

Jamal O. Jaber, Ph.D.

Associate Professor

Department of Mechanical Engineering

Al-Balqa' Applied University, P.O. Box: 15008, Amman 11134, Jordan

Office phone: (+962 6 4790333) (Ext. 135), Fax: (+962 6 4790350)

E-mail: jojaber@gmail.com

EDUCATION:

- Ph.D., Cranfield University, England, UK, 1999, **Energy and Environment.**
- M.Sc., Cranfield Institute of Technology, England, UK, 1991, **Energy Conservation and the Environment.**
- B.Sc., Aleppo University, Syria, 1982, Mechanical Engineering/**Thermal Power.**

AREAS OF INTEREST:

Teaching

- Environmental Protection
- Power Plants
- Energy Conversion, Management and Conservation
- Thermodynamics and Fluids
- Gas Turbines Technology
- Internal Combustion Engines
- Fuels, Combustion and Air Pollution

Research

- Energy efficiency and analysis
- Pollution and environmental protection
- Thermal systems and energy management
- Oil shale utilization
- Desalination using non-conventional sources

WORK EXPERIENCE:

Registered Charter Engineer (Reg. No. 270) in fields of energy and environment at Jordan Engineers Association and Arab Engineers Union.

Academic

- Associate Professor, Department of Mechanical Engineering, Al-Balqa' Applied University, Jordan (March 2007-present).
- Assistant Professor Grade A, Department of Mechanical Engineering, Al-Balqa' Applied University, Jordan (February 2006-March 2007).

- Assistant Professor, Department of Mechanical Engineering, Hashemite University, Jordan (February 2000-February 2006). Started the job soon after the Faculty of Engineering was established late 1999, in the Hashemite University. The tasks include establishing the faculty from scratches, preparing technical specifications for most of tenders and equipment, participating in preparation of study plans and required personnel to run different divisions in the faculty.
- Assistant Manager, Center for Studies and Consultation, Hashemite University, Jordan (Oct. 2004-Oct. 2005).

Non-Academic

- Chief of the Central Energy and Environment Division, Ministry of Energy and Mineral Resources, Jordan (May 1993-February 2000).
- Energy Sector Coordinator, Restructuring and Adjustment Plan of Energy Sector, World Bank and Ministry of Energy and Mineral Resources, Jordan (January 1992-May 1993).
- Chief of the Energy Conservation Division, Ministry of Energy and Mineral Resources, Jordan (January 1988-May 1993).
- Principal Member in the Central Technical Traffic Office in the Ministry of Interior (1985-2000).
- Technical Member in the Central Tendering Committee, Ministry of Public Works and Ministry of Finance (1986-1990) as well as the Hashemite University (2002-2005).
- Energy Engineer, Ministry of Energy and Mineral Resources, Jordan (March 1985- January 1988).
- Maintenance and Development Engineer, Jordan Petroleum Refinery, Jordan (August 1983-February 1985).
- Consultant and Energy Manager, Part-Time Lecturer in Energy Conservation, Boilers and Burners, Fuels and Combustion, Jordan Engineers Association, Jordan (1993-present).

PUBLICATIONS:

Refereed Journals

1. A. Al-Ghandoor, **J.O. Jaber**, I. Al-Hinti, Residential past and future energy consumption: potential savings and environmental impacts, Energy and Buildings, Elsevier Science Journal, (2008), submitted paper.
2. A. Al-Ghandoor, P.E. Phelan, R. Villalobos, **J.O. Jaber**, , Energy utilization of the US manufacturing sector, Energy Policy, Elsevier Science Journal, (2008), submitted paper.
3. A. Al-Ghandoor, **J.O. Jaber**, M. Samhour, I. Al-Hinti, Understanding aggregate electricity intensity change of the Jordanian industrial sector using decomposition technique, International Journal of Energy Research, (2008), submitted paper.

4. A. Al-Ghandoor, **J.O. Jaber**, Analysis of energy and exergy utilization of Jordan's agricultural sector, *International Journal of Exergy*, (2008), accepted paper and in press.
5. **J.O. Jaber**, A. Al-Ghandoor, S. Sawalaha, Energy analysis and exergy utilization in the transportation sector of Jordan, *Energy Policy*, Elsevier Science Journal, (2008), accepted and in-press (JEPO 2811).
6. **J.O. Jaber**, T.A. Sladek, S. Mernitz, Future policies and strategies of oil shale development in Jordan, *Jordan Journal of Mechanical and Industrial Engineering*, Jordanian Ministry of Higher Education and Scientific Research, (2008), accepted and in-press.
7. **J.O. Jaber**, Influence of heating rate, temperature and grain size on drying behaviour of the Attarat oil shale, *Energy Sources (ESO/06/042)* accepted and in-press 2006).
8. A. Al-Ghandoor, I. Al-Hinti, **J.O. Jaber**, S. Sawalaha, Electricity consumption and associated GHG emissions of the Jordanian industrial sector: Empirical analysis and future projection, *Energy Policy*, Elsevier Science Journal, (2008), Vol. 36, pp. 258–267.
9. A. Al-Ghandoor, I. Al-Hinti, **J.O. Jaber**, S. Sawalaha, Electricity consumption and associated GHG emissions of the Jordanian industrial sector: Empirical analysis and future projection, *Energy Policy*, Elsevier Science Journal, (2008), Vol. 36, pp. 258–267.
10. **J.O. Jaber**, Q. Jaber, S. Sawalaha, M.S. Mohsen, Evaluation of conventional and renewable energy sources for space heating in the household sector, *Renewable and Sustainable Energy Reviews*, Elsevier Science Journal, (2008) Vol. 12, pp. 287-289.
11. Q.M. Jaber, **J.O. Jaber**, A.A. Khawaldah, Assessment of power augmentation from gas turbine power plants using different air cooling systems, *Jordan Journal of Mechanical and Industrial Engineering*, Jordanian Ministry of Higher Education and Scientific Research, (2007), Vol. 1, No.1, pp. 7-15.
12. K.M. Ibrahim, **J.O. Jaber**, Geochemistry and environmental impacts of retorted oil shale from Jordan, *Environmental Geology*, Springer, (2007), Vol. 52, pp. 979-984.
13. S. Odeh, B. Akash, **J.O. Jaber**, M. Droubi, S. Touri, W. Farajallah, Flow chart of energy waste in Jordan, *International Journal of Mechanical & Materials Engineering*, (2006), Vol. 1, No. 2, pp. 76-81.
14. A. Al-Sarkhi, **J.O. Jaber**, S.D. Probert, Efficiency of a Millar engine, *Applied Energy*, Elsevier Science Journal, (2006), Vol. 83, pp. 153-165.
15. A. Al-Sarkhi, **J.O. Jaber**, M. Abu-Qudais, S.D. Probert, Effect of friction and temperature-dependent specific-heat of the working fluid on the performance

- of a diesel engine, *Applied Energy*, Elsevier Science Journal, (2006) Vol. 83, pp. 343-351.
16. **J.O. Jaber**, M. Abu-Qudis, S. Sawalha, Kinetics of pyrolysis of Attarat oil shale by thermogravimetry, *Oil Shale*, Estonian Science Academy, (2006) Vol. 22, pp. 51-63.
 17. **J.O. Jaber**, R. Mamlook, W. Awad, Evaluation of energy conservation programs in residential sector using fuzzy logic methodology, *Energy Policy*, Elsevier Science Journal, (2005) Vol. 33, pp. 1329-1338.
 18. M.D. Afonso, **J.O. Jaber**, M. Mohsen, Brackish groundwater treatment by reverse osmosis in Jordan, *Desalination*, Elsevier Science Journal, (2004) Vol. 164, pp. 157-171.
 19. **J.O. Jaber**, O.O. Badran, N. Abu-Shikhah, Sustainable energy and environmental impact: role of renewables as clean and secure source of energy for the 21st century in Jordan, *Clean Technologies and Environment Policy*, Springer-Verlag Heidelberg Journal, (2004), Vol. 6, pp. 174-186.
 20. **J.O. Jaber**, A. Al-Sarkhi, B. Akash, M. Mohsen, Medium-range planning economics of future electrical power generation, *Energy Policy*, Elsevier Science Journal, (2004), Vol. 32, pp. 357-366.
 21. **J.O. Jaber**, S.D. Odeh, S.D. Probert, Integrated PV and gas turbine system for satisfying peak-demands, *Applied Energy*, Elsevier Science Journal, (2003), Vol. 76, pp. 305-319.
 22. B. Akash, **J.O. Jaber**, Characterization of shale oil as compared to crude oil and some refined petroleum products, *Energy Sources*, Taylor and Francis Journal, (2003), Vol. 25, pp. 1171-1182.
 23. A. Al-Sarkhi, E. Abu-Nada, B. Akash, **J.O. Jaber**, Numerical investigation of shrouded fin array under combined free and forced convection, *International Communications in Heat and Mass Transfer*, Elsevier Science Journal, (2003), Vol. 30, pp. 435-444.
 24. **J.O. Jaber**, M. Mohsen, A. Al-Sarkhi, B. Akash, Energy analysis of Jordan's commercial sector, *Energy policy*, Elsevier Science Journal, (2003), Vol. 31, pp. 873-880.
 25. A. Al-Sarkhi, B. Akash, **J.O. Jaber**, M. Mohsen, E. Abu-Nada, Efficiency of Miller engine at maximum power density, *International Communications in Heat and Mass Transfer*, Elsevier Science Journal, (2002), Vol. 29, pp. 1159-1167.
 26. M. Mohsen, **J.O. Jaber**, Potential of industrial wastewater reuse, *Desalination*, Elsevier Science Journal, (2002), Vol. 152, pp. 281-289.

27. **J.O. Jaber** and S.D. Probert, Purchased-energy consumption in Jordan's commercial and public-service sector, *Applied Energy*, Elsevier Science Journal, (2002), Vol. 71, pp. 31-43.
28. **J.O. Jaber**, Future energy consumption and greenhouse gas emissions in Jordanian industries, *Applied Energy*, Elsevier Science Journal, (2002), Vol. 71, pp. 15-30.
29. **J.O. Jaber**, Prospects of energy savings in residential space heating, *Energy and Buildings*, Elsevier Science Journal, (2002), Vol. 34, pp. 311-319.
30. **J.O. Jaber**, Greenhouse gas emissions and barriers to implementation in the Jordanian energy sector, *Energy Policy*, Elsevier Science Journal, (2002), Vol. 30, pp. 385-395.
31. **J.O. Jaber**, M. Mohsen and M. Amr, Where to with Jordanian oil shales, *Oil Shale*, Estonian Science Academy Journal, (2001), Vol. 18, pp.401-421.
32. **J.O. Jaber**, M. Mohsen and S.D. Probert, Free moisture removal from oil shales, *International Journal of Thermal Sciences*, Elsevier Science Journal, (2001), Vol. 40, pp. 858-863.
33. M. Mohsen, **J.O. Jaber**, A photovoltaic powered system for water desalination, *Elsevier Science Journal*, (2001), Vol. 138, pp. 129-136.
34. **J.O. Jaber**, M. Mohsen, S.D. Probert and M. Alees, Future electricity demands and greenhouse gas emissions in Jordan, *Applied Energy*, Elsevier Science Journal, (2001), Vol. 69, pp. 1-18.
35. **J.O. Jaber**, M. Mohsen, Behaviour of two Jordanian oil shales at drying, *Oil Shale*, Estonian Science Academy Journal, (2001), Vol. 18, pp. 47-55.
36. **J.O. Jaber**, M. Mohsen, Evaluation of non-conventional water resources supply in Jordan, *Desalination*, Elsevier Science Journal, (2001), Vol. 136, pp. 83-92.
37. **J.O. Jaber**, S.D. Probert, Energy demand, poverty and the urban environment in Jordan, *Applied Energy*, Elsevier Science Journal, (2001), Vol. 68, pp. 119-134.
38. **J.O. Jaber**, S.D. Probert, P.T. Williams, Reaction kinetics of fluidised bed gasification of Jordanian oil shales, *International Journal of Thermal Sciences*, Elsevier Science Journal, (2000), Vol. 39, pp. 295-304.
39. **J.O. Jaber**, Gasification potential of Ellujjun oil shale, *Energy Conversion and Management*, Elsevier Science Journal, (2000), Vol. 41, pp. 1615-1624.
40. **J.O. Jaber**, S.D. Probert, P.T. Williams, M. Tahat, Gasification potential and kinetics of Jordanian oil shales using CO₂ as the reactant gas, *Energy Sources*, Taylor and Francis Journal, (2000), Vol. 22, pp. 573-585.

41. **J.O. Jaber**, S.D. Probert, Non-isothermal thermogravimetry and decomposition kinetics of two Jordanian oil shales under different processing conditions, *Fuel Processing Technology*, Elsevier Science Journal, (2000), Vol. 63, pp. 57-70.
42. **J.O. Jaber**, S.D. Probert, Pyrolysis and gasification kinetics of Jordanian oil shales, *Applied Energy*, Elsevier Science Journal, (1999), Vol. 63, pp. 269-286.
43. **J.O. Jaber**, S.D. Probert, P.T. Williams, Influence of particle size, grade and pyrolysis temperature on oil yield from Jordanian oil shales, *Oil Shale, Estonian Science Academy Journal*, (1999), Vol. 16, pp. 197-221.
44. **J.O. Jaber**, S.D. Probert, Predicted environmental and social impacts of the proposed oil shale integrated tri-generation system, *Oil Shale, Estonian Science Academy Journal*, (1999), Vol. 16, pp.2-29.
45. **J.O. Jaber**, S.D. Probert, Environmental impact assessment for the proposed oil shale integrated tri-generation plant, *Applied Energy*, Elsevier Science Journal, (1999), Vol. 62, pp. 169-209.
46. **J.O. Jaber**, S.D. Probert, P.T. Williams, Evaluation of oil yield from Jordanian oil shales, *Energy*, Pergamon, Elsevier Science Journal, (1999), Vol. 24, pp. 761-781.
47. **J.O. Jaber**, S.D. Probert, Gaseous fuels derived from oil shale for heavy-duty gas turbines and combined cycle power generators, *Applied Energy*, Elsevier Science Journal, (1998), Vol. 60, pp. 1-20.
48. **J.O. Jaber**, S.D. Probert, Oil shale integrated tri-generation system: the technology and predicted performance, *Oil Shale, Estonian Science Academy Journal*, (1998), Vol.15, pp.3-30.
49. **J.O. Jaber**, S.D. Probert, P.T. Williams, Modelling oil shale integrated tri-generation behaviour: predicted performance and financial assessment, *Applied Energy*, Elsevier Science Journal, (1998), Vol. 59, pp.73-95.
50. **J.O. Jaber**, S.D. Probert, Exploitation of Jordanian oil shales, *Applied Energy*, Elsevier Science Journal, (1997), Vol. 58, pp. 161-175.
51. **J.O. Jaber**, and S.D. Probert, Prospects for the exploitation of Jordanian oil shale, *Oil Shale, Estonian Science Academy Journal*, (1997), Vol.14, pp.565-578.
52. **J.O. Jaber**, S.D. Probert, Water scarcity: a fundamental crises for Jordan, *Applied Energy*, Elsevier Science Journal, (1997), Vol.57, pp.103-127.
53. **J.O. Jaber**, S.D. Probert, Energy and environmental issues for Jordan, *Applied Energy*, Elsevier Science Journal, (1997), Vol. 57, pp. 45-101.

54. **J.O. Jaber**, R.F. Babus'Haq, Energy management and environmental protection in Jordan: economic impact, *International Journal of Global Energy Issues*, (1993), Vol.5, No. 2-4, pp. 155-163.
55. **J.O. Jaber**, R.F. Babus'Haq, S.D. Probert, Electric and thermal power supplies in Jordan, *Applied Energy, Elsevier Science Journal*, (1992), Vol.42, pp.201-215.
56. **J.O. Jaber**, R.F. Babus'Haq, S.D. Probert, Optimal location of a district-heating pipeline within a rectangular duct, *Applied Energy, Elsevier Science Journal*, (1991), Vol.40, pp.101-109.
57. **J.O. Jaber**, R.F. Babus'Haq, S.D. Probert, Optimal thermal-insulation placement of district-heating pipes and their support baffles in air-filled trenches, *Applied Energy, Elsevier Science Journal*, (1991), Vol. 40, pp. 111-118.

Conference Proceedings and Presentations

1. **J.O. Jaber**, T. Sladek, Prospects for the Creation of International Center for Oil Shale Commercialization in Jordan, (submitted abstract to Oil Shale Symposium, Tallinn, Estonia, to be held in June 2009).
2. **J.O. Jaber**, Influence of Operating Parameters and Associated CO₂ Emissions with Surface Retorting of Jordanian Oil Shale, 1st Int. Engineering Sciences Conference of Aleppo University, Aleppo, 2-4 Nov. 2008, Syria.
3. **J.O. Jaber**, Jordanian Oil Shale: Present and Future Prospects, 3rd Scientific Research Conference, Jordan Scientific Research Society, 17 Nov. 2007 Amman, Jordan.
4. T.A. Sladek, S. Mernitz, **J.O. Jaber**, Strategies for Oil Shale Development in the Hashemite Kingdom of Jordan, The 27th Oil Shale Symposium, Golden, Colorado, 15-19 October 2007, USA.
5. **J.O. Jaber**, Q.M. Jaber, S. Khrabshah, Prospects of clean energy and green electricity production in Jordan, World Renewable Energy Congress IX, Italy, 2006.
6. **J.O. Jaber**, Q.M. Jaber, M.S. Mohsen, Evaluation of conventional and renewable energy sources for domestic space heating using fuzzy logic, Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, Greece, 2006.
7. **J.O. Jaber**, I. Abu Hamrah, Identification and quantification of Dioxin and Furan releases in Jordan, Medical Waste Regional Conference, Jordan Engineers Association and Arab Engineers Union, 21-23 March 2006, Amman, Jordan.

8. **J.O. Jaber**, Drying-kinetics of two different oil shale samples using thermogravimetric analyzer, conventional oven and direct solar insolation, 2nd International Exergy, Energy and Environment Symposium, 3-7 July 2005, Kos, Greece.
9. **J.O. Jaber**, N. Abidi, L. Shabib, The role of traffic warders in improving road safety in Jordan, the 4th Jordanian Road Transport Safety Conference, Union of Jordanian Insurance Companies, 22-24 May 2005, Amman, Jordan.
10. **J.O. Jaber**, A. Almomani, M. Mohsen, Quality engineering education and future challenges, New Technologies about Engineering Education and Training Seminar, Jordan Engineers Association and Arab Engineers Union, 10-11 May 2005, Amman, Jordan.
11. **J.O. Jaber**, R. Mamlook, W. Awad, Assessment of energy conservation and awareness programs in the household sector in Jordan, 1st International Conference on Sustainable Energy and Green Architecture, 2003, Bangkok, Thailand.
12. M. Mohsen, **J.O. Jaber**, B. Akash, R. Mamlook, Assessment of various residential heating systems using fuzzy sets and analytical hierarchy process methods, The First International Energy, Exergy and Environment Symposium, IEEEES-1, 2003, Turkey.
13. B. Akash, **J.O. Jaber**, E. Abu-Nada, A. Al-Sarkhi, Second law analysis of a solar-driven ejector air conditioning/refrigeration cycle, The First International Energy, Exergy and Environment Symposium, IEEEES-1, 2003, Turkey.
14. M. Mohsen, **J.O. Jaber**, M. Afonso, Desalination of brackish water by reverse osmosis, Conference on Desalination and the Environment: Fresh Water for All, 2003, Malta.
15. B. Akash, **J.O. Jaber**, M. Mohsen, The Jordanian experience in solar energy technologies, The World Renewable Energy Congress-VII, 29 June-5 July 2002, Cologne, Germany.
16. **J.O. Jaber**, Particulate emissions from diesel powered vehicles (in Arabic), Jordan Traffic and Safety Conference-2002, Jordan Traffic Institute, Public Security Department, 8-10 April 2002, Amman, Jordan.
17. **J.O. Jaber**, Oil shale to empower gas turbine, The 3rd Arab Technical Symposium "Arab Energy and Sustainable Development", Arab Engineers Association, 28-30 Oct. 2000, Damascus, Syria.
18. **J.O. Jaber**, Energy consumption in the household sector and related environmental issues in Jordan, Symposium of Energy Use and Economics in Residential Sector, The United Nation Economic and Social Commission for Western Asia & the Jordanian Ministry of Energy and Mineral Resources, 20-22 Nov. 2000, Amman, Jordan.

19. **J.O. Jaber**, Kinetics of pyrolysis of two Jordanian oil shales by thermogravimetry, International Conference on Energy Systems, 25-28 Sep. 2000, University of Jordan, Amman, Jordan.
20. **J.O. Jaber**, Energy Supply in the Hashemite Kingdom of Jordan, country paper presented in the seminar on power generation, 1994, Lahore, Pakistan.
21. **J.O. Jaber**, M. Alees, Current energy use in Jordan; and Energy conservation technology. The two papers presented in the Third Jordanian Scientific Week, 1995, Amman, Jordan.
22. **J.O. Jaber**, Energy conservation in transport sector, presented in the Symposium on Modern Trends in Traffic and Transport, Public Security Directorate, 1987, Amman, Jordan.

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

Jordan Engineers Association; Jordan Environment Society; International Institute of Exergy, Energy and Environment; Energy Committee in the Arab Engineers Union; Organizing Committee of the Jordanian International Mechanical Engineering Conference; International Scientific and Advisory Committee of the 2nd International Exergy, Energy and Environment Symposium; International Green Energy Conference; World Renewable Energy Congress; Traffic Warders Executive Committee.