Yaqoub Al-Khasawneh, Ph.D.
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Department of Mechanical and Maintenance Engineering

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German Jordanian University.
School of Applied Technical Sciences



Personal Information

Date of birth	03.01.1970
Place of Birth	Irbid, Jordan
Nationality	German/Jordanian

Studies in Germany

10/1997 – 03/2003	Mechanical Engineering Department at University of Duisburg Essen (Duisburg-Essen University/Germany)
03/2003	Dipl.-Ing. in Mechanical Engineering **(good rating)**, specialization in numerical methods of thermal fluid dynamics and internal combustion engines
12/2003 – 09/2008	PhD studies at TU Bergakademie Freiberg, Department of Mechanical, Process and Energy Engineering
06/2009	PhD (Dr.-Ing.) in Mechanical Engineering **(Magna Cum Laude)**

Research topics

- Modeling and Design of Energy-Efficient Process Machinery: Optimizing machinery performance to reduce energy consumption through advanced modeling and simulation.
- Simulation of Power Plant Systems: Dynamic modeling of thermal and renewable power plants to enhance efficiency and integration.
- Atmospheric Water Extraction Technologies: Designing systems to generate potable water from ambient air.
- Energy Conversion Systems: Exploring efficient and sustainable methods for energy transformation and storage.
- Geothermal Energy Systems and Applications: Investigation of geothermal resources for sustainable power generation, heating, and integration into hybrid energy systems.

Practical Training

- Volkswagen Sachsen GmbH
- ADAM OPEL AG (Plant Bochum)
- Airport Düsseldorf GmbH

Professional Experiences

10/2008 – 07/2013	Employee at **Hitachi Power Europe**, Department of Process Engineering and Mechanical Design Calculation
07/2013 – 10/2016	Lead engineer at **Mitsubishi Hitachi Power Systems Group/Germany**.
10/2016 – Present	Associate Professor at the **German–Jordanian University**.

Overview of the courses I have taught

- Heat Transfer
- Energy Conversion
- Advanced Energy Conversion
- Power Plants Engineering
- Machine Design
- Strength of Materials
- Fundamentals of Mechanical Design
- Statics and Strength
- Fluid Mechanics Lab
- Energy Lab
- Advised graduate students on their graduation projects and master's theses
- Supervising many German/Diplomas theses

Computer Experience

Creo Elements/Pro 5.0	key user
Pro/MECHANICA Structure	key user
Pro/MECHANICA Thermal	key user
MS-Office	excellent
Solid Works	key user
DEM PFC^{2D}	very good
CATIA	good
CAD	good
ME 10	good
FEM Abaqus	good
C++	basics
Homer	basics
PV syst	basics

Language skills

Arabic	Mother language
German	Excellent in writing and speaking
English	Very good in writing and speaking

Selected publications

2009 G. Unland and **Y. Al-Khasawneh**; The influence of particle shape on parameters of impact crushing. **Minerals Engineering.** https://doi.org/10.1016/j.mineng.2008.08.008.

2010 **Al-Khasawneh Y.**, Konietzky H.; (2010) Interpretation and Optimization of Vertical Shaft Crushers with DEEM; pages 1-8 (C.06.2-4). **Bundesanstalt für Material forschung und - prüfung (BAM)**, Book title; European Conference on Fracture (ECF-18), Berlin/Germany.

2014 Thomas Krause and **Yaqoub Al-Khasawneh.** Upgrade of Mills and Burners for Biomass Firing in Denmark. Power Gen June 2014, Koeln/Germany.

2016 **Y. Al-Khasawneh**; Consideration of additional influencing variables during impact comminution, Cement International /Germany. **Cement Internationa**l, Volume 14, Issue 5, Provided by Scopus.

2019 **Al-Khasawneh Y**, Albatayneh A; The Application of Ground-Source Heat Pumps for a Residential Building in Jordan. **Advanced Studies Energy Efficiency and Built Environment for Developing Countries**. ISBN : 978-3-030-10855-7.

2019 Albatayneh A, **Al-Khasawneh Y**, Alawneh F, Alkhazali A, Mohaidat S; Biofuel in Developing Countries-Ethical Concerns. **Advanced Studies in Energy Efficiency and Built Environment for Developing Countries**. ISBN : 978-3-030-10855-7.

2019 Alawneh F, Albatayneh A, Al-Addous M, **Al-Khasawneh Y**, Dalalah Z. Solar Photovoltaic (PV) Power Systems in Jordan: The Past, the Present and the Future?. **Advanced Studies in Energy Efficiency and**

	Built Environment for Developing Countries. ISBN : 978-3-030-10855-7.
2021	**Yaqoub Al-Khasawneh** and Habis Al-Zoubi. Grinding characteristics of torrefied and white wood biomass pellets for power plants application: laboratory and industrial scales. **Journal of Mechanical Science and Technology.** https://doi.org/10.1007/s12206-021-0714-x
2021	**Yaqoub al-Khasawneh**. Development and testing of a novel mathematical-physical model for the design of ring armor for the vertical shaft impact crushers. **Minerals Engineering.** https://doi.org/10.1016/j.mineng.2021.106994
2021	**Al-Khasawneh, Y.**, Al-Zoubi, H.; Grinding characteristics of torrefied and white wood biomass pellets for power plants application: laboratory and industrial scales. **Journal of Mechanical Science and Technology.** https://doi.org/10.1007/s12206-021-0714-x
2021	Habis Al-Zoubi; **Yaqoub Al-Khasawneh** and Waid Omar. Design and feasibility study of an on-grid photovoltaic system for green electrification of hotels: a case study of Cedars hotel in Jordan. **International Journal of Energy and Environmental Engineering.** https://doi.org/10.1007/s40095-021-00406-z
2022	Zakariya Dalala, Murad Al-Omari, Mohammad Al-Addous, Mathhar Bdour, **Yaqoub Al-Khasawneh**, Malek Alkasrawi. Increased renewable energy penetration in national electrical grids constraints and solutions. **Energy.** https://doi.org/10.1016/j.energy.2022.123361
2023	**Yaqoub al-Khasawneh**. Novel design modeling for Vertical Shaft Impactors. **Powder Technology.** https://doi.org/10.1016/j.powtec.2023.119205
2024	Mathhar Bdour; Hussein M. K. Al-Masri; Mohammad Al-Addous; Ayman Al-Quraan; **Yaqoub Al-Khasawneh**; Mu'men Bodoor; Mahmood Otoom. Design of a Charging Station for Electric Vehicles Based on a Photovoltaic-Biodiesel Hybrid Renewable Energy System Combined with Battery Storage. **International Journal of Energy Research.** https://doi.org/10.1155/2024/9199151

2025	**Yaqoub al-Khasawneh**; Mohammad Alshawabkeh; Mohammad Khwaileh; Ruba Almalahi; Qusay Alshawabkeh. Sustainable Atmospheric Water Generation Systems as a Solution to Alleviate Clean Water Scarcity in Jordan's Arid and Semi-Arid Terrain. **Journal of Environmental Engineering** https://Doi.10.1061/JOEEDU/EEENG-7744
2025	Aiman Albatayneh; Murad Al-Omary; Mustafa Jaradat; Mathhar Bdour; **Yaqoub Al-Khasawneh**; Muna Hindiyeh; Rafat Aljarrah. Water-Energy Nexus Dilemma for Hydrogen Production in Water-Scarce Regions. **Energy Nexus**. https://doi.org/10.1016/j.nexus.2025.100463
2026	Mohammad Alshawabkeh; **Yaqoub Al-Khasawneh**. Techno-Economic Assessment of a Sustainable Solar-Powered Atmospheric Water Generation and Electrolysis System for Green Hydrogen Production in Water-Scarce Climatic Regions. **Journal of Environmental Chemical Engineering.** https://doi.org/10.1016/j.jece.2026.121636
2026	Mugahed Al-Kolaibi; **Yaqoub Al-Khasawneh**. Techno-economic assessment of a geothermal ORC-driven atmospheric water generation for remote arid regions: the Al-Lisi prospect, Yemen. **International Journal of Energy and Water Resources.** https://doi.org/10.1007/s42108-026-00558-w
2027	Mugahed Al-Kulaibi; **Yaqoub Al-Khasawneh**. Integrated geothermal-ORC-PEM hydrogen production: plant-level techno-economic assessment under uncertainty. **Fuel** https://doi.org/10.1016/j.fuel.2026.140813
2026	**Yaqoub Al-Khasawneh**; Mugahed Al-Kulaibi. Techno-Economic Feasibility of Mechanical EV Battery Recycling in Jordan: Administrative Fleet Analytics, TEA, and Implementation Roadmap, **Journal of Material Cycles and Waste Management.** Under review, JMCW-D-26-00302. Under review.

Patents

2009	**DE102008056759A9** **Y. Al-Khasawneh** and G. Unland „ Process for the configuration of stator geometry of centrifuge vertical shaft impactor crushers with maximum crushing effect“
2012	**DE201010008108** **Y. Al-Khasawneh**, T. le Van, D. Melchert „Meal courses in T-section, and/or bag profile, and groove profile for brown coal mills“

Selected Conference Presentations

2005	G. Unland, **Y. Al-Khasawneh**; Analysis to the single grain impact crushing with special consideration of the influence of the particle shape, VDI GVC of specialized committees food process engineering, March 2005, Berlin/Germany
2008	**Y. Al-Khasawneh**; Influence of the particle shape of the feedings on the crushing force in single grain of impact crushing; particle measuring technique and crushing/classifying, March 2008, Munich/Germany 10 - 14. März 2008 TU München in Weihenstephan/Freising
2008	**Y. Al-Khasawneh**; Optimization of the crushing process in vertical shaft impactor, 3rd symposium of the mineral preparation technology, Freiberg/Germany
2010	**Y. Al-Khasawneh**; Konietzky H.; Interpretation and Optimization of Vertical Shaft Crushers with DEEM; ECF 18 August 30 - September 03, 2010, Dresden/Germany 18th European Conference on Fracture: Fracture of Materials and Structures from Micro to Macro Scale
2014	Krause T., **Al-Khasawneh Y**.; (2014) Upgrade of Mills for Biomasse Firing in Denmark, Power Gen June 2014, Koeln/Germany
2017	**Y. Al-Khasawneh**; Alternative and Renewable Energy Quest (AREQ), 27 - 29 November 2017 Thessaloniki, Greece

2017	**Y. Al-Khasawneh**, A. Albatayneh, S. Althawabiah; F. Alawneh, M. Bdour; (2017) The Application of Ground-Source Heat Pumps for a Residential Building in Jordan. Alternative and Renewable Energy Quest Symposium; Pages 46 – 53 Thessaloniki/Greece
2018	**Y. Al-Khasawneh**; Aiman Albatayneh, Sulaiman Mohaidat, Mustafa Jaradat and Madher Bdour; Poster Presentations, The Impact of Different Shading Orientation on Energy Consumption for a Building in Eastern Mediterranean Region. Paper Ref.: CESE2018, Challenges in Environmental Science and Engineering; Paper Ref: CESE2018-6-011, Bangkok/Thailand
2019	Aiman Albatayneh, Mohammad N. Assaf, **Yaqoub Al-Khasawneh**, Mustafa Jaradat; (2019); Comparison of the overall energy efficiency for internal combustion engine vehicles and electric vehicles; CONECT Conference of Enviromental and Climate Technologies; 15-17 May 2019, Riga/Latvia
2019	**Y. Al-Khasawneh**; A. Albatayneh; (2019) Evaluation of Solar Rock Bed Used For Heating Schools in Southern Part of Jordan. ICREN 2019 International Conference on Renewable Energy; 24-26/04/2019; UNESCO, ISSN 2609-374X; Paris/France
2019	**Y. Al-Khasawneh**; Conect, Conference of Environmental and Climate Technologies, 15-17 May 2019; Riga Latvia; Comparison of the overall energy efficiency for international combustion engine vehicles and electric vehicles
2019	A. Albatayneh, **Y. Al-Khasawneh**, F Alawneh, A Alkhazali, S Mohaidat, Biofuel in Developing Countries Ethical Concerns, 2017 International In Advanced Studies in Energy Efficiency and Built Environment for Developing Countries 2019, Barcelona, Spain

Overview of the workshops I have organized

2022	The Future of Renewable Energy in Jordan within the Current Conditions
2022	The Future of PV Recycling in Jordan
2025	Solid Waste Recycling: Sustainable Solutions for a Greener Future

2025	Rising Responsibility: The Future of Used Solar Panels
2025	The Impact of Batteries and Their Waste on the Environment: From Pollution to Recycling – Lessons from Germany
Selected Student Graduation Projects I Supervised	
Selected Master's Theses I Supervised	
References	Ehemaliger Finanzminister des Freistaats Sachsen **Prof. George Unland** TU Bergakademie Freiberg Lampadiusstraße 4 09599 Freiberg https://de.wikipedia.org/wiki/Georg_Unland **Prof. Dr.-Ing. habil. Heinz Konietzky** TU Bergakademie Freiberg Director of Geotechnical Institute and Professorship for Rock Mechanics Gustav-Zeuner-Straße 1 09599 Freiberg https://tu-freiberg.de/en/fakultaet3/gt/felsmechanik/rock-mechanics/prof-konietzky-1
Hobbies	Reading
05/02/2026, Amman-Jordan Dr. Yaqoub Al-Khasawneh Al-Khasawneh	