

Résumé

Ghada Kassab

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Key Qualification

Dr. Kassab is an assistant professor at The Civil Engineering Department of The University of Jordan. She received her PhD degree in environmental engineering from Wageningen University-The Netherlands. Her research interests lie in the area of low cost wastewater treatment technologies, anaerobic digestion and bio-energy recovery. In the recent years her research was focused on bioenergy recovery from sewage sludge and food wastes, development of sustainable wastewater treatment technologies and sewage sludge management.

During the past five years, Dr. Kassab has been a core investigator in research programs related to decentralized sanitation, wastewater agricultural use, sludge management and anaerobic co-digestion of food wastes with sewage sludge.

Education

- 2009** **Ph.D., Environmental Engineering,**
Wageningen University, The Netherlands
- Thesis:** Combined carbon and nitrogen removal in integrated anaerobic/anoxic sludge bed reactors for the treatment of domestic sewage.
- 1999** **M.Sc., Environmental and Water Resources Engineering**
University of Jordan, Amman, Jordan
- Thesis:** Aeration over cascade structures
- 1994** **B.Sc., Chemical Engineering**
University of Jordan, Amman, Jordan

Significant Projects

As a core investigator Dr. Kassab has raised fund for the following projects and studies;

1. Effect of nano-graphene on anaerobic co-digestion of food wastes with sewage sludge. Project funded by the Deanship of Scientific Research/ The University of Jordan. Started on April, 2018 for two years.
2. Sewage Sludge Co-digestion with food wastes: Exploring potentials for Jordan. Project funded by Shouman Foundation. Started on October 2016 for two years.
3. "Piloting and strengthening adaptation capacity to climate change in the Zarqa River basin (phase I)". Project funded by UNDP and implemented in cooperation with International Union for Conservation of Nature (IUCN), Regional Office for West Asia. The project started on January 2012 for a three years period. Project total budget is **138,000 USD**.
4. "Development of agricultural wastewater use safety plan". The project is funded by CEHA with total budget of **120,000 USD**. The project period is 15 months and it started at November, 2013.
5. "Prefeasibility study for decentralized wastewater treatment plant in Al-Asmedah/ Basrah-Iraq". This study was funded by UNICEF with total budget of **14,000 USD**.

As a member of the research team, Dr. Kassab was involved in the project "Municipal sludge treatment and reuse options: Solutions for Jordan". Funded by the Scientific Research Support Fund (SRSF) with **290,000 USD**. The project started on April-2012 for three years period.

As a member of the study team, Dr. Kassab was involved in the following studies:

1. Feasibility study for construction of decentralized wastewater treatment plant (s) as well as the households and sewer connections and reuse system in rehab villages (Bwaidhah Gharbiyyeh; Dajaniyyeh)–Mafraq governorate. April 2016. The consultant: Joint venture of Royal Haskoning DHV/The Netherlands and LeAF BV/The Netherlands. Client: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
2. Feasibility study for sustainable management of wastewater generated by the Public Security Directorate compound. Study funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Employment History

Sep. 2014- present

**Assistant Professor-Civil Engineering Department
University of Jordan**

Responsibilities

- Teaching and student advising
- Academic advisement concerning program requirements and related courses.
- Curriculum development.
- Scientific research in the field of environmental engineering
- Fund raising for research and academic activities

2009 –2014

**Assistant Researcher – Environmental Engineering
Water Energy and Environment Center
University of Jordan**

Responsibilities:

- Raise funds for research projects
- Conduct research in fields of wastewater treatment, solid waste management and biio-energy recovery.
- Prepare technical documentation and write scientific papers for journal and conference publications
- Coordinate and conduct training in the different fields of environmental engineering

2001 –2003

**Research Assistant – Environmental Engineering
Water and Environment Research and Study Centre
University of Jordan**

Responsibilities:

- Conduct research on;
 - Low cost technologies for domestic wastewater treatment.
 - Agricultural reuse of domestic wastewater.
- Prepare technical documentation and progress reports for conducted projects.
- Prepare technical and financial proposals for fund raising.

1999- 2000

**Environmental Engineer
Komex International, Environmental Consulting, Amman-Jordan**

Responsibilities:

- Participate in conducting the environmental impact assessment of Tal Al-Mantahseptage treatment plant-Jordan Valley/ Jordan.
- Perform qualitative and quantitative analysis for the influent of Tal Al Mantah treatment plant.

Professional Memberships & Affiliations

- Member, Jordan Engineers Association (JAE).
- Sustainable Sanitation Alliance.(SuSanA)

Publications

1. Halalsheh, M; Kassab, G. (2018). Policy and governance framework for wastewater irrigation: Jordanian Experience. Book chapter: Safe use of wastewater in agriculture: from concept to implementation. Springer Nature. ISBN: 978-3-319-74267-0
2. Halalsheh, M., Kassab, G., Shatanawi, K; Shareef, M. (2018). Development of sanitation safety plans to implement world health organization guidelines: Jordanian experience. Book chapter: Safe use of wastewater in agriculture: from concept to implementation. Springer Nature. ISBN: 978-3-319-74267-0
3. **Kassab G.**, Halasheh M., Shatanawi K., Abydat N., Shareef M. (2014). Decentralized approaches to wastewater management in the rural areas of developing countries: a case study from Jordan. Regional conference on "Sustainable Integrated Wastewater Treatment and Reuse in the Mediterranean" 1-2 December. Sharm Al Sheikh-Egypt.
4. Halalsheh M, **Kassab G.** , Abu Ghunmi L., and Hamaydah A (2014). Effect of temperature shift on primary sludge digestion under anaerobic conditions. Sustainable Wastewater Treatment and Resource Recovery conference, 26-30 October, Kathmandu, Nepal.
5. **Kassab G.**, Halalsheh M., Abu-Ghunmi L. and Shatanawi K. (2013). Characterization and anaerobic biodegradation of single house wastewater. Jordan Journal of Civil Engineering, Volume 7, No. 2, pp. 202-210.
6. Abu-Ghunmi L., Al-Refai 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. Volume 52, pp. 4664-4672.
7. Halalsheh, M., **Kassab, G.**, Yazajeen, H., Qumsieh, S, Field, J. (2011). Effect of increasing the surface area of primary sludge on anaerobic digestion at low temperature. Accepted for publication in Bioresource Technology, volume 102, No.2, pp.748-752.
8. **Kassab G.**, Halalsheh M., Klapwijk A., Fayyad M. and van Lier J. (2010). Sequential anaerobic-aerobic treatment for domestic wastewater- A review. Bioresource Technology volume 101, pp. 3299-3310.
9. Mateo-Sagasta Davila J., **Kassab G.**, Klapwijk A. and van Lier J. (2009). Combination of methanogenesis and denitrification in a UASB reactor for water reclamation applied to small agglomerations. Desalination and Water Treatment. Volume. 4, pp. 177-182.
10. **Kassab, G.**; Koetse, E. and van Lier J. (2007). Integrating methanogenesis and denitrification in EGSB reactors for adjusting effluent nitrogen level. In Proceedings of 6th IWA Specialist Conference on Wastewater Reclamation and Reuse for Sustainability, 9 - 12 October, 2007, Antwerp, Belgium.

11. **Kassab G.**; Aln'imat H.; Klapwijk A.; Fayyad M. and van Lier J. (2005). Adjusting Nitrogen Concentrations to Agricultural Demand in a UASB Reactor for Sewage Treatment" In Proceedings of the 8th Latin American Workshop and Symposium on Anaerobic Digestion. 2-5 Oct. 2005, Punta del Este, Uruguay.
 12. Halasheh M.; **Kassab G.** and Fayyad M. (2005). Uses of treated sludge in agriculture: organic pollutant perspective. Proceedings to the First International Conferences on Sustainable Urban Wastewater Treatment and Reuse (SUWTR).
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Teaching Experience

- Water Supply; compulsory course within the Civil Engineering curriculum/ The University of Jordan
- Wastewater treatment; compulsory course within the Civil Engineering curriculum/ The University of Jordan
- Biological Wastewater Treatment; compulsory course within the Water Resources and Environmental Engineering MSc. Program offered by the Civil Engineering department/The University of Jordan.
- Unit Operation; compulsory course within the Water Resources and Environmental Engineering MSc. Program offered by the Civil Engineering department/The University of Jordan.
- Physical chemical treatment; compulsory course within the Water Resources and Environmental Engineering MSc. Program offered by the Civil Engineering department/The University of Jordan.
- Water Supply; elective course within bicultural MSc. program entitled "Integrated Water Resource Management. The program is hosted by University of Jordan and Cologne University-Germany.
- Sanitation and Public Health; elective course within bicultural MSc. program entitled "Integrated Water Resource Management". The program is hosted by University of Jordan and Cologne University-Germany.
- Short courses on planning and design of wastewater treatment plants.