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Ammar A. Alkhalidi

EDUCATION:

2007-2011 Ph.D. Mechanical Engineering, University of Wisconsin-Milwaukee, USA.

Thesis Title: Study of Enhanced, Energy Use, Aeration System for Wastewater Treatment Plants.

2004-2006 M.Sc. Mechanical Engineering, University of Jordan, Jordan.

Thesis Title: Improved Design of the Condenser for Efficient Greenhouse Desalination Technology

1999-2004 B.Sc. Mechanical Engineering, University of Jordan, Jordan.

HONORS AND AWARDS

- **First Place Award** – In the National Competition for the Best Graduation Projects in Renewable Energy. Organized by the Jordanian-German Center of Excellence for Solar Energy in collaboration with the National Employment and Training Company.
- **First Place Award** – In Falling Wall completion 2019, Jordan Chapter. Besides, **Jordan Representative and Competitor** in the Falling Walls Conference. In Berlin Germany.
- **Best Paper Award** – International Renewable Energy Congress (IREC), The 10th International Renewable Energy Congress held on March 26 - 28, 2019 in Sousse, Tunisia.
- **Best Innovation Award 2018** – Philadelphia University Award for Best Innovation in Renewable Energy. National Award incorporation with (In partnership with Khalil Al Salem Foundation).
- **GOLD Award** – Graduate of the Last Decade Awards (Graduate Degrees), **2015**, University of Wisconsin-Milwaukee.
- **Chancellor Award** – for Graduate Students, University of Wisconsin-Milwaukee, **2007-2011**.

PATENTS

- US20130099401A1: Membrane for air diffuser, Ryoichi Samuel Amano and Ammar Alkhalidi, U.S.

PROFESSIONAL EXPERIENCE

09/2021 – date, UNIVERSITY OF SHARJAH, Sharjah, UAE

09/2021 – Up to date	Associate Professor, Sustainable & Renewable Energy Engineering Department, School of Engineering.
09/2021- Up to date	School Council Member

Major Achievements:

- Member of collage Social Affaires committee.

Research Topics:

- Renewable Energy.
- Kinetic Energy Storage system.

1/2014 – date, GERMAN JORDANIAN UNIVERSITY, Amman, Jordan

09/2021- Up to date	Sabbatical Leave at University of Sharjah
01/2018 – Up to date	Associate Professor, Energy Engineering Department, School of Natural Resources Engineering and Management.
09/2020- Up to date	School Council Member
01/2014 – 12/2017	Assistant Professor, Energy Engineering Department, School of Natural Resources Engineering and Management.
7/2015 – 10/2016	Energy Engineering Department, School of Natural Resources Engineering and Management, Head
10/2016-10/2017 09/2020- Up to date	University Council Member.
01/2021- Up to date	Integrating Blended and Online Teaching Committee.

Major Achievements:

- Update Study Plan (2021) For Energy Engineering Program.
- Working With MAANI Company on a Funded Research For Hydroponics.
- Signing an MOU for Dual-Degree Agreement with the University of Wisconsin-Milwaukee.
- Implemented A New Study Plan (2014) For Energy Engineering Program. Review, Update and Implementation to Comply With Higher Education Accreditation Commission, Jordan.
- Prepared Tenders Document, Evaluated Offers To Build A 1.85 MWp Photovoltaic Power Generation Plant At GJU Campus.
- Establishing a New Energy Engineering Department at Petra University. My Role Was To Develop The Study Plan And Laboratories.

- Supervise Solar Cooling Project Installed At GJU Campus On Building C. This Project Was Funded By GIZ.

Research Topics:

- Regulation and legislation for renewable energy.
- Heat Transfer and Fluid Flow in Micro and Nano-Scale Geometry.
- Design of Micro-Scale Separator to Separate Tumor Cells and Blood Cells.
- Water and Wastewater Treatment Technology.
- Solar Disinfection.
- Sustainable City Design.
- Energy Plus Shelter Design.
- PV Thermal Hybrid System.
- Energy-efficient Urban Planning
- Aquaponics and Hydroponics.

9/2012 – 1/2014, The Hashemite University, Zarqa, Jordan

9/2012-1/2014 Assistant Professor, Mechanical Engineering Department, School of Engineering.

Major Achievements:

- Water Committee, Member. My Role Was To Develop Tender Documents To Establish A Water Treatment Plant To Serve The University Water Demand.
- Assistant Editor for Jordan Journal of Mechanical and Industrial Engineering (JJMIE).
- Organization committee for International Conference on Integrated Renewable Energy, Desalination and Water Supply, (IREDeW 2013).

Research Topics:

- Solar Desalination.
- Energy Use in Wastewater Treatment.

2007 – 2012, University of Wisconsin-Milwaukee, Milwaukee, WI, USA

2007 - 2011 Teaching Assistant.

2011 - 2012 Adjunct Professor, Mechanical Engineering Department, School of Engineering

Major Achievements:

- Renovate The Heat Transfer Lab.
- Prepared a New Manual For heat Transfer experiment Experiments.
- Renovate Hydrology Lab And Establish A Full Set of Experiment For Water Aeration.
- Reactivate the American Institute of Aeronautics & Astronautics Student Organization at UWM.

Research Topics:

- Total Suspended Solids Removal Project. Proposed A New Design To Improve Solid Removal In Wastewater Treatment.
- Wind Turbine Blade Design. Improvement of Wind Turbine Blade Aerodynamics, Sponsored By WE-Energies (Energy Company for Wisconsin).
- Air Diffusers Design Improvement for Aeration Process in the Wastewater Treatment Plant. Funded By ITT Sanitaire In Milwaukee, Wisconsin USA.

2004-2006, University of Jordan

Amman, Jordan

Master Student and Research Assistant.

Research Topics:

- Condenser Design: A Full Review of The Condenser Performance In Greenhouse Desalination System Was Done To Increase Dehumidification Process Efficiency. A New Design Built From Plastic Material Was Developed and Tested. In The New Design, 16.5% Improvement Was Achieved Compared To The Latest Condenser Design For This Particular Application.

Consultant, Design Engineer:

2006 – 2007, Consolidate Consultant Company (CC Group),

Amman, Jordan

Department of Water and Environment. I Was Responsible For The Design and Supervision of The Mechanical Equipment (Pump and Lift Stations, Valve Chambers, Water Supply, and Wastewater Treatment) In Water Projects:

Major Achievements:

- Supervised The Water Treatment Plant of Al-Jeeza Al-Talibeia this project was a joint project between our company and the other two companies: HYDEA and SWS ITALY.
- Designed Wastewater Treatment Plant (Package Unit), R.O. Unit, Lift Station, and Pump Room for Housing Compounds ex Kuito and Houmbo housing compound, Angola.
- Design Water Supply Network for the Royal Village (10,000 Basic Users), Amman Jordan.
- Pumping Wadi Al Moujeb water to Kafreen Dam 5000000 m³/year at 280m head.
- Oil Shale Study Project. Study Water Supply and Wastewater Requirements.
- Al-Wehdah Dam Project. Supervised Mechanical Equipment Installation.
- North Al Doha wastewater pumping including valve chambers, air release valves, for 1600, 1800mm DI pipes.

TEACHING EXPERIENCE

Accredited Teacher:

- Accredited Teacher: from the higher education accreditation commission in Jordan, in the field of water and wastewater technology.

Courses Taught:

Graduate-Level Courses

- **Wind energy**, Jordan University of Science and Technology.
- **Research Methodology**, Jordan University of Science and Technology.
- **Seminar**, Jordan University of Science, Technology, and German Jordanian University.
- **Energy Efficiency**, Jordan University of Science and Technology.
- **Advanced Energy Conversion**, German Jordanian University.
- **Thermo-Fluid Sciences**, German Jordanian University.
- **Advanced Heat Transfer**, Hashemite University.

Undergraduate-Level Courses

- **Thermal and Hydrodynamic Equipment**, German Jordanian University.
- **Heat Transfer**, University of Wisconsin-Milwaukee, Hashemite University, and German Jordanian University.
- **Thermodynamic**, German Jordanian University.
- **Thermal Power Plant**, German Jordanian University.
- **Energy Conversion**, German Jordanian University.
- **Wind Energy Technology**, German Jordanian University.
- **Numerical Analysis**, Hashemite University.
- **Wastewater Treatment Engineering**, Hashemite University.
- **Engineering Drawing**, Hashemite University.
- **Fluid Dynamics**, University of Wisconsin-Milwaukee.
- **Engineering Fundamentals, ME110 & 111**, University of Wisconsin-Milwaukee.

FUNDED RESEARCH PROJECTS

- Optimization of concentrating solar systems generating direct steam for Industrial applications in Jordan. **Funded jointly By the Federal Ministry of Education and Research (BMBF) (\$ 1,200,000) and Ministry of Energy and Mineral Resources (MEMR) (\$ 14,000).**
- Investigation of Microbial Fuel Cells (MFCs) Technology for Bio-Electricity Generation. **Funded By German Jordanian University (\$ 25,000).**
- Hydroponics, Sandless Vegetation. **Funding through industrial collaboration with MAANI ventures (\$ 10,000).**

- Wind Turbine Coupled with Perpetual motion for power generation. **Funded By German Jordanian University, (\$ 600).**
- Solar Disinfection for water and wastewater, Seed Grant. **Funded By German Jordanian University, (\$ 35,000).**
- Wind Turbine Combined With Perpetual Motion Investigation. **Funded By The Deanship of Research and Graduate Study, German Jordanian University, (\$ 1,000).**
- Photovoltaic/Thermal Panels Investigation for Jordanian Weather. **Funded By The Deanship of Research and Graduate Study, German Jordanian University, (\$ 1,000).**
- Investigation of The Techno-Commercial Potential For Cooling of Photovoltaic Modules, Grant (Commercialization / Applied Research), and SRTD-II Is The Second Phase of The “Support To Research, Technological Development, And Innovation In Jordan” Project. **Funded By The European Union, (\$ 740,000).**
- Development of Higher Education Teaching Modules on The Socio-Economic Impacts of The Renewable Energy Implementation, **DESIRE, Is An ERASMUS+ PROGRAMME Funded By The European Commission (\$ 950,000).**
- Air Diffusers Design Improvement for Aeration Process in the Wastewater Treatment Plant. **Funded By ITT Sanitaire In Milwaukee, Wisconsin, USA (\$ 120,000).**
- Swept Blade Design For Wind Energy Turbine. **Funded By WE-Energies (Energy Company For Wisconsin), Milwaukee, Wisconsin, USA (\$ 15,000).**
- Condenser Design for Greenhouse Desalination System. **Funded By The Middle East Desalination Research Center, Muscat, and Sultanate of Oman (\$36,000).**

SELECTED GRADUATION PROJECTS

- Improvement of Water-Methanol injection into combustion engines, Faisal Salem, **Funded by Fuelsave GmbH, 20537, Hamburg, German Tel. +49 174 3601000.**
- Hydroponics Fodder System, Anas Awartani, Ehab Darwish, and Yazan Hannun. **On Hand Research:** Media Coverage: <https://www.youtube.com/watch?v=M7fiQmQdDT0>, <https://www.facebook.com/960234257424791/posts/2070879179693621/>.
- Design of an Off-Grid Solar PV System for a Rural Shelter, Noor Hussain Al Dulaimi. **Top finalist in the 10th national technology parade.**
- Future Automotive Safety; Concept and Development Engineering Approach to Restraint and Safety Systems, And Prospect Requirements, Talal Al-Barakati, **Funded by key safety System, German.**
- Energy Efficient Aquaponics, **Khodra Aquaponics** Amman, Jordan case study. Dana Abusubaih.
- Design of solar water heater that uses **sand as energy storage** media and Fresnel lenses and solar collectors, Essa Kakish and Saif Jaber.

- Comparative Review of the **Jordanian Thermal Insulation Code**, Haya Hamasha, **Awarded Best Paper Award at IREC 2019 Conference**.
- Wind Turbine Coupled with **Perpetual Motion**, Yazeed AL-Mousa, and Mustafa Zubeidy.

CONSULTATIONS

- Chair, Committee for the preparation of technical specifications for pressure vessels, The Jordan Standards and Metrology Organization (**JSMO**). **Major Achievement**, issuing Jordan specification for Gas cylinders — Refillable composite gas cylinders and tubes — Design, construction.
- Technical Consultant, Committee for the preparation of technical specifications for Valves, The Jordan Standards and Metrology Organization (**JSMO**). **Major Achievement**, issuing Jordan specification for Specifications of cryovascular and pressure relief valves.
- Consultant, Improvement Energy Efficiency in the Water Sector, funded by **GIZ**: Working on the **Elaboration of Database for the Jordanian Water Sector**. In this project, an elaborated database for comprehensive and systematic energy management in the water sector will be established. The database will serve both Improvement Energy Efficiency in the Water Sector (IEE) and Renewable Energies in the water sector (REW) projects towards establishing a systematic and reliable energy management system and integrating renewable energies in the water sector. This Project includes measurement validation and energy efficiency for thirty-one water-pumping facilities and two Wastewater treatment.
- Consultant, Coalition of Energy Services Associations (CESA) Funded by **USAID**: Evaluation criteria developer, Responsible for developing tailored evaluation criteria for Accrediting Jordanian Energy Service Providers (ESPS). The tailored criteria have to consider Jordanian culture, energy market status, and improving this market.
- Reviewer, Coalition of Energy Services Associations (CESA) Funded by **USAID**: Accreditation Committee Member, Responsible for Application Review to Accredite Jordanian Energy Service Providers (ESPS), and provides expertise suggestion to improve Applicant companies.
- Consultant, Solar Power Services (SPS) Germany: Developer, Energy Efficiency, and Renewable Energy Policy for the Jordanian Water Sector. Funded By **GIZ**. My Role Was To Develop General Policies For To Improve Energy Efficacy In Pump Station and Introduce Renewable Energy In the Jordanian Water Sector.
- Owner representative, **Al-Moasron Company L.T.D**, A 530 kWp Photovoltaic Power Generation Plant at company premises in Sahab, Amman, Jordan.
- Consultant, **Jawad Modern Bakeries**, Solve an overheat problem in Retarder Proofer (Controlled temperature and humidity room). This unit was designed for Europe and is not compatible with Jordanian weather.
- Owner representative, **Al-Zaineh for Metal Forming Co**, A 800 kWp net metering Photovoltaics Power Generation Plant in Sahab, Amman, Jordan.

PUBLICATIONS: JOURNAL PAPERS

1. Khawaja, Mohamad K., Marwa Ghaith, and **Ammar Alkhalidi**. "Public-private partnership versus extended producer responsibility for end-of-life of photovoltaic modules management policy." *Solar Energy*, Vol. 222, 2021, P.P. 193-201.
<https://doi.org/10.1016/j.solener.2021.05.022>.
2. Hazem Kaylani, **Ammar Alkhalidi**, Fayez Al-Oran, and Qutaiba Alhababsah, Component-Level Failure Analysis Using Multi-Criteria Hybrid Approach to Ensure Reliable Operation of Wind Turbines, *Wind Engineering*, 2021. <https://doi.org/10.1177/0309524X211003960>.
3. **Ammar Alkhalidi**, Hamza Alkhatba and Mohamad K Khawaja, Utilization of buildings' foundations for a seasonal thermal energy storage medium to meet space and water heat demands, *International Journal of Photoenergy*, 2021. <https://doi.org/10.1155/2020/6668079>.
4. **Ammar Alkhalidi**, Suhil Kiwan, and Haya Hamasha. "A Comparative Study between Jordanian Overall Heat Transfer Coefficient (U-Value) and International Building Codes, With Thermal Bridges Effect Investigation." *Sustainable Development Research*, Vol. 3, 2021, p10-p10. DOI: <https://doi.org/10.30560/sdr.v3n1p10>.
5. **Ammar Alkhalidi**, Yazeed Al-Jraba'ah. Solar desalination tower, novel design, for power generation and water distillation using steam only as working fluid. *Desalination*. 2020. Dec 15: PP. 114892. DOI: <https://doi.org/10.1016/j.desal.2020.114892>.
6. **Ammar Alkhalidi**, Sameer Arabasi, Abeer Abu Othman, Tareq Sabanikh, Linda Mahmood and Qasem Abdelal, Using Wood's glass to enhance the efficiency of a water solar disinfection (SODIS) apparatus with a Fresnel lens, *International Journal of Low-Carbon Technologies*, 2020, DOI: 10.1093/ijlct/ctaa096.
7. Safaa J Al-Suwaidi, Amani I Al-tmimi, **Ammar A Alkhalidi**, Application of Siemens index of green cities for selected areas in Iraq. *Journal of the Earth and Space Physics*, Accepted, DOI: 10.22059/JESPHYS.2021.308430.1007240.
8. **Ammar Alkhalidi**, Ro'a Almahmood, Hiba Malkawi, and Ryoichi S. Amano, What are the barriers that prevent its adoption? Case study of Battery Electric Vehicles, *International Journal of Energy for a Clean Environment*. 2020. Volume 22, Issue 1, DOI: 10.1615/InterJEnerCleanEnv.2020035391.
9. Hasan, Alaa, Abdel Rahman Salem, Ahmad Abdel Hadi, Mohammad Qandil, Ryoichi S. Amano, and **Ammar Alkhalidi**. "The power reclamation of utilizing micro-hydro turbines in the aeration basins of wastewater treatment plants." *Journal of Energy Resources Technology*, Vol. 143, no. 8, 2020. DOI: <https://doi.org/10.1115/1.4048869>.
10. **Ammar Alkhalidi**, Abeer Abuothman, Abdallah AlDweik, and Al-Hamza Al-Bazaz, Is it a possibility to achieve energy plus prefabricated building worldwide?, *International Journal*

- of Low-Carbon Technologies. 2021, Volume 16, Issue 1, pp. 220–228, <https://doi.org/10.1093/ijlct/ctaa056>.
11. **Ammar Alkhalidi**, Dina Hatuqay, Energy Efficient 3D Printed Buildings: Material and Techniques Selection Worldwide Study, *Journal of Building Engineering*, 2020, Volume 30, pp. 101286. DOI: <https://doi.org/10.1016/j.jobe.2020.101286>.
 12. **Ammar Alkhalidi**, and Yara Zaytoon, Waste-material used to reduce the heating load in lightweight shelters without a significant increase in the shelter weight, *Environmental and Climate Technologies*, 2020, Vol. 24, no. 1, pp. 143–161. DOI: <https://doi.org/10.2478/rtuect-2020-0009>.
 13. Aiman Alshare, Wael Al-Kouz, **Ammar Alkhalidi**, Suhil Kiwan, and Ali Chamkha, Periodically fully developed nanofluid transport through a wavy module, *Journal of Thermal Analysis and Calorimetry*, 2020, pp. 1-13. DOI: <https://doi.org/10.1007/s10973-020-09448-7>.
 14. **Ammar Alkhalidi**, Osama Aljolani, Do Green Buildings Provide Benefits to the Residential Sector in Jordan? Yes, But... *International Journal of Low-Carbon Technologies*, 2020, 00, 1–9. DOI: <https://doi.org/10.1093/ijlct/ctz080>.
 15. Khawaja, Mohamad K., **Ammar Alkhalidi**, and Sara Mansour, Environmental impacts of energy storage waste and regional legislation to curtail their effects—highlighting the status in Jordan, *Journal of Energy Storage*, 2019 Vol. 26, 100919. DOI:10.1016/j.est.2019.100919, First Placed in National Competition.
 16. **Ammar Alkhalidi**, Mohamad K Khawaja, Dana Abusubaih, Energy-efficient cooling and heating of aquaponics facilities based on regional climate, *International Journal of Low-Carbon Technologies*, 2019, 00, 1–12, DOI: <https://doi.org/10.1093/ijlct/ctz053>
 17. **Ammar Alkhalidi**, Mohamad Khawaja, and Abdel Ghaffar Al Kelany. Repurpose waste-material to cooling PV panels, save the environment and improve panel efficiency. *International Journal of Photoenergy*, 2019, Vol. 2019, 9 pages. DOI:10.1155/2019/2181967
 18. **Ammar Alkhalidi**, Suhil Kiwan, Wael Al-Kouz, Aiman Alshare, Rarefied flow and heat transfer characteristics of rectangular cavities with heated concave surface. *Advances in Mechanical Engineering*, 2019, Vol. 11(6). pp. 1-14. DOI: 10.1177/1687814019860988.
 19. **Ammar Alkhalidi**, Mohamad K. Khawaja, Khaled A. Amer, Audai S. Nawafleh, and Mohammad A. Al-Safadi, Portable Biogas Digesters for Domestic Use in Jordanian Villages, *Recycling*, 2019, Vol. 4(21). pp. 1-10. DOI: 10.3390/recycling4020021.
 20. **Ammar Alkhalidi**, Ryo Amano, and Mohammad Khawaja, KLa Relation With Bubble Size, Bubble Release Rate, And Number Of Bubbles. *Sch J Eng Tech*, 2019; 7(2): 33-40. Doi: 10.21276/sjet.2019.7.2.1.

21. **Ammar Alkhalidi**, Sufyan Tahat, Mohammed Smadi, Bahaa Migdady, and Hazem Kaylani, Risk Assessment Using the Analytic Hierarchy Process (AHP) While Planning and Prior to Constructing Wind Projects in Jordan, *Wind Engineering*, 2019, Vol. 44(3), 282-293. DOI: <https://doi.org/10.1177/0309524X19849862>.
22. **Ammar Alkhalidi**, and Walaa Hassan. “Comparing Between Best Energy Efficient Techniques Worldwide with Existing Solution Implemented in Al-Ahliyya Amman University.” *Int. J. of Thermal & Environmental Engineering*, Vol. 17 (1), 2019, pp. 1–10. <https://doi.org/10.5383/ijtee.17.01.001>.
23. Suhil Kiwan, Obieda Zeitoun and **Ammar Alkhalidi**, “Transient Heat Transfer for the Cooling of PVC Tubes using Water Jet”. *Experimental Thermal and Fluid Science*, 2019, Vol. 102, 2019, pp. 539-547. DOI: <https://doi.org/10.1016/j.expthermflusci.2018.12.027>.
24. Moh’d A. Al-Nimr, Wahib A. Al-Ammari and **Ammar Alkhalidi**, “A Novel Hybrid Photovoltaics/ Thermoelectric Cooler Distillation System”. *International Journal of Energy Research*, 2018, Vol. 43(2), pp. 791-805. DOI: 10.1002/er.4309.
25. Ahmed A. Alkhafaji, **Ammar Alkhalidi**, and Ryoichi S. Amano, “Effect of Water Column Height on the Aeration Efficiency Using Pulsating Air Flow”. *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 12 (1), 2018, pp. 45-50.
26. Mazin Obaidat, Ahmed Al-Ghandoor, Patrick Phelan, Rene Villalobos, and **Ammar Alkhalidi**, Energy and Exergy Analyses of Different Aluminum Reduction Technologies. *Sustainability*, Vol. 10(4), 2018, p.1216. DOI: <https://doi.org/10.3390/su10041216>.
27. Wael Al-Kouz, Ahmad Al-Muhtady, **Ammar Alkhalidi**, Haneen Saadeh, Suhil Kiwan, Aiman Alshare, Two-dimensional analysis of low-pressure flows in a square cavity with two fins, *International Journal of Thermal Sciences*, Elsevier, Vol. 126, 2018, pp 181–193. DOI: <https://doi.org/10.1016/j.ijthermalsci.2018.01.005>.
28. Wael Al-Kouz, Suhil Kiwan, **Ammar Alkhalidi**, Ma’en Sari, Aiman Alshare, Numerical study of heat transfer enhancement for low-pressure flows in a square cavity with two fins attached to the hot wall using Al₂O₃-air nanofluid, *Strojniški vestnik - Journal of Mechanical Engineering*, Vol. 64(1), 2018, pp. 26-36.
29. **Ammar Alkhalidi**, Louy Qoaider, Amjad Khashman, Abdel Rahman Al-Alami, Said Jiryas, “Energy and Water as Indicators for Sustainable City Site Selection and Design in Jordan using smart grid”, *Sustainable Cities and Society*, Elsevier, Vol. 37, 2018, pp. 125-132. <https://doi.org/10.1016/j.scs.2017.10.037>.
30. **Ammar Alkhalidi**, Suhil Kiwan, Wael Al-Kouz, Aiman Alshare, Ma’en Sari, “Rarefaction and Scale Effects on Heat Transfer Characteristics for Enclosed Rectangular Cavities Heated From Below”, *Thermal Science*, 2019, Vol. 23 (3B), pp. 1791-1800. <https://doi.org/10.2298/TSCI170621234A>.

31. Wael Al-Kouz, Suhil Kiwan, Aiman Alshare, Ahmad Hammad, and **Ammar Alkhalidi**, “Two Dimensional Analysis of Low Pressure Flows In The Annulus Region Between Two Concentric Cylinders With Solid Fins”. *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 10 (4), 2016, pp. 211-214.
32. **Ammar Alkhalidi**, Patric Bryar, and Ryo Amano, “Improve Mixing In Water Aeration Tanks Using Innovative Self-Powered Mixer and Power Reclamation From Aeration Tank”, *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 10 (3), 2016, pp. 253 – 261.
33. Wael Al-Kouz, Maen Sari, Suhil Kiwan, and **Ammar Alkhalidi**, “Rarefied Flow and Heat Transfer Characteristics over a Vertical Stretched Surface”, *Advances in Mechanical Engineering*, Vol. 8(8), 2016, pp. 1–13.
34. Wael Al-Kouz, Aiman Alshare, **Ammar Alkhalidi**, and Suhil Kiwan, “Two-Dimensional Analysis of Low Pressure Flows In The Annulus Region Between Two Concentric Cylinders”, *Springerplus*, 2016, Vol. 5, pp. 5-29, Doi 10.1186/S40064-016-2140-6.
35. **Ammar Alkhalidi**, Hasan Al Ba’ba’a, And Ryo Amano, “Wave Generation In Subsurface Aeration System: A New Approach To Enhance Mixing In Aeration Tank In Wastewater Treatment”. *Desalination and Water Treatment*, 2016, DOI:10.1080/19443994.2016.1172263.
36. **Ammar Alkhalidi**, Suhil Kiwan, Wael Al-Kouz, and Aiman Alshare “Conjugate Heat Transfer in Rarefied Gas in Enclosed Cavities, *Vacuum*, Vol. 130, 2016, pp. 137–145. Doi:10.1016/J.Vacuum.2016.05.013.
37. Aiman Alshare, Wael Al-Kouz, Motaser Hader and **Ammar Alkhalidi**, “Computational modeling of gaseous flow and heat transfer in a wavy microchannel”, *Journal of Mechanical and Industrial Engineering*, Vol. 10 (1), 2016, pp. 75- 83.
38. **Ammar Alkhalidi**, Hasan Jarad, and Mohammad Juaidy, “Glass Properties Selection Effect on LEED Points for Core and Shell High Rise Residential Building in Jordan,” *Int. J. Therm. Environ. Eng.*, vol. 13, no. 1, pp. 29–35, 2016.
39. **Ammar Alkhalidi**, M.ohammad Qandil, and Hasan Qandil, “Analysis of Ocean Thermal Energy Conversion Power Plant Using Isobutane As The Working Fluid”, *Int. J. of Thermal & Environmental Engineering*, Volume 7, No. 1, 25-32, 2014. Doi: 10.5383/Ijtee.07.01.004.
40. **Ammar Alkhalidi**, and Ryo Amano, “Factors Affecting Fine Bubble Creation and Bubble Size For Activated Sludge,” *Water and Environment Journal*, Vol. 29, pp. 105–113, 2015, Doi: 10.1111/Wej.12083.
41. **Ammar Alkhalidi**, Yousef Zurigat, Belal Dawoud, Taha Aldoss, and Georgios Theodoridis, “Condenser Designs for Greenhouse Desalination”, *Int. J. of Sustainable Water and Environmental Systems*, 2013, Vol. 5, No. 1, 1-6. Doi: 10.5383/Swes.05.01.001.

42. **Ammar Alkhalidi**, Shahd Shammout, And Mohamad K. Khawaja, “Effect of surface finish reflectance on energy consumed by lighting”, Environmental and Climate Technologies, 2021, Submitted.
43. **Ammar Alkhalidi**, And Mohamad K. Khawaja, “Municipal water facilities' footprint assessment through the utilization and implementation of a water-energy balance database”, Urban Water Journal, 2021, Submitted.
44. **Ammar Alkhalidi**, Muna Alqroum, Amani Al Tmimi, Mohamad K. Khawaja, “Innovative City Pattern Mimicking Sunflower – part 1: urban planning”, Urban Climate, 2021, Submitted.
45. **Ammar Alkhalidi**, Muna Alqroum, Amani Al Tmimi, Mohamad K. Khawaja, “Innovative City Pattern Mimicking Sunflower – part 2: Solar Energy”, Urban Climate, 2021, Submitted.
46. **Ammar Alkhalidi**, Khaled Alqarra, “Curtailed Energy in Jordan, Turning adversity into a gift”, Energy Reports, 2021, Submitted.
47. **Ammar Alkhalidi**, Tuqa Alrousan, “Safety Recommendations for Compartments Containing Lithium-Ion, Lead-Acid and Nickel-Type Batteries”, Journal of Energy Storage, 2021, Submitted.
48. **Ammar Alkhalidi**, Bassam Darwish, Mohamad Khawaja, “Ducted wind turbine systems’ review and improvements”, Sustainable Energy Technologies and Assessments, 2021, Submitted.
49. **Ammar Alkhalidi**, Suhil Kiwan, and Abdullah Al-Hayajneh, “Experimental Investigation of Water Desalination Using Freezing Technology”, Sustainable Energy Technologies and Assessments, 2021, Submitted.
50. **Ammar Alkhalidi**, Nouredine Alawawdeh, and Hazem Alkaylani, “Technology Assessment of Offshore Wind Turbines: Floating and Hybrid Platforms”, Ocean Engineering, 2021, Submitted.
51. **Ammar Alkhalidi**, hala Jarah, “Innovative portable hybrid system of algae and hydroponics to produce food and biofuels”, Trends in Biotechnology, 2021, Submitted.

PUBLICATIONS: CONFERENCE PAPERS

52. **Ammar Alkhalidi**, Majd Al Salaitah, and Muath Al Basyouni. "Wind Turbine Runaway Safety System: Design and Concept." In 2021 12th International Renewable Engineering Conference (IREC), pp. 1-7. IEEE, 2021. DOI: 10.1109/IREC51415.2021.9427834.
53. **Ammar Alkhalidi**, Mohammed Abu Nukta, Ashraf Dawagreh, and Moad Jadaan. "Chi-Squared Test to Investigate the Causes and Effects of Overcrowding In Emergency Department: at King Abdullah University Hospital (KAUH)." In 2021 12th International

- Renewable Engineering Conference (IREC), pp. 1-4. IEEE, 2021. DOI: 10.1109/IREC51415.2021.9427809.
54. Safaa J Al-Suwaidi, Amani I Al-tmimi, **Ammar A Alkhalidi**, Designing a sustainable city in Iraq and using SAM program to calculating renewable energy. International Scientific Conference ISC – KUS 2020. Al-Karkh University of Science, Bagdad, Iraq, 2-3 Dec 2020.
 55. Suhil Kiwan, Hisham Ahmad, **Ammar Alkhalidi**, Wahib Owhaib, Wael Al-Kouz, Photovoltaic Cooling Utilizing Phase Change Materials, The 6th International Conference on Renewable Energy Technologies (ICRET 2020). Perth, Australia, January 8-10, 2020. DOI: 10.1051/e3sconf/202016002004.
 56. **Ammar Alkhalidi**, Ahmad Fraihat, and Khaled Masaeed, “Micro-Smart Wind Collecting Technology”. 7th International Renewable and Sustainable Energy Conference (IRSEC 2019), November 27-30, 2019, Agadir, Morocco. DOI: 10.1109/IRSEC48032.2019.9078160
 57. **Ammar Alkhalidi**, Suhil Kiwan, and Haya Hamasha. “A Comparative Study between Jordanian Overall Heat Transfer Coefficient (U-Value) and International Building Codes”. The 10th International Renewable Energy Congress (IREC 2019), March 26-28, Sousse, Tunisia. DOI: 10.1109/IREC.2019.8754639.
 58. **Ammar Alkhalidi** and Dana Abusubaih, “Energy Efficient Aquaponics” The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018), Ras Al Khaimah-UAE, November 13-15, 2018.
 59. **Ammar Alkhalidi**, Asem Alemam, Abdallah Alemam, and Mohammad Khasawneh, “Nanoparticles Applications in Water Industry: A Review” The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018), Ras Al Khaimah-UAE, November 13-15, 2018.
 60. **Ammar Alkhalidi**, Ro'a Almahmood, and Hiba Malkawi, “Customs exempt car and friendly to the environment, what are the barriers that prevent its adoption? A case study in Jordan” The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018), Ras Al Khaimah-UAE, November 13-15, 2018.
 61. **Ammar Alkhalidi**, Yazeed Al-Mousa, Mustafa Zubeidy. “Wind Turbine Coupled with Perpetual Motion”. In 2017 International Renewable and Sustainable Energy Conference (IRSEC) 2017 Dec 4m Tangier, Morocco (pp. 1-4). IEEE. DOI: 10.1109/IRSEC.2017.8477256.
 62. **Ammar Alkhalidi**, and Ryo S. Amano, “KLa Relation with Bubble Size, Bubble Release Rate, and Number of Bubbles”. International Conference on Water, Energy, and Environment (ICWEE 2017) February 28 – March 2, 2017, Sharjah, UAE.

63. Ryoichi S. Amano, **Ammar Alkhalidi**, and Ahmed Alkhafaji. "Study of Aeration by Using Pulsating Air Flow", 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-1837), Grapevine, Texas. <https://doi.org/10.2514/6.2017-1837>.
64. Hammad, Ahmad, Wael Al-Kouz, Aiman Alshare, Suhil Kiwan, and **Ammar Alkhalidi** (2016). Flow characteristics for low pressure solar parabolic trough collector. Proceeding of SEE 2016 conference, Osaka – Japan, 21-23 November 2016.
65. Louy Qoaider, **Ammar Alkhalidi**, and Nouf Alheyari, "Investigation of The Cooling of PV Modules Using Phase Change Materials", The 9th International Conference on Sustainable Energy and Environmental Protection (SEEP 2016), 22–25 September 2016, Kayseri, Turkey.
66. Weal Al-Kouz, Suhil Kiwan, Aiman Alshare, and **Ammar Alkhalidi**, "Flow and Heat Characteristics of Low Pressure Flows in the Annulus Region between Two Concentric Horizontal Cylinders", 9th International Conference on Thermal Engineering: Theory and Applications, March 24-26 2016, Abu Dhabi, UAE.
67. **Ammar Alkhalidi**, Hasan Jarad, Mohammad Juaidy, and Louy Qoaider, (2015), "Glass Properties Selection for Core and Shell High Rise Residential Building in Moderate Climate", 5th JIIRCRAC '15 2015 5th Jordanian Conference on Refrigeration and Air Conditioning, 5th JIIRCRAC. 12-14 January 2015. Aqaba, Jordan.
68. Hasan B. Al Ba'ba'a, Michael A. Prada, Christopher D. Olson, **Ammar Alkhalidi**, Ryoichi S. Amano, Jin Li (2014), "An Experimental Study of Reducing Back Pressure of Fine Air Diffuser Used In Wastewater Plants", Proceedings of ASME: FEDSM, August 3-7, 2014, Chicago, IL. <https://doi.org/10.1115/FEDSM2014-21203>.
69. **Ammar Alkhalidi**, "Solar Steam Generator, Using Saturated Ponds", (IREDEW 2013) International Conference on Integrated Renewable Energy, Desalination and Water Supply, Amman, Jordan. October 7th-9th, 2013.
70. **Ammar Alkhalidi** and Yousef Zurigat, "Condenser Designs For Greenhouse Desalination", ICEWE 2013- International Conference On Energy, Water & Environment, The Hashemite University, Zarqa, Jordan, April 21-23, 2013.
71. Ryo Amano, **Ammar Alkhalidi**, and Patrick Bryar, "Design of A Deflector For Water Aeration In Wastewater Treatment". Proceedings of 2012 ASME IMECE International Mechanical Engineering Congress & Exposition November 9-15, 2012, Houston, Texas, USA. <https://doi.org/10.1115/IMECE2012-86943>.
72. **Ammar Alkhalidi**, and Ryo Amano, "Water Aeration in Wastewater Treatment". Proceedings of the ASME 2012 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference ASME DETC/CIE August 12-15, 2012, Chicago, Illinois. <https://doi.org/10.1115/DETC2012-71524>.

73. **Ammar Alkhalidi**, and Ryo Amano, “Bubble Deflector to Enhance Fine Bubble Aeration for Wastewater Treatment in Space Usage”. American Institute of Aeronautics and Astronautics (AIAA-ASM). Nashville TN, Jan. 2012. <https://doi.org/10.2514/6.2012-999>.
74. Cheng Xu, Ryo Amano, **Ammar Alkhalidi**, “Aerodynamic Analysis in Lean Blade Effects in Centrifugal Compressor”. Proceedings of 2011asme IMECE: ASME International Mechanical Engineering Congress & Exposition November 11-17, 2011, Denver, Colorado. <https://doi.org/10.1115/IMECE2011-64239>.
75. **Ammar Alkhalidi**, and Ryo Amano, “Factor Affecting Bubble Creation and Bubble Size”. Proceedings of 2011asme IMECE: ASME International Mechanical Engineering Congress & Exposition November 11-17, 2011, Denver, Colorado. <https://doi.org/10.1115/IMECE2011-62117>.
76. **Ammar Alkhalidi**, and Ryo Amano, “Study of Air Bubble Creation For Aerospace Applications”. American Institute of Aeronautics and Astronautics (AIAA) San Diego, Aug. 2011. Water Aeration Project - Study of Enhanced Aeration System, Proceedings of 2011asme IDETC: ASME International Design Engineering Technical Conference August 28-31, 2011, Washington, Dc. <https://doi.org/10.2514/6.2011-5742>.
77. Ryo Amano, Rayan Malloy, and **Ammar Alkhalidi** “Improvement of Wind Turbine Blade Aerodynamics,” Proceedings of the 1st International Nuclear and Renewable Energy Conference (INREC10), Amman, Jordan, March 21-24, 2010. DOI: 10.1109/INREC.2010.5462581.
78. **Ammar Alkhalidi**, Yousef Zurigat, Belal Dawoud, Taha Aldoss, and Georgios Theodoridis. “Performance of A Greenhouse Desalination Condenser: An Experimental Study,” Proceedings of the 1st International Nuclear and Renewable Energy Conference (INREC10), Amman, Jordan, March 21-24, 2010. DOI: 10.1109/INREC.2010.5462564.
79. Ryo Amano, and **Ammar Alkhalidi** "Study of Air Bubble Formation Process in Aeration System." Proceedings of the ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis., Volume 3. Istanbul, Turkey. July 12–14, 2010. pp. 335-339. ASME. <https://doi.org/10.1115/ESDA2010-24045>.

CONFERENCES PARTICIPATION

Keynote Speaker:

- The First International Conference on Atmospheric Sciences, Mustansiriyah University, September 28-29, 2020, Baghdad, Iraq.
- International scientific conference ISC – KUS 2020, Toward an excellence and innovation scientific research in pure and applied science, Al-Karkh University, December 2-3, 2020, Baghdad, Iraq.

Session Chair:

- The 7th Edition of the International Renewable and Sustainable Energy Conference (IRSEC'19), November 27-30, 2019, Agadir, Morocco.
- The 10th International Renewable Energy Congress (IREC 2019) held on March 26 - 28, 2019 in Sousse, Tunisia.
- The 8th International Renewable Energy Congress (IREC 2017), March 21-23, 2017, Amman Jordan.
- The 5th Edition of the International Renewable and Sustainable Energy Conference (IRSEC'17), December 4-7, 2017, Tangier Morocco.
- International Conference on Integrated Renewable Energy (IREDEW 2013), Desalination and Water Supply, Amman, Jordan. October 7th-9th, 2013.

PRESENTATIONS AT PROFESSIONAL MEETINGS

- Energy Efficiency and Renewable Energy in Jordanian Water Sector, Entrepreneurship in Engineering, Design Thinking, **Funded by European Union**, December 24, 2020.
- Sustainable City Site Selection and Design in Jordan, Entrepreneurship in Engineering, Design Thinking, **Funded by European Union**, December 15, 2020.
- Moderator to Water-Energy Nexus discussion panel, as part of the Forum theme of Climate Change Adaptation & Sustaining Water Resources. **Funded By Middle East Water Research Center (MEDIRC)**, Muscat Oman. April 25, 2019.
- Solar Cooling For Industry And Commerce (SCIC) **Funded By GIZ Jordan**, Under International Climate Initiative (ICI), Dead Sea, Jordan, December 15-17, 2015.
- Evaluation of Solar Cooling project at German Jordanian University **Funded by GIZ Jordan**, Under International Climate Initiative (ICI), Dead Sea, Jordan, May 24-25, 2017.
- Energy Efficiency and Renewable Energy in Jordanian Water Sector, **Jordan Engineers Association**, Mechanical Engineering Scientific Committee, May 3, 2017.
- Energy Efficiency in Water and Waste Water Treatment, Summer School at the University of Applied Sciences Jena, Jena, Germany. June 19-30, 2016. **Funded By DAAD**.
- Lattice Boltzmann Method For Fluid Flow Presented During The Jordan-German Winter Academy Meeting. Amman February 5-12, 2006. **Funded By DAAD**.

GRADUATE STUDENT ADVISING

Supervisor and CO-Supervisor:

Ph.D., Thesis Supervision:

- Safa Jasim, Ph.D., Application of Siemens Index of Green Cities for Selected Areas in Iraq, Mustansiriyah University, Iraq, 2020.

M.Sc., Theses Supervision

- Rania Altawiel, Windmill distribution in wind farm, German Jordanian University, ongoing.
- Nouredine Alawawdeh, Technology Assessment of Offshore Wind Turbines: Floating and Hybrid Platforms, German Jordanian University, ongoing.
- Nour Alnajjar, Investigation of Microbial Fuel Cells (MFCs) Technology for Bio-Electricity Generation, German Jordanian University, ongoing.
- Hala Jarah, Study a portable hybrid system of algae and hydroponics to produce food and biofuels, German Jordanian University, ongoing.
- Bassam Darweesh, Integrated hybrid photovoltaic and Invelox wind turbine systems, German Jordanian University, 2021.
- Abdullah Al-Hayajneh, Experimental investigation of water desalination using freezing technology, Jordan University for science and technology, 2021
- Hamza Alkhatba, Investigation of Seasonal Thermal Energy Storage System in Buildings, German Jordanian University, 2020.
- Marwa Gaith, MENA Region Legislation for End-of-Life Photovoltaic Panels and Their Environmental Impacts-Highlighting Status in Jordan, German Jordanian University, 2020.
- Yazeed Jarabah, Solar Desalination Tower, novel design, for power generation and water distillation using steam only as working fluid, German Jordanian University, 2020.
- Muna Al Qroum, Energy Efficiency in Urban Planning, German Jordanian University, 2020.
- Ibrahim Awad, Investigation of innovative design for hydro turbine casing performance, German Jordanian University, 2019.
- Dina Hatuqay, Energy efficiency of additive manufactured built environment, German Jordanian University, 2019.
- Tareq Sabanekh, Investigation of Solar Disinfection System, German Jordanian University, 2019.
- Yara Abu Zeitoun, Experimental investigation of prefabricated positive energy building performance designed for remote areas in Jordan, German Jordanian University, 2018.
- Osama Al-Jolani, Modeling and Simulation of the Residential Green Building Model for Jordan, German Jordanian University, 2018.
- Abdel Ghaffar Al Kilany, Passive Cooling for PV Panel, German Jordanian University, 2018.
- Nouf Alheyari, Enhancing Efficiency of PV Module Through The Use Of Phase Change Material, German Jordanian University, 2017.

THESES COMMITTEE MEMBER:

-
- Sajdah Alzghoul, Jordan University of Science and Technology, 2021.
 - Mohannad Hosni Alqwasm, University of Jordan, 2021.

- Jamil Hussni Al-Enizat, University of Jordan, 2020.
- Asem Emam, Jordan University of Science and Technology, 2020.
- Bara Hamad, Jordan University of Science and Technology, 2020.
- Ahmad Alshibli, University of Jordan, 2020.
- Marya Abu Amer, Jordan University of Science and Technology, 2020.
- Ashraf Kiwan, Jordan University of Science and Technology, 2019.
- Thekra Al-Kasasbeh, University of Jordan, 2019.
- Ghanem Kandah, Jordan University of Science and Technology, 2019.
- Mohamad Bani-Ata, University of Jordan, 2019.
- Mohamad Alzoubi, Jordan University of Science and Technology, 2019.
- Amal Jaradat, Jordan University of Science and Technology, 2019.
- Mohammad Alradaideh, Jordan University of Science and Technology, 2019.
- Sa'ed Althawabiah, German Jordanian University, 2018.
- Hadeel Alnajar, German Jordanian University, 2018.
- Dema Abu Neamah, German Jordanian University, 2018.
- Hussain Sharadqah, Jordan University of Science and Technology, 2017.
- Mays Shaeli, German Jordanian University, 2017.
- Saif Al Hamad, Jordan University of Science and Technology, 2017.
- Ala'a Alnatsheh, German Jordanian University, 2017.
- Rami Hussein, German Jordanian University, 2016.
- Hussein Al-Salami, German Jordanian University, 2015.

REVIEWER

- Engineering Science and Technology, Elsevier.
- Desalination, Elsevier.
- Experimental Heat Transfer, Taylor & Francis.
- Journal of Engineering and Technological Sciences.
- Journal of Energy Resources Technology, ASME.
- Sustainable City and Society Journal, Elsevier.
- International Journal of Thermal Sciences, Elsevier.
- International Journal of Rotating Machinery, Hindawi.
- Canadian Journal of Physics, NRC research press.
- Energy and Buildings, Elsevier.
- Energy and Environment, SAGE Journals.
- Journal of Building Physics, SAGE Journals.
- International Journal of Renewable Energy Research.
- Jordan Journal of Mechanical and Industrial Engineering.

- The Jordanian Journal of Physics.
- Journal of Solar Energy and Sustainable Development (JSESD).
- International Journal of Exergy (IJEX).
- The 10th National Technology Parade, Queen Rania Center for Entrepreneurship.

TRAINING WORKSHOPS:

- Train the Trainer program of the GJU project with a scholarship from **DAAD** during the period of 07.09.2017 to 07.10.2017.
- STAR CCM+ CFD Software, CD-ADAPCO, At University of Wisconsin-Milwaukee, March 25-26, 2011.
- Cradle CFD Software Training Course. Cradle Company at University of Wisconsin Milwaukee, Feb 11-12, 2010.
- Corrosion and Cathodic Protection, Jordan Engineering Association Training Center Aug 13-17, 2006.
- **A.E.S.T.E** (The International Association for the Exchange of Students for Technical Experience) Training Fellowship, 7/2003 - 9/2003.
- Computer Maintenance Software and Hardware, University of Jordan Internet and Computer Club, June 18-29, 2000.

PROFESSIONAL MEMBERSHIPS

- Member, of The American Society of Mechanical Engineers, ASME.
- Member, of The American Institute of Aeronautics and Astronauts, AIAA.
- Member, Jordan Engineers Association, JEA.

RESEARCHER PROFILE:

- **Research gate:** https://www.researchgate.net/profile/Ammar_Alkhalidi
- **Google Scholar:** <https://scholar.google.com/citations?user=uvGpuXMAAAAJ&hl=en>

SOCIAL ACTIVITIES:

- Co-Founder of Jordanian Young Scientists Academy (JYSA), JYSA Is A Nonprofit Organization That Aims To Advance The Academic Exchange of Outstanding Young Researchers In Jordan, May 2014.
- President, American Institute of Aeronautics & Astronautics Student Organization At UWM May 2009-June 2010.

PERSONAL INFORMATION:

- Country of Citizenship: **Jordan**
- Date of Birth: **1981**
- Marital Status: **Married**

REFERENCES:

- Prof. Yousef Zurigat, Academic Advisor, Mechanical Engineering Department, Professor, University of Jordan, zurigat@yahoo.com.
- Prof. Ryo Amano, Academic Advisor, Mechanical Engineering Department, university of Wisconsin Milwaukee, amano@uwm.edu.
- Prof. Moh'd Sami Ashhab, Chair, Mechanical Engineering Department, The Hashemite University, sami@hu.edu.jo.
- Prof. Arwa Abdelhay, Dean, School of Natural Resources, German Jordanian University, Arwa.Abdelhay@gju.edu.jo.