University of Birmingham

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About

Dr Al-Dadah is a Lecturer in Thermofluids within the School of Mechanical Engineering having previously undertaken a BEng in Palestine and a PhD from London South Bank. She has researched and supervised research projects in the field of heat transfer and refrigeration and published over 30 papers in reputable journals and international conferences.

Qualifications

- PhD in Electrohydrodynamic Enhancement of Heat Transfer (London South Bank University, 1994)
- BSc in Mechanical Engineering (BirZeit University, Palestine)

Biography

Dr. AL-Dadah graduated from BirZeit University in 1986 with BSc in Mechanical Engineering specialising in air conditioning and refrigeration. She worked at the cooperation of fishermen in Gaza strip to manage the ice factory and the cold storage rooms. With a British council scholarship, she studied at Grimsby college the second year of the higher national diploma in refrigeration and with scholarships from three Arabic organisations and London South Bank University, she studied for PhD. Dr. AL-Dadah worked for one year at London South Bank and from February 1996, she is working at the University of Birmingham. As a lecturer in thermofluids

Teaching

Teaching Programmes

- BEng/MEng Mechanical Engineering
- BEng/MEng Mechanical Engineering (Automotive)
- BEng/MEng Mechanical Engineering (Biomedical)
- BEng/MEng Engineering with Business Management

Postgraduate supervision

- MPhil Mechanical Engineering
- PhD Mechanical Engineering

Research

Research Themes

Heat Powered Absorption and Adsorption Refrigeration Systems

- Cooling for Medical Applications
- Cooling of Electronic Devices
- Solar Energy Systems (Thermal and Electrical)
- Fluid Flow and Heat Transfer in Micro channels
- Two-Phase Heat Transfer of Environment Friendly Refrigerants
- Enhancement of Heat Transfer

Current Research Projects

Optimization of Silica gel/water Adsorption water chiller, funded by EPSRC Industrial Case Award in collaboration with Weatherite Manufacturing Plc.

- Water cooled concentrated Photo Voltaic (PV) cells for combined heat and power applications, funded by EPSRC Industrial Case Award in collaboration with LGC-Skyrota.
- Boiling heat transfer inside helical coils of small diameter tubes, ORS Scholarship
- Single phase heat transfer inside micro tubes, funded by a scholarship from the Libyan government.
- Cooling the Forearm for Alleviating Intention Tremor of MS Patients, self funded student.

Completed Research Projects

EHD enhancement of R123 condensation heat transfer- optimization of electrode system (September 1997 – 2001), Funded by an award from the Nuffield Foundation

Condensation heat transfer inside micro-finned tubes of R134a (February 1999 to September 2004). Funded by a scholarship from the Libyan government and support from Wolverine tube manufacturer

EHD Enhancement of condensation heat transfer- correlation of heat transfer coefficient for condensation outside tubes. (July 2001- July 2004) Funded by a scholarship from the Saudi Arabian government.

Solar powered combined vapor compression and vapor absorption cooling system for domestic air conditioning (September 2003 to 2008), Funded by Jamaica Petroleum Company.

Pressure drop and heat transfer performance of tube in foam heat exchanger, funded by Midland Aerospace Agency and Serck Aviation, 2007-2008

Other activities

- Reviewer for The International Journal of Applied Thermal Engineering
- Member of the Heat Exchangers Action Group (HEXAG)Member of SIRAC (Sustainable Innovations in Refrigeration and Air Conditioning

Publications

- AL-Dadah, R.K., Jackson, G., Rezk, A.R.M., 2011, Solar powered vapor absorption system using propane and alkylated benzene AB300 oil, Accepted for publication, J. Applied Thermal Engineering.
- Rezk, A.R.M. and Al-Dadah, R.K., 2011, Physical and operating conditions effect on silica gel/water adsorption chiller performance, Applied Energy, In Press, Corrected Proof, Available online 1 February 2011.
- Mahmoud, S., AL-Dadah, R.K., Aspinwall, D., Leung S. and H. Hemida, 2011, Effects of micro fins' geometry on natural convection heat transfer from horizontal microstructures, Accepted (subject to modifications currently being implemented) for a special edition of the J. of Applied Thermal Engineerring.
- Mahmoud, S., AL-Dadah, R. K., Aspinwall, D.K. and Soo, S. L., Development of a Micro Cooling Probe for brain mapping, 1st IIR International Cold Chain Conference, Cambridge, 29-31 March 2010.
- AL-Dadah, R.K., Naser, A.D., 2007, Condensation Heat Transfer and Pressure Drop of R134a Inside Microfin Tubes – Optimization of Fin Characteristics, Proceedings of the Institute of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science, 221(C1), 43-54.
- Al-Dadah R.K. and Karayiannis, T.G., 2004, Electrode design for EHD enhancement of boiling and condensation in shell and tube heat exchangers, accepted to be published in the International Journal of Heat Exchangers (IJHEX), Vol. V, No. 1, pp. 29-50. (Journal ISBN 1524-5608)
- AL-Ahmadi A. and Al-Dadah, R.K., 2002, A new set of correlations for EHD enhanced condensation heat transfer of tubular systems. Journal of Applied Thermal Engineering, Vol. 22, pp. 1981-2001.
- AL-Dadah, R.K., Karayiannis, T.G., 1998, Passive enhancement of condensation heat transfer, Journal of Applied Thermal Engineering, Vol. 18, pp. 895-909.

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