



Ali Shakir Baqir

Prof. Dr. Eng. at MOHESR/GOV/IQ since 05 February 2005

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Profile

Successful statistician/operation research analyst and mechanical engineering professional with experience in art technology/speed camera techniques, categorical data analysis of multivariable experimental phenomena, performing testing procedures utilizing reliability analysis tools, censored data analysis, using Photron Fastcam Viewer (PFV) and Thermal Imaging Cameras processes in modeling reliability problems, design of experiment, process control, large-scale optimization, development of analytical tools and scalable computational schemes for optimization and equilibrium problems, real-time big data analytics for Mechanical/power system, and supply chain management. Innovative, and efficient solutions to mechanical/power problems through a profound knowledge of the underlying Heat, physics and mathematics as well as computational tools, written and verbal communication skills, and excellent work ethic.

Education

Basrah University, Iraq and Cardiff School of Engineering

- Ph.D., degree in Mechanical Engineering/Power **JUN 2010**
- **Concentration:** Direct Contact Heat Exchanger, Volatile Drops, Immiscible Liquid, Art technology
- **Advisor:** Prof. Dr. A. A. Rageb, Basrah University, College of Engineering, Iraq
- Prof. Dr. A. J. Griffiths, Cardiff University, School of Engineering – Wales – UK.

University of Baghdad, Baghdad, Iraq

MAY 2002

- Integrated BS & MS dual degree in Mechanical & Nuclear Engineering
- **Concentration:** Two phases fluid dynamic, thermal analysis
- **Adviser:** Dr. Mugdam Muhmood Salah

Related Coursework

Advanced Heat Transfer Conduction/Convection, Direct Energy Conversion, Turbulence, Boiling, Condensation, Micro-finned Tubes, Boundary Layer Theory, Advanced Measurement Methods, Advanced Fluid Mechanics, Micro-Nano Fluids, Advanced Mathematics, Theory of Flight, Aircraft Electricity and Instruments, Aircraft Engines, Aircraft Structure, Aircraft Engines and Jet Propulsion, Aircraft Design, Aircraft Systems and Maintenance, Advance Computer Programming.

Work and Research Experience

Head Aeronautical Engineering Technical Department

JAN. 2023-Until Now

Engineering Technical College, Al-Furat Al-Awsat Technical University, Al-Najaf 31001, Iraq

- The aeronautical Technical engineering department was founded in September 2014. The course takes four years to obtain a bachelor's degree and two years to obtain a master's degree in aerodynamic engineering. The high efficiency of the teaching and research program in the department has made it possible to produce in the near future qualified engineers in various industrial operation workshops and aircraft fault diagnosis. Aeronautical engineering is one of the important workshops in the field of engineering through dealing with specialized devices in the fuselage of all types related to the navigational devices of the aircraft

Vice Dean for Scientific Affairs and Graduate

FEB. 2017-2021

Engineering Technical College, Al-Furat Al-Awsat Technical University, Al-Najaf 31001, Iraq

- Vice Dean's Office for Scientific Affairs and Students is one of the pillars on which the Dean of the Faculty of Engineering at Al-Furat Al-Awsat Technical University is based ... This office is the main link responsible for following up conferences, seminars, seminars and scientific activities in the college as well as follow up the affairs of students of preliminary and higher studies and Discipline during their university studies and after their graduation from college.
- The Vice Dean's Office for Scientific Affairs and Graduate Studies consists of several divisions: the Division of Undergraduate Studies, the Scientific Affairs Division, the Post Graduate Studies Division, the Registration Division, the Continuing Education Division, the Library of the College of Engineering and the Engineering Workshops, and each Division is responsible for the Division's activities. Perform the duties assigned to it and according to the instructions in force.

Head Aeronautical Engineering Technical Department

SEP. 2014-FEB. 2017

Engineering Technical College, Al-Furat Al-Awsat Technical University, Al-Najaf 31001, Iraq

- The aeronautical Technical engineering department was founded in September 2014. The course takes four years to obtain a bachelor's degree and two years to obtain a master's degree in aerodynamic engineering. The high efficiency of the teaching and research program in the department has made it possible to produce in the near future qualified engineers in various industrial operation workshops and aircraft fault diagnosis. Aeronautical engineering is one of the important workshops in the field of engineering through dealing with specialized devices in the fuselage of all types related to the navigational devices of the aircraft

Head Mechanical Engineering Technical Department

OCT. 2010-SEP.2014

- The Mechanical Engineering Department was established in 1998 at the University of Al-Furat Al-Awsat Technical University, Najaf Engineering Technical College. The course takes four years to obtain a bachelor's degree and two years to obtain a master's degree in Thermal engineering. The high efficiency of the teaching and research program in the department made it able to graduate competent engineers in various industrial and productive development workshops. Mechanical engineering is one of the important workshops in the field of engineering through its dealing with specialized devices in power plants, power, cooling, air conditioning, automobiles and other things related to industrial devices. He graduated from the Department of Mechanical Engineering a lot

of qualified engineers who are now working in various fields as university professors in colleges and technical institutes or in companies and scientific offices to play their vital role in building human and society.

- The opening of many workshops for the repair of Automobiles fault diagnostic devices.
- Implement international quality education systems on the curriculum.
- Holding specialized scientific conferences in the field of mechanical and communication engineering.

Basrah University**SEP. 2007-2010**

- **Theoretical and Experimental Study of Direct – Contact Evaporation of a Volatile Drops in an Immiscible Liquid.**
- Developing a new thermal system by using direct contact heat exchanger.
- New Art Technology Programing.
- Thermal Imaging Camera.
- Advanced Heat Transfer Conduction/Convection.
- Direct Energy Conversion
- Turbulence
- Boiling
- Condensation
- Micro-finned Tubes
- Boundary Layer Theory
- Advanced Measurement Methods
- Advanced Fluid Mechanics
- Micro-Nano Fluids
- Advanced Mathematics
- Advance Computer Programming.

Cardiff University – Cardiff School of Engineering**Jun 2009- DES. 2009**

- Research mission, to complete the practical requirements of my doctoral thesis for six months and the use of the newest thermal measuring instruments.

Head Mechanical Engineering Technical Department**OCT. 2005-JUN.2007****University of Baghdad****SEP 1999-MAY 2002**

- *Design of Superheater/Percolator using Ammonia Water Mixture*
- Developing a new thermal system by using Kalina cycle and Ammonia/water mixture as a working fluid in designing a superheater / Percolator system

Teaching Experience

Course	Institution	Class Size	My Responsibilities
MATLAB Programming, ANSYS Software	Al-Furat Al-Awsat	60	Teaching students MATLAB, ANSYS software -Providing Instructions in the Lab -Demonstrating and supervising experiments -Evaluating the data processing and analyses by students -Clarifying students' doubts at every step
Heat Transfer	Al-Furat Al-Awsat	60	Lecturer
Engineering and Numerical Analysis	Al-Furat Al-Awsat	60	Lecturer
Theory of Flight	Al-Furat Al-Awsat	60	Lecturer
Aircraft Engines	Al-Furat Al-Awsat	60	Lecturer
Aircraft Systems and maintenance	Al-Furat Al-Awsat	60	Lecturer
Fluid Mechanics	Al-Furat Al-Awsat	60	Lecturer
Boundary Layer Theory	Al-Furat Al-Awsat	45	Lecturer
Advanced Heat transfer-M.Sc.	Al-Furat Al-Awsat	15	Lecturer
Advanced Heat transfer-Ph.D.	Al-Furat Al-Awsat	14	lecturer
Design of Thermal Systems-Ph.D.	Al-Furat Al-Awsat	14	lecturer
Advanced Measurement Method	Al-Furat Al-Awsat	15	Lecturer
Advanced Fluid Mechanics – M.Sc.	Al-Furat Al-Awsat	15	Lecturer
Advanced Heat transfer	Al-Furat Al-Awsat	15	Lecturer
Advanced IC Engines-M.Sc.	Al-Furat Al-Awsat	15	Lecturer

Membership/Advising Experience

- M.Sc. Student Supervisor, Anmar Adnan, Al-Westa Technical University, Thermal Engineering. JUN 2011, Perforated fin like pin Heat Exchanger.
- M.Sc. Student Supervisor, Nofil Baqer, Basrah University/ College of Engineering/ Mechanical Engineering, 3 D Simulation in Forced Convection Internally Finned Tubes, JUL. 2012.
- M.Sc. Student Supervisor, Ahmed A. Razzak, Al-Furat Al-Awsat Technical University, Thermal Engineering. JUN 2018, Heat exchanger with injecting air bubbles.
- M.Sc. Student Supervisor, Heba Qassim, Al-Furat Al-Awsat Technical University, Thermal Engineering. JUN 2018, Solar Flat Plate Collector with injecting air bubbles.
- Ph. D. Student Advisor, Ghassan Fadhil, Basrah University/ College of Engineering/ Mechanical Engineering, Enhancement of Rotating Cylindrical Heater.
- Supervisor of dozens of graduation projects for students of the completed stages of engineering colleges.
- M.Sc. and M.Tech. more than (9) nine students and two Ph.D. students supervisor.
- Ph. D. Student Supervisor, Ahmed A. Razzak, Al-Furat Al-Awsat Technical University, Thermal Engineering. JUN 2023, Direct contact heat transfer
- Ph. D. Student Supervisor, Theoretical and Experimental study study of parabolic trough collector ststem with Nano-Material packing, 2024

Professional

Memberships

- Member of National Council of Programmatic Accreditation for Engineering Technical Education **NCPAETE**(Government Council)
- Member of the main link of the Ministry of Higher Education and Scientific Research with the Iraqi Ministry of Defense / Iraqi Air Force Command.
- Member of the main link of the Ministry of Higher Education and Scientific Research with the Iraqi Ministry of Transport / Iraqi Airways.
- Chairman of the research team for thermal activities in Najaf Governorate. Iraq
- Member of the Central Committee for the development of the aviation sector in Najaf province in cooperation with the British company Coperchase.
- Member of Mechanical Engineering Graduate Student Association-Basrah, Baghdad and Al-Westa Technical Universities.
- Member of the Iraqi Red Crescent Association
- Chairman of thermal cameras committee in Najaf province government
- 4th-SICN-2019 (chair for conference)- The 4th Scientific International Conference 2019- EDAS identifier: 1568260

Educational Service

- Reviewer of Journal Papers- Al-Furat Al-Awsat Technical University Journal (2014).
- Member of the committees to discuss thesis and dissertations for mechanical and chemical engineering MS/Ph. D. students.
- Teaching Award Recipient- Al-Furat Al-Awsat Technical University- 2016 Instructor and Lecturer.
- Founder of Aeronautical Engineering Department, Engineering Technical College, Al-Furat Al-Awsat Technical University, 51009, Iraq
- Founder of Avionic Engineering Department, Engineering Technical College, Al-Furat Al-Awsat Technical University, 51009, Iraq

Publications / more than 40 papers and Thises

- [1] Hameed B. Mahood, Ali S. Baqir, and Farhan L. Rasheed, Two-Phase pressure drop through obstructions, Iraqi Journal of Chemical and Petroleum Engineering, university of Baghdad, 2003, Vol. 4, June, 49-55.
- [2] Mikdam M. Saleh, Ali Shakir Baqir, DESIGN AND PERFORMANCE OF A PERCOLATOR FOR AQUA-AMMONIA LIQUID, Journal of Engineering, University of Baghdad, no. 1, Vol. 11, March 2005, page 33-49.
- [3] Hameed Balassim Mahood and Ali S. Baqir, Thin – layer Drying and Rewetting Models to Predict Moisture Diffusion in Spherical Agricultural Products, A scientific and Refreed Journal Issued by University of ThiQar, Vol. 3, no. 4, 2006, 301-312.
- [4] Ali S. Baqir, Kareem Jaafer and Hameed Balassim Mahood, Void fraction and submergence ratios effects on a bubble pump performance, 1st Scientific Conf. Tech. College – Najaf, 2008, pages 289-302.
- [5] Hameed B.M, Najim A. J., Abouther T. H. and Ali S. B., Two-Phase bubble condensation through direct-contact heat transfer of two immiscible liquids, 2nd F.T.E. Scientific International Conference, Najaf Tech. College, 2010, pages 351-364.
- [6] Ali S. Baqir, A. A. Rageb and A. Al-Sharaa, Vaporization of single liquid drops in an immiscible liquid: Concentric spheres Model, 3rd Scientific Conference, College of Engineering, university of Babylon, 2011, pages
- [7] Ali S. Baqir, A. J. Griffiths and A. A. Rageb, Vaporization of single n-pentane liquid drop in a flowing distilled, Vaporization of single liquid drops in an immiscible

- liquid: Concentric spheres Model , 3rd Scientific Conference, College of Engineering, university of Babylon, 2011, pages
- [8] Ali Shakir Baqir, Parametric study on a prediction the drag coefficient for a single growing bubble in uniformly superheated pure liquids, Al-Qadisiya Journal for Engineering Sciences, Vol. 5, No. 3, 2012, pages 314-324.
- [9] Ali. S. Al-Jaberi , A. J. Griffiths , A. A. Rageb, Volumetric Heat transfer Coefficient for Direct Contact Evaporation Immiscible liquid In Spray, 3rd F.T.E. Scientific International Conference, Najaf Tech. College, 2013, pages 519-533.
- [10] Ali Shakir Baqir, Effect of axial rib pitch to rib height ratio and blockage ratio on drag and heat transfer from an in-line array of three spheres, , 3rd F.T.E. Scientific International Conference, Najaf Tech. College, 2013, pages 503-518.
- [11] Ali Shakir Al-Jaberi , Ahmed Kasim, Anmar Adnan, Heat transfer enhancement and pressure drop reducing over perforated pin fins heat sinks system, The Iraqi Journal For Mechanical And Material Engineering, Vol.14, No2, 2014
- [12] Ali Shakir Al-Jaberi ,Majid H. M., and Bassam A. Saheb, Circular fins with slanted blades attached on the copper pipe: Uniform heat flux and isothermal processes, International Journal of Mechanical Engineering and Technology (IJMET), ISSN 0976 – 6340(Print),ISSN 0976 – 6359(Online), Volume 5, Issue 5, May (2014), pp. 133-143 © IAEME.
- [13] Ali Shakir, Ammar Ali, and, Nofil M. Baqer, Numerical investigation for enhancement of heat transfer in internally finned tubes using ANSYS CFX program, Basrah Journal of Engineering Sciences, Engineering College, University of Basrah.
- [14] Ali Sh. Baqir, Hameed B. Mahood, Mudher Sabah, Alasdair N. Campbell: Heat transfer measurement in a three-phase spray column direct contact heat exchanger for utilisation in energy recovery from low-grade sources. Energy Conversion and Management 08/2016. **Q1**
- [15] Ali Sh. Baqir, Hameed B. Mahood, Alasdair N. Campbell, Anthony J. Griffiths: Measuring the average volumetric heat transfer coefficient of a liquid–liquid–vapour direct contact heat exchanger. Applied Thermal Engineering 04/2016; 103:47-55., DOI:10.1016/j.applthermaleng.2016.04.067. **Q1**
- [16] Hameed B. Mahood, A. N. Campbell, Ali Sh. Baqir, A. O. Sharif, R. B. Thorpe: Convective heat transfer measurements in a vapour-liquid-liquid three-phase direct contact heat exchanger. Heat and Mass Transfer 12/2017;, DOI:10.1007/s00231-017-2260-8. **Q1**
- [17] Ali Sh. Baqir, Hameed B. Mahood, Asaad H. Sayer: Temperature Distribution Measurements and Modelling of a Liquid-Liquid-Vapour Spray Column Direct Contact Heat Exchanger. Applied Thermal Engineering 04/2018; 139., DOI:10.1016/j.applthermaleng.2018.04.128. **Q1**

- [18] Hayder H. Khaleel, Mohammed K. Khashan, Ali Shakir Baqir: Modeling and analysis of disc brake in automobiles. Journal of Mechanical Engineering Research and Developments 07/2018; 41(2):56-58., DOI:10.26480/jmerd.02.2018.56.58
- [19] Amjed Al-Khateeb, Mohammed K Khashan, Ali Shakir Baqir: Experimental study for IK airfoil at low speed in a rectangular air cross flow. International Journal of Food Engineering 02/2019; 9(1):1-10., DOI:10.24247/ijmperdapr20191
- [20] Hameed B. Mahood, Ali Sh. Baqir, Al-Dunainawi Yousif, Anees A. Khadom, Alasdair N. Campbell: Direct contact evaporation of a single two-phase bubble in a flowing immiscible liquid medium. Part I: two-phase bubble size. Heat and Mass Transfer 03/2019;, DOI:10.1007/s00231-019-02606-0. Q1
- [21] Ali Sh. Baqir, Hameed B. mahood, Ahmed R. Kareem “Optimisation and evaluation of NTU and effectiveness of a helical coil tube heat exchanger with air injection”, Thermal Science and Engineering Progress, Volume 14, December 2019. Q1
- [22] Ahmed R. Kareem, Ali Sh. Baqir, Hameed B. mahood " Temperature Distribution Measurements along Helical Coiled Tube Heat Exchanger with Effect of Air Injection", 5th International Engineering Conference (IEC2019), At: Tishk International University and Erbil Polytechnic University, <https://ieeexplore.ieee.org/document/8950586/>
- [23] Heba Qasim Mohammed, Ali Sh. Baqir and H.S. Khwayyir Hasan " Effects of Air Bubble Injection on the Efficiency of a Flat Plate Solar Collector: An Experimental Study for the Open Flow System', Journal of Engineering and Applied Sciences 15 (7): 1703-1708, 2020.
- [24] Hasan S.Khwayyir, Ali Sh. Baqir, Hiba Q.Mohammed, “Effect of Air Bubble Injection on the Thermal Performance of a Flat Plate Solar Collector”, Thermal Science and Engineering progress, Volume 17, 1 June 2020, 100476. Q1

More than 40 papers and Thesis, for more information please visit the following website;

<https://www.researchgate.net/profile/Ali-Baqir>