



- Oct. 2008 - Jun, 2009 • Lecturer, Mechatronics Engineering Department, German-Jordan University, (Amman, Jordan).
- Sep, 1999 - Oct, 2007 • Professor, Faculty of Engineering, Mu'tah University, (Karak, Jordan)  
In addition to the following positions and tasks:
- Sep, 2005 - Sep, 2007 • Dean, Faculty of Engineering, Al-Balqa Applied University, (Al-Salt, Jordan)
- Sep, 2002 - Sep, 2003 • Visiting Professor, Leave of absence, Mechanical Engineering Department, Faculty of Engineering Technology, Al-Balqa Applied University. (Marka, Jordan)
- Sep, 2001- Sep, 2002 • Visiting Professor, Sabbatical leave, Mechanical Engineering Department, University of Jordan, (Amman, Jordan)
- Sep, 1999 - Sep, 2001 • Vice-dean, Faculty of Engineering, Mu'tah University, (Karak, Jordan)
- Jul, 1994 - Sep, 1999 • Associate Professor, Mu'tah University, (Karak, Jordan)
- Sep, 1997- Sep, 1998 • Visiting Professor, Sabbatical leave, Fluid Mechanics Department, Technical University, Hamburg-Harburg-TUHH, (Hamburg, Germany)
- Aug, 1995 - Jul, 1996 • Coordinator for Engineering Students, Mu'tah University. (Karak, Jordan)
- Sep, 1994 - Sep, 1995 • Chairman of Mechanical Engineering Department, Mu'tah University, (Karak, Jordan)
- Jul, 1989 - Jul, 1994 • Assistant Professor, full-time Lecturer, Mechanical Engineering Department, Mu'tah University, (Karak, Jordan)
- Dec, 1983 - Oct, 1984 • Mechanical Engineer, Jordan Petroleum Refinery Company, (Zarqa, Jordan)
- Aug, 1983 - Dec, 1983 • Teaching Assistant, Mechanical Engineering Department, Yarmouk University, (Irbid, Jordan)
- Aug, 1981 - Aug, 1983 • Mechanical Engineer, Military Services, Royal Air Force, Workshops Headquarters, (Amman, Jordan)

## TEACHING EXPERIENCE

- Developing and teaching undergraduate courses and labs in: Hydraulic Machines & TurBines; Fluid Mechanics; Power Plants; Air-Conditioning Systems; Mechanical Engineering Design; Heating, Ventilation, and Air-conditioning (HVAC); Refrigeration; Thermodynamics; Heat Transfer; Energy Conversion, Engineering Measurements, and Energy Management (Postgraduate level).
- Supervising Senior projects
- Co-supervised MSc students at the University of Jordan, Mechanical Engineering Department, (Amman, Jordan)
- Co-examined MSc & Ph.D. students at University of Jordan, Mechanical Engineering Department, (Amman, Jordan)
- Headed the Students Training Committee, Faculty of Engineering. Mu'tah University, (Karak, Jordan)

## ADMINISTRATIVE EXPERIENCE

- Headed and Participated in several committees on different topics
- Participated in the mechanical design works of several buildings for the new campus of Mu'tah University (Karak, Jordan)
- Shared in preparing study plans for MSc program in Mechatronics and BSc programme in Autotronics at Al-Balqa Applied University, (Al Salt, Jordan)

## SCHOLARSHIPS, GRANTS, AND FUNDED RESEARCH

- |                           |   |
|---------------------------|---|
| 1997 - 1998               | • Alexander von Humboldt Fellowship, Bonn, Germany  |
| 1992 - 1994               | • "Biogas production", Higher Council for Science and Technology, (Amman, Jordan)   |
| 1991 - 1993               | • "Solar air heaters for drying purposes of agricultural products". Higher Council for Science and Technology. (Amman, Jordan). |
|                           | • "Large-scale integrated solar thermal system ", Mu'tah University. (Karak, Jordan)  |
| Sep, 1990<br>(Five weeks) | • British Council Grant-in-aid for turbulent separated flows and renewable energy projects at University of Leicester           |
| 1984 - 1989               | • Mu'tah University scholarship for M.Sc. and Ph.D.   |

## MEMBERSHIPS/ AFFILIATIONS

- **Member of the British Universities Graduates Association (BUA).** (Amman, Jordan)
- **Member of the Jordanian Club of Von Humboldt Fellows (HCJ).** (Amman, Jordan)
- **Member of the World Renewable Energy Network (WREN)**
- **Member of the Jordan Engineers Association.** (Amman, Jordan)
- **Member of the Organising Committee of the second International Conference on Refrigeration & Air-conditioning, April 18-20, 1992.** (Amman, Jordan)
- **Member of the Steering Committee of the World Renewable Energy Congress. Since Sep, 1992. (Jordan Representative).** (United Kingdom)
- **Member of the Editorial Board for the Journal of Mu'tah Lil-Bohooth Wa Al Dirasat, Natural and Applied Sciences Series, (Refereed and Indexed Journal), 1994 - 1995.**
- **Member of the International Conference of Energy Systems (ICES, 2K), Sep, 2000.** (Amman, Jordan)
- **Member of the International Conference on Latest Development in Refrigerated Storage, Transportation, and Display of Food Products, 28-30 March.** (Amman, Jordan)

## REVIEWER

- **Mu'tah Journal for Research and Studies.** (Jordan)
- **Yarmouk University Journal of Natural Sciences & Engineering.** (Jordan)
- **International Journal of Renewable Energy.** (England)

- **Damascus University Journal.** (Syria)
- **Al-Najah University Journal.** (Palestine)
- **The Second International Conference of Refrigeration and Air Conditioning, 1992.** (Amman, Jordan)
- **The Fourth Arab Conference for Solar Energy, 1993.** (Amman, Jordan)
- **The First Jordanian Mechanical Engineering Conference, June 1995.** (Amman, Jordan)
- **The Third Jordanian Mechanical and Industrial Engineering Conference (JMIEC), May 1999.** (Amman, Jordan)
- **The International Conference of Energy Systems (ICES, 2K), Sep. 2000.** (Amman, Jordan)
- **The first International Chemical Engineering Conference, University of Jordan, Sep. 2001.** (Amman, Jordan)
- **The Fourth Jordanian International Mechanical Engineering Conference (JIMIC 2001, Oct. 2001.** (Amman, Jordan)
- **The first Middle East Int. Conf. on Advances in Civil, Mech. and Material Engg., 10- 13 May, 2005.** (Amman, Jordan)

## CURRENT RESEARCH

- Pneumatic systems & Fluid power (Compressed air engine).
- Enhancement of braking power in vehicles.
- Solar air heaters for space heating using phase change materials.
- Integrated solar thermal heating with regional central heating systems.
- Biogas production from food residuals.
- Waste heat recovery.
- Single and two-phase flows, fluid mechanics.

## PUBLICATIONS

### Articles in Journals

- **Cockrell, D.J.; Nigim, Hi-I.; and Alhusein, M.A. (1989):** Turbulent Boundary Layer Development in the Presence of Small Isolated Two-Dimensional Surface Discontinuities. ASME, Journal of Fluid Engineering.111, 969-975.
- **Nimir, Y.L. and Alhusein, M.A. (1990):** A proposal for the Implementation of Solar Air Heaters in Chicken Farms. The Energy and the Environment into the 1990s, Vol. 2, Edited by A.M. Sayigh, Pergamon Press, 1990.
- **Alhusein, M.A. and Cockrell, D.J. (1992):** Small Two-Dimensional Surface Excrescences on Aircraft Wings Approaching Separation. AIAA Journal of Aircraft, 29, No.5. 899-907.
- **Mohamad, Z.; Alhusein, M.A.; and Alkhamis, T.M. (1992):** Experimental and Theoretical Evaluation of Basin Type Solar Still. Journal of Engineering/India, Vol.2, No. 3.
- **Alhusein, M.A.; Abu-Leiyeh, o.; and Inayatullah, G. (1993):** Optimal ComBined System of Renewable Energy Resources for Grid Connected Advanced Communities. International Journal of Renewable Energy, 3, No. 6/7, 563-566.
- **Alhusein, M.A. and Cockrell, D.J. (1993):** Characterization of Turbulent Boundary Layer Separation. Journal of Mu'tah for Research and Studies, 8, No.6, 9-26.

- **Alhusein, M.A. and Tyfour, W. (1994):** Rationalization of Design and Applications of the Parabolic Dish Solar Furnace. *Journal of Mu'tah for Research and Studies*, 9, No. 3, 211-222.
- **Alhusein, M.A. and Inayatullah, G. (1994):** Automobile Vapour Absorption Air Conditioning System Utilizing Exhaust Waste Heat: Analysis and Design. *Journal of Mu'tah for Research and Studies*, 9, No. 3, 25 1-269.
- **Alkhamis, T. M.; Alhusein, M.A.; and Kablan, M. M. (1998):** Utilization of Waste Heat from Kitchen Furnace of an Enclosed Campus, *J. Energy Conversion Management*. Vol. 39, No. 10, PP. 1113-1119.
- **Lenzing, T.; Friedel, L.; Cremers, J.; and Alhusein, M. (1998):** Prediction of the Maximum Full Lift Safety Valve Two-phase Flow Capacity. *Journal of Loss Prevention in the Process Industries* 11, PP. 307-321.
- **Lenzing, I.; Friedel, L.; and Alhusein, M. (1998):** Critical Mass Flow Rate in Accordance with the Omega-method of DIERS and the Homogeneous Equilibrium Model. *J. Loss Prevention in the Process Industries* 11, PP. 391-395.
- **Alkhamis, T. M.; Alhusein, M. A.; and Kablan, M. M. (1998):** Performance Evaluation of Coil Heat Exchanger as Waste Heat Recovery Equipment. *International Journal of Renewable Energy* 15-16/4004, PP. 2725-2728.
- **Shannak, B.; Friedel, L.; Alhusein, M.; and Azzi, A. (1999):** Experimental Investigation of Contraction in Single- and Two-phase Flow through Sharp-edged Short Orifice. *J. Research in Engineering Science*, 64, H, PP. 291-295.
- **Shannak, B.; Friedel, L.; and Alhusein, M. (1999):** Prediction of Single and Two-phase Flow Contraction through Sharp-edged Short Orifice. *J. Chemical Engineering Technology*, Vol. 22, No. 10. PP. 865-870.
- **Alkhamis, T. M. and Alhusein, M. A. (1999):** Cooked Waste Food as a Source of Biogas Production in an enclosed Campus. *Journal of Engineering/ India*. vol.9, No.1. PP.1-9.
- **Kablan, M. M.; Alhusein, M. A.; and Alkhamis, T. M. (1999):** Electricity Audit for the Household Sector of the Capital City of Jordan, Amman. *J. of Energy conversion and management*, Vol. 40, No. 17, PP. 1849-1861.
- **Alkhamis, T. M.; Alkhalzali, R.; Kablan, M. M.; and Alhusein, M. A. (2000):** Heating of a Biogas Reactor using Solar Energy System with Temperature Control Unit. *J. Solar Energy*, Vol. 69, No. 3, PP. 239-247.
- **Al-Hamdan, A.; Al-Ajlouni, M.; Alhusein, M.; Rudd, C. D.; and Long, A.C. (2000):** Behaviour of Core Materials during Resin Transfer Moulding of Sandwich Structures. *J. Materials Science and Technology*, Vol.16, No. 7, PP. 929-934.
- **Tyfour, W. and Alhusein, M. (2001):** Surface Damage Phenomena of Ductile Materials due to Solid Particle Erosion. *Journal of Mu'tah for Research and Studies*, vol.16, No.2.
- **Alhusein, M. and Nimir, Y. (2002):** Space Heating in Residential Buildings Utilizing Phase Change Materials. *Journal of Engineering/India*, vol.11, No.3.
- **Mustafa, R.; Nimir, Y.; and Alhusein, M. (2002):** Impact Failure of Continuous Fiber Reinforced Al-matrix Composites Subjected to Low-Velocity Impact. *Journal of Alexandria University, Egypt*. Vol.41, No.1.
- **Al-Salaymeh, A.; Alhusein, M.; and Durst, F. (2003):** Developed of two-wire thermal flow sensor for industrial applications. *J. Quality in Maintenance Engineering*. Vol. 9 No. 2. pp. 113-131.
- **Duwairi, H. M.; Al-Tahaine, H. A.; and Alhusein, M. A. (2004):** Dimensional analysis of non-convective salt-gradient solar pond. *J. Heat & Technology*, vol.22, No.2, PP.65-68.
- **Shannak, B.; Damseh, R.; and Alhusein, M. (2005):** Influence of Air Intake on Engine Exhaust Emissions. *J. Forschung im Ingenieurwesen*, vol.70, No.2, PP.128-132.

- **Al-Salaymeh, A.; Rabah, M.; and Alhusein, M. (2005):** Experimental Investigations of the Influence of the Working Fluids on the Performance of a Closed Two-Phase Horizontal Thermosyphon. *Int. J. of Heat Technology*, vol.23, No.2, PP. 131-139.
- **Al-Halhouli, A.T.; Abu-Mulaweh, H.I.; Hammad, M.; and Alhusein, M. (2007):** Experimental Apparatus for Two-Phase Slug Flow Pressure Drop in a Tee- Junction. *Int. J. of Mechanical Engineering Education*. ETCS and OLS Annual Report, April 2007.
- **Damseh, R.; Al-Azab, T.; Shannak, B.; and Alhusein, M. (2007):** Unsteady Natural Convection Heat Transfer of Micropolar Fluid over a Vertical Surface with Constant Heat Flux, *Turkish J. of Engineering & Environmental Sciences*, vol.31, No.4, PP.225-233.
- **Al-Halhouli, A.T.; Abu-Mulaweh, H.I.; Hammad, M.; Alhusein, M.; and Shannak, B. (2008):** Experimental Apparatus for Measurements of Two-Phase Slug Flow Pressure Drop in a Tee-Junction. *Int. J. of Mechanical Engineering Education*, vol. 36, No.3, PP.184-192.
- **Damseh R. A., Hammad M. and Alhusein M. A.:** Simple equations for evaluation of thermodynamic properties of carbon dioxide. Accepted, *Int. J. Heat Technology*.
- **Al-Halhouli, A.T.; Hammad, M.; Abu-Mulaweh, H.I.; Alhusein, M.; and Shannak, B. (2010):** Two-Phase Slug Flow Pressure Drop in a Tee-Junction. *Int. J. of Fluid Mechanics Research*. Vol. 37, No. 2, PP. 178-189.
- **Maha Alhyari, A. Al-Salaymeh, M. Irshidat, M. Kaltschmidtt, and U. Neuling (2018):** Life-Cycle Assessment of Power- to- Liquid Fuels for an Environmental Sound Transportation: Comparative Study. *Journal of Modern Environmental Science and Engineering*, vol. 4, No. 12, pp1198-1204.
- **Maha Alhyari, A. Al-Salaymeh, M. Irshidat, M. Kaltschmidtt, and U. Neuling (2019):** The Impact of Energy Source on the Life-Cycle Assessment of Power-to-Liquid Fuels. *J. of Ecological Engineering*, vol. 20, Issue 4, pp.239-244.
- **Safwat Hemidat, Motasem Saidan, Salam Al-Zu`bi, Mahmoud Irshidat, Abdallah Nassour and Michael Nelles (2019):** Potential Utilization of RDF as an Alternative Fuel to be Used in Cement Industry in Jordan. *J. of Sustainability*, vol. 11, pp. 1-23.

### Academic Conferences

- **Alhusein, M.A. and Cockrell, D.J. (1989):** The Response of Separated Turbulent Boundary Layer to the Upstream Presence of Small Two-Dimensional Surface Discontinuities. *Proceedings of the 4th International Joint Conference on Mechanical Engineering*. Technology, Zagazing University, Cairo. Egypt, March 1989.
- **Mohamad, Z. and Alhusein, M.A. (1990):** The Concept of Engineering Education between Fact and Planning. *Proceedings of the Symposium of the Role of Applied Engineering in Industrial Development*, at Mu'tah University, Jordan. Dec. 1990. (In Arabic).
- **Alhusein, M.A. and Inayatullah, G. (1992):** Automobile Vapour Absorption Air Conditioning System Utilizing Exhaust Waste Heat. *Proceedings of the 2nd International Conference on Refrigeration and Air-conditioning*, at Amman. Jordan. April 1992.
- **Alhusein, M.A. and Cockrell, D.J. (1992):** Characterization of Turbulent Boundary Layer Separation. *Proceedings of the 4th International Conference of Fluid Mechanics*, at Alexandria, Egypt. April 1992.
- **Alhusein, M.A.; Abu-Leiyeh, o.; and Inayatullah, G. (1992):** ComBined System of Renewable Energy Resources for Grid-Connected Advanced Communities *Proceedings of the 2nd. World Renewable Energy Congress*, at Reading, U.K. Sept. 1992.

- **Tyfour. W. and Alhusein, M.A. (1992):** Rationalization of Design and Applications of the Parabolic Dish Solar Furnace. “, Proceedings of the 2nd. World Renewable Energy Congress, at Reading, U.K. Sept. 1992.
- **Tyfour. W. and Alhusein, M. (1997):** Surface Damage Phenomena of Ductile Materials due to Solid Particle Erosion. Conference of Material Science. Nov., Mu'tah University - Jordan.
- **Lenzing, T.; Friedel, L.; Cremers, J.; and Alhusein, M. (1998):** Prediction of the Maximum Full Lift Safety Valve Two-phase Flow Capacity. 1st Internet Conference on Process Safety, 27-29 January. 1998.
- **Alhusien, M. (1998):** Boiling delay. DECHEMA/GVC-Arbeitsausschuss Sicherheitsgerechtes Auslegen von Chemieapparaten. “DECHEMA- Hous, Frankfurt am Main, Germany. 2 1/22 April 1998.
- **Alkhamis, T. M.; Alhusein, M. A.; and Kablan, M. M. (1998):** Performance Evaluation of Coil Heat Exchanger as Waste Heat Recovery Equipment. World Renewable Energy Congress V, Florence, Italy, Sept. 20-25, 1998.
- **Al.Ajlouni, M.; Alhusein, M.; and Al-Hamdan, A. (1999):** Engine Exhaust Operated Ejector for Vehicle Air Conditioning. International Conference of Vehicles and systems progress, Sept., Volgograd - Russia.
- **Al.Ajlouni. M.; Alhusein, M.; and Al-Hamdan, A. (1999):** Diesel Engine Emissions Control. International Conference of Vehicles and systems progress, Sept., Volgograd - Russia.
- **Al-Hamdan, A.; Al-Ajlouni, M.; and Alhusein, M. (1999):** The Behaviour of Core Materials during Resin Transfer Moulding of Sandwich Structures. Metal Matrix Composites VII, Metal Foams & Layered Materials, 8-9 December, London.
- **Mustafa, R.; Nimir, Y.; and Alhusein, M. (2001):** Impact Failure of Continuous Fiber Reinforced Al-matrix Composites Subjected to Low-Velocity Impact. Accepted in PEDAC 2001, 13-15 Feb. Alexandria, Egypt.
- **Hammad, M.; Damseh, R.; and Alhusein, M. (2003):** Simple Equations for Evaluation of Thermodynamic Properties of Carbon Dioxide. IEEEES-1. Proc. Of The first int. Exergy, Energy and Environment Symposium. 13-17 July, Izmir, Turkey. Pp 25-27.
- **Daamseh, R. Hammad, H. and Al husein, M. (2005):** Performance of Carbon Dioxide Small Refrigerator. Int.Conf. On Latest Development in Refrigerated Storage, Transportation, and Display of Food Products, 28-30 March. Amman, Jordan.
- **Manna', R.; Alhusein, M.; and Hammad, M. (2005):** The Performance of a Chest Freezer using Liquefied Petrol Gas by Computer Simulation Method. Int.Conf on Latest Development in Refrigerated Storage, Transportation, and Display of Food Products, 28-30 March, Amman, Jordan
- **Al-Halhouli. A.; Alhusein, M.; Hammad, M.; and Al-Shannak, B. (2005):** Two- Phase Slug Flow Pressure Drop in a T-Junction. First Middle East mt. Conf. on Advances in Civil, Mech. and Material Engg.. 10-13 May, Amman, Jordan.
- **Al-Salaymeh, A.; Rabah, M.; and Alhusein, M. (2005):** Experimental Investigation of a Closed. Two-Phase Horizontal Heat Pipe “Thermosyphon” Under Different Conditions. IEEEES-2. Proc. of the Second Int. Exergy, Energy and Environment Symposium, 3-7 July, Kos, Greece.
- **Shannak, B.; Al-Qdah, K.; Al-Salaymeh, A.; Hammad, M.; and Alhusein, M. (2006):** Experimental Investigation of Two-Phase Flow Pressure Drop and Contraction on Tee-Junction. IEEE East-West & Test Workshop (EWDTW'06), 15-19 Sep. Sochi.

**Expertises and References available upon request**