

CURRICULUM VITAE

Personal information

Name: **Mahmoud Za'al Abu-Zaid**
Date of Birth: 4th March 1956
Place of Birth: Sahhab, Jordan
Nationality: Jordanian
Permanent Address: Mechanical Engineering Department
Faculty of Engineering
Mut'ah University Al-Karak, Jordan, (61710)

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Education:

Ph.D., Mechanical Engineering, Michigan State University, USA, 1989

M. Sc., Mechanical Engineering, University of Michigan, USA, 1985

B. Sc., Mechanical Engineering, Lawrence Institute of Tech., USA, 1982

Honors and Awards:

- Received thanks and appreciations award from Mut'ah University, for distinguished research contributions, in the role of university progress in international rankings, 2021.
- Received the best paper award of the Symposium "The State of Engineering Education in the Arab World", United Arab Emirates, 2003.
- Received Mut'ah University Award for Excellence in Teaching, Research, and Community Services, 1997.

- Received the Best Paper Award of the International Association for Fire Safety Science, for the paper entitled “Effect Environmental Variables on Piloted Ignition”, Ottawa, 1994.
- Received the Jordanian Government Encouragement Award in Science / Engineering, for the paper entitled “A New Technique for the Measurement of Fouling on Heat Transfer Surfaces”, 1992.
- Received a Fulbright Post-Doctoral Research Grant, 1990.
- Received a scholarship from Mut’ah University to study Ph. D. at Michigan State University, U.S.A., 1985.
- Received a scholarship from Mut’ah University to study Ms. C. at University of Michigan, U.S.A., 1984.
- Received a scholar ship from Jordan Armed Forces to study B. Sc. At Lawrence Institute of Technology, U.S.A.,1980.
- Graduated from Lawrence Institute of Technology with Summa Cum Luade (highest honors) at a GPA 3.95/4.00, 1982.

Professional Experience:

Retired Brigadier, Jordan Armed Forces, July 1977- Feb.2004.

Vice President, Al-Hussein Bin Talal University, Oct. 2005- Aug. 2007.

Sabbatical Leave, Tafila Technical University, Sep. 2016-Sept. 2017

Sabbatical Leave, The Hashemite University, Feb. 2009 – Feb. 2010.

Sabbatical Leave, University of Jordan, Sept. 2001 – Sept.20 02.

Sabbatical Leave, Al-Balqa University, Sept. 98 – Sept. 99

Chairman, Academic Coordinator, Mut’ah University, Military Wing Oct. 97 – Sept. 98

Vice Dean, Faculty of Engineering, Mut’ah University, Nov. 96 – Aug. 97

Director of Maintenance Unit, Mut’ah University, Oct. 94 – Nov. 96

Vice Dean, Faculty of Engineering, Mut’ah University, Aug. 92 – Oct. 94

Chairman, Mech. Eng. Department, Mut’ah University, May 91 – Aug. 92

Professor, Faculty of Eng., Mut’ah University, Sept. 2003- Date.

Associate Professor, Faculty of Engineering, Mut'ah University, Aug. 94 – Sept. 2003.

Assistance Professor, Faculty of Eng., Mut'ah University, March 89 – Aug. 94

Research Assistance with Prof. A. Atreya for a project sponsored by the National Institute of Standard and Tech. Michigan State University, Sept. 85 – Dec. 88

National Committees:

Chairman of Specialized Engineering Committee, Scientific Research Support Fund – Ministry of Higher Education and Scientific Research, Oct. 2009- Aug. 2010.

Member of Technical Committee, Scientific Research Support Fund – Ministry of Higher Education and Scientific Research, July. 2009- Aug. 2010

Applied Sciences Private University Board of Trustees, Jan. 2006-Dec. 2009.

Wadi Al-Sir Training College Board of Trustees, Jan. 2009-June 2012

Professional Affiliations:

- Member of Jordan Engineers Association
- Associate member of Tau Beta Pi, USA
- Member of Mut'ah University Energy Group

Teaching Experience:

- Supervised and discussed various Master and Ph. D thesis in Mut'ah University and Jordan University and Al-Hsien Bin Talal University.
- Teaching various courses in master program.
- Developing and teaching undergraduate courses and labs in the B. Sc. Program.
- **Supervised the following Master thesis, at Mut'ah University:**
- “Evacuated Tube Solar Collector Using Dead Sea Water”, 2017. -

- “Predicting PV Cell Performance by Artificial Neural Network”, 2017 -
- “Solar Charger Circuit to Cover the Total Power Consumption for Al karak - Government Hospital”, 2017.
- “Renewable Energy as a Solution to Meet the Growing Demand of Energy in Jordan”, 2019.
- “Energy Balance over Multi-Agent Smart Grid Environment Using Optimized Control Method”, 2019.
- “Design a Solar Power Air Conditioning System for the Engineering Faculty Building at Mut’ah University”, 2020.
- “Measures of Waste Avoidance Via Energy Recovery in Municipalities of Jordan: case study of Al karak, 2020.

Research Interests:-

- Ignition of Cellulosic Materials
- Fouling on Heat Transfer Surfaces
- Droplet Evaporation on Hot Surfaces
- Alternative Fuel for Internal Combustion Engines
- Development of Engineering Education
- Internal Combustion Engines
- Biofuels

Technical Activities and Participation in Committees:

- External Examiner for various Ph.D. and M. Sc. Dissertations at the University of Jordan.
- Member of The Scientific Committee at Mut’ah University.
- Chairman of Committee for preparation a tender for Governates Development and Capacity Building Program in Jordan, Mut’ah University, 2002.
- Chairman of The Higher Engineering Committee at Mut’ah University, 2000-2001.
- Chairman of The Disciplinary Committee for the students of the faculty of engineering at the University of Jordan for the academic year 2001/2002.
- Member of Accreditation Committee for Mechanical Engineering Specialty in the non-governmental universities, Ministry of Higher Education and Scientific Research, for the academic years 1999/2000, 2001/2002.

- Member of the Specialized Equivalence 1st Degree Committee in pure, applied, and engineering sciences, Ministry of Higher Education and Scientific Research, 2002-2003.
- Member of University Council, Faculty of Engineering Representative, Mut'ah University, 2001.
- Member of The Scientific Research Committee at Amman College for Engineering Technology, Al- Balqa University for the academic year 1998/1999.
- Member of the Study Plan Development Committee at Amman College for Engineering Technology, Al-Balqa University for the academic year 1998/1999.
- Member of The Evaluation Committee of the faculty members at Amman College for Engineering Technology, Al-Balqa University for the academic year 1998/1999.
- Member of The Scientific Study Plan Committee of the Scientific Faculties, Mut'ah University, 1997.
- Member of The Scientific Committee of the Second Jordanian International Conference for Mech. Eng. Amman, 1997.
- Member of the committee for preparation of necessary suggestions and recommendations for the improvement of academic work and scientific research at Mut'ah University, 1991.
- Mut'ah University representative to the workshop concerning the assessment of engineering manpower in the Arab world, Jordanian Engineers Association, 1991.

Publications:

- 1- **M Abu-Zaid** and A. Atreya, "Heat Transfer During Evaporation of a Water Droplet on a Heated Non-Porous Ceramic Solid," Eastern States Section, Combustion Institute Meeting, U.S.A., 1988.
- 2- A. Atreya, and **M. Abu-Zaid** "The Effect of Adsorbed Water on Piloted Ignition", Central States Section, Combustion Institute Meeting, U.S.A., 1988.
- 3- K. Mekki, A. Atreya and **M. Abu-Zaid** "Radiative and Convective Heat Flux Measurements in a Boundary Layer Diffusion Flame," – Poster, 23rd Int. Symposium on Combustion, France, 1990.
- 4- H. Zuriekat and **M. Abu-Zaid** "The Importance of Applied Engineering Education and its Role in Industry" Naser University 1st Int. Conf. On Engineering Education, Libya, 1991.

- 5- A. Atreya and **M. Abu-Zaid** "Effect of Environmental Variables on Piloted Ignition", Third Int. Symposium on Fire Safety Science, England, pp. 177-186, 1991.
- 6- H. Zuriekat and **M. Abu-Zaid** "Continuing Education for Engineers in the Southern Region of Jordan" Mut'ah Journal for Research and Studies, Natural and Applied Sciences Series, Vol. 7, No. 2, pp. 95-161, 1992.
- 7- **M. Abu-Zaid** "A New Technique for the Measurement of Fouling on Heat Transfer Surfaces," Int. Comm. in Heat and Mass Transfer Journal, Vol. 19, No. 1, pp. 117-125, 1992.
- 8- **M. Abu-Zaid** "An Experimental Study of the Evaporation of Gasoline and Diesel Droplets on Hot Surfaces," Int. Comm. In Heat and Mass Transfer Journal, Vol. 21, No. 2, pp. 315-322, 1994.
- 9- **M. Abu-Zaid** and A. Atreya "Effects of Air Velocity and External Radiation on Piloted Ignition of (PMMA)" Alexandria Engineering Journal, Vol. 33, No. 3, pp. A187-A194, July 1994.
- 10- **M. Abu-Zaid** and A. Atreya "Transient Cooling of Hot Porous and Non-Porous Ceramic Solids by Droplet Evaporation" Journal of Heat Transfer Vol. 116, No. 3, pp. 694-701, 1994.
- 11- **M. Abu-Zaid** "Design of an Experimental Apparatus for Measuring Fouling in Mut'ah University Heating Plant" The 2nd Jordanian Scientific Week, Amman, 1994.
- 12- **M. Abu-Zaid** and A. Atreya "The Effect of Adsorbed Water on Thermal Decomposition of Wood" The 5th Arab International Conference on Materials Science, pp. 257-280, Alexandria, Egypt, 1998.
- 13- **M. Abu-Zaid** "The Effect of Water Hardness on the Performance of Heat Transfer Equipment" The 1st Conference of Environmental Problems, Mut'ah University, 1998.
- 14- **M. Abu-Zaid** "Effects of the Momentum of Water Droplet on its Evaporation on Heated Surfaces" Alexandria Engineering Journal, Vol. 38, No. 2, pp. A123-A133, 1999.
- 15- M. Al- Busoul and **M. Abu-Zaid** "Prediction of Heat Transfer Coefficient Between Immersed Surfaces and Fluidized Beds " Int. Comm. in Heat and Mass Transfer Journal. Vol. 27, No. 4, pp. 549-558, 2000.
- 16- **M. Abu-Zaid**, "A Fouling Evaluation System for Industrial Heat Transfer Equipment Subject to Fouling", Int. Comm. in Heat and Mass Transfer

Journal. Vol. 27, No. 6, pp. 815-824, 2000.

- 17- **M. Abu-Zaid** "Droplet Evaporation on Porous and Non-Porous Ceramic Solids Heated from Top", Heat and Mass Transfer Journal. Vol. 38, pp 203-211, 2002.
- 18- **M. Abu-Zaid** and W. Tayfour "Effects of Wind Speed on the Overall Heat Loss from A Solar Dish Furnace Receiver", Proceeding of the: Renewable Energy Technologies for Clean Environment and Sustainable Development, University of Jordan, pp 1-14, 2002.
- 19- **M. Abu-Zaid** "An Experimental Study of the Evaporation Characteristics of Emulsified Liquid Droplets", Heat and Mass Transfer Journal, 40, pp. 737-741, 2004.
- 20- **M. Abu-Zaid** "Water Fouling in Natural Convection Conditions" Int. Comm. Heat and Mass Transfer Journal, Vol. 30, No. 7, pp. 1005-1014, 2004.
- 21- **M. Abu-Zaid** "Effect of Water Fouling on the Performance of Thermal Equipment". Int. Engineering Conference, Mut'ah University, 2004.
- 22- **M. Abu-Zaid** "Performance of Single Cylinder Direct Injection Diesel Engine Using Water Fuel Emulsions" Energy Conversion and Management, Vol. 45, No. 5, pp. 697-705, 2004.
- 23- **M. Abu-Zaid** and H. Zurikat "Continuing Education as an Active Means for Improving Capabilities of Engineers" Accepted and presented at the Symposium on the State of Engineering Education in the Arab World, United Arab Emirates, Sept. 2003.
- 24- **M. Abu-Zaid**, O. Badran, and J. Yamin "The Effect of Methanol Addition on the Performance of Spark Ignition Engines", Energy and Fuels Journal, 18, pp. 312-315, 2004.
- 25- **M. Abu-Zaid**, "The Use of Computer in Engineering Education by Faculty Members at Engineering College, Mut'ah University", The Use of Modern Technology in Engineering Education and Training Symposium, Arab Engineering Union, Amman, 2005.
- 26- J. Yamin, and **M. Abu-Zaid**, and O. Badran "Comparative Performance of Spark Ignition Engine Using Blends of Various Methanol Percentages with Low Octane Number Gasoline" Int. J. Environment and Pollution, Vol. 23, No. 3, pp. 336-344, 2005.
- 27- Taha Alkhamis, Abdelaziz khlaifat, **M. Abu-Zaid**, R. Oran, "EFFECTIVE INDUSTRY- ACADEMIA COOPERATION" Slide presentation, given at 4th International Forum on Engineering EDUCATION, Sharjah, UAE, 25-27, April (2006).
- 28- O. Badran, S. Emeish, **M. Abu-Zaid**, Abu-Rahma, M. Al-Hasan, and M. Al-Ragheb "Impact of Emulsified Water/Diesel Mixture on Engine Performance

- and Environment "International Journal of Thermal and Environmental Engineering. Vol, 3, No. 1, pp. 1-7, 2011.
- 29- Moh'd Ashhab, **M. Abu-Zaid**, Odai Baqaen, Maraam Khadiar, and Eyas Adel "Experimental Study of Emissions and performance of Internal Combustion Engine Fuels" International Journal of Thermal and Environmental Engineering, Vol, 3, No. 2, pp. 95-100, 2011.
- 30- E. Tarawneh. and **M. Abu-Zaid**, "Evacuated Tube Solar Collector Using Dead Sea Water", The First International Conference on Mechanical Engineering Sciences and Applications, Tafila Technical University, Jordan, 8-10 Oct. 2017.
- 31- **M. Abu-Zaid** " Experimental Study of the Performance of Compression Ignition Engine Using Various Bio Diesel Blends", International Journal of Mechanical and Production Engineering, Vol. 6, 2, pp. 63-65, 2018.
- 32 -**M. Abu-Zaid** "Evaluation of the Impact of Using Various Biodiesel Blends on the Performance of Diesel Engine at Variable Load Condition" 2019 3rd International Conference on Aerospace, Mechanical and Mechatronics Engineering, Kuala Lumpur, (21-24 Feb.), 2019.
- 33- Eman Al Tarawneh, **M. Abu-Zaid** " Renewable Energy as a Solution to Meet the Growing Demand of Energy in Jordan " IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), Vol. 16, Issue 6, pp 37-43, 2019.
- 34- Shahed Farajat, and **M. Abu-Zaid** "Design a Solar Power Air Conditioning System for the Engineering Building at Mut'ah University". Global Journal of Engineering and Technology Advances.), Vol. 5, 1, pp. 8-17, 2020.
- 35- Eyad Al Tarawneh, **M. Abu-Zaid** "A Comparison of Solar Energy Gaining Between Using Dead Sea Water and Normal Water in Evacuated Tube Collector", International Research Journal of Engineering and Technology, Vol. 7, Issue: 12, pp. 1898-1906, 2020.

Participated in the Following Conferences:

- 1- Workshop on the Modern Technical Application of New Materials, Held by: The Arab Organization for Education Culture and Science, Qatar, 6-9 Nov. 1994.
- 2- "Dynamics of Mideast Cooperation and Reforms: Problems, Progress, Prospects", The 7th Annual U. S. Mideast Policy Makers Conference, VA,

USA, 13-14 Sept. 1998.

- 3- “Fire Prevention/Fire Fighting-The UK Experience” Seminar and Table-Top Exhibition, Amman, 4-5 March 2002.