207. Impact factor (1.173)
- Kayal, B., **Abu-Ghunmi, L.,** Abu-Ghunmi, D., Rashid, A., Nicolescu, M., and Al Khatib, I. (2016). Pulp Industry Performance and Circular Economy. *Наукові праці Кіровоградського національного технічного університету. Економічні науки*. 29: 170-177.
- Abu-Ghunmi, L.,** Eslamian, S. (2016). Greywater. Chapter 34; Urban water reuse Handbook. Taylor & Francis Group, LLC, (Chapter four) 405-418. ISBN 9781482229141 - CAT# K22608
- Abu Ghunmi, L.,** Badawi, M., and Fayyad, M. (2014). Fate of Triton X-100 Applications on Water and Soil Environment: A Review. *Journal of surfactants and detergents*. 17 (5): 833-838. Impact factor (1.69). <https://doi.org/10.1007/s11743-014-1584-3>
- Abu Ghunmi, L.,** Al-Refaie, A., Kassab, G., Abu Ghunmi, D., and Bata, N. (2014). Minimizing Discrepancies in Oxygen-Demand-based-Biodegradability (ODB) Results Using Taguchi Method. *Desalination and water treatment*. 52 (25-27), 4664-4672. Impact factor (1.173)
- Kassab, G., Halalsheh, M., **Abu Ghunmi, L.** and Shatanawi, K. (2013). Characterization and anaerobic biodegradation of single house wastewater. *Jordan journal of civil engineering*. 7 (2): 202-2010.
- Hamaideh A., **Abu Ghunmi, L.** and Hamdi M. (2012). Water options in the middle east: current trends and innovations. *Journal of soil and water conservation*. 67 (3): 77A-79A. Impact factor (1.60)
- Abu Ghunmi, L.,** Zeeman, G., Fayyad, M. and van Lier, J. B (2011). Grey water treatment systems: A review. *Critical Reviews in Environmental Science and Technology*. 41 (7) 657-698. Impact factor (3.468). <https://doi.org/10.1080/10643380903048443>
- Abu Ghunmi, L.,** Zeeman, G., Fayyad, M. and van Lier, J. B. (2010). Grey water biodegradability. *Biodegradation*. 22 (1) 163–174. Impact factor (2.336)
- Abu Ghunmi, L.,** Zeeman, G., Fayyad, M. and van Lier, J. B. (2010). Grey water treatment in a series anaerobic –aerobic system for irrigation. *Bioresource Technology*. 101 (1) 41-50. Impact factor (5.33). <https://doi.org/10.1016/j.biortech.2009.07.056>

Abu Ghunmi, L., Zeeman, G., van Lier, J. and Fayyad, M. (2008). Quantitative and qualitative characteristics of grey water for reuse requirements and treatment alternatives: the case of Jordan. *Water Sci. Technol.* 58 (7), 1385-1396. Impact factor (1.106). <https://doi.org/10.2166/wst.2008.444>

Halalsheh, M., **Abu Ghunmi, L.**, Al-Alami, N. and Fayyad, M. (2008). Fate of Pathogens in tomato plants and soil irrigated with secondary treated wastewater. In Al Baz et al. (eds.), *Efficient Management of Wastewater*. Springer-Verlag Berlin Heidelberg. 81-89.

Zeeman, G., Kujawa, K., Mes de, T., Hernandez, L., Graff de, M., **Abu Ghunmi, L.**, Mels, A., Meulman, B., Temmink, H., Buisman, C., Lier van, J. and Lettinga, G. (2008). Anaerobic treatment as a core technology for energy, nutrients and water recovery from source-separated domestic waste(water). *Water Sci. Technol.* 57 (8), 1207-1212. Impact factor (1.106). <https://doi.org/10.2166/wst.2008.101>.

Abu-Ghunmi, L. and Jamrah, A. (2006). Biological treatment of textile wastewater using sequencing batch reactor technology. *Environmental Modeling and Assessment.* 11 (4). 333-343. Impact factor (0.98)

Jamrah, A. and **Abu-Ghunmi, L.** (2005). One independent variable rate equation describing utilization of biodegradable organic matter in activated sludge processes. *Environmental Modeling and Assessment.* 10 (1), 21-31. Impact factor (0.98)

CONFERENCES:

Abu Ghunmi, L. Arwa Hamaideh, Laila Alkhatib, and Nadia Atoom (2016). Fungi potential in treatment of industrial wastewaters. Conference of Water security and climate change: challenges and oppournities in Asia. Bangkok, Tailand 28/11-1/12/ 2016.

Halalsheh, M., Kassab, G., **Abu Ghunmi, L.**, Hamaideh, A. (2014). Temperature shift as a tool for better understanding of solids digestion under anaerobic conditions. Proceedings IWA specialized conference- Global challenges: Sustainable wastewater treatment and resource recovery. Kathmandu, Nepal. October 26-30, 2014.

Abu Ghunmi, L. (2013). Grey water concept towared mitigating water shortage. 1st Annual International Conference The Politics of Freshwater: Access and Identity in a Changing Environment, Middlebury, USA, March 14-16, 2013

Abu Ghunmi, L. (2012). Grey water characteristics, use requirements and regulations. The 3^{ed} Regional Conference on Water Resources Assessment in the Arab Region, Amman_Jordan, April 16, 17 and18, 2012.

Abu Ghunmi, L., Zeeman, G., Fayyad, M. and van Lier, J. B. (2010). Role of Anaerobic Digestion in DeSaR concept Applications in Rural areas of Jordan with Cesspol sanitations. 12th World congress on anaerobic digestion, Guadalajora_Mexico, Poster-presentation. October 31st to November 4th 2010.

LANGUAGES
Arabic and English