Ali H. Al-Khafaji

Handvaerkervaenget 20 C

3400 Hillerod

Denmark

MOBILE NO.: 0045 71436002

DRIVING LICENS: Danish and Jordanian

EDUCATION:

Degree	Institute/Country	Year
Doctor of Philosophy (PhD)	Heriot-Watt University/Mechanical Engineering Department/United Kingdom	1986-1991
Bachelor of Science (BSc)	University of Baghdad/College of Engineering/Mechanical Engineering Department/Iraq	1980-1984
Primary, Intermediate and High school	Al-Gefary (P), Al-Sadeer (Int) and Al-Kindi(H)/Iraq	1967-1980

SCIENTIFIC STATUS:

Degree	Institute/Country	Year
Lecturer (External)	Ministry of Higher Education and Scientific Research/Al-Mustansiriya University/College of Engineering/Mechanical Engineering Department/Iraq	1994-2005
Lecturer (Staff)	Ministry of Higher Education and Scientific Research/Al-Mustansiriya University/College of Engineering/Mechanical Engineering Department/Iraq	2005-2008
Assistant Professor	Ministry of Higher Education and Scientific Research/Al-Mustansiriya University/College of Engineering/Mechanical Engineering Department/Iraq	2008 till now

CAREER RELATED EXPERIENCE:

Consultant Engineer- Head of Quality Control Department **2013- 2014**
Jordanian Mottaa Company for Ice Cream/Jordan

- Responsible for 14 product lines to comply with the international standards for food industry such as ISO 22000 and HACCP.
- Direct management of the staff with planning of their job obligations. A complete assessment of the 14 production lines on a daily, weekly and monthly basis.
- Reporting the status of the product quality assurance to the chairman of boards and the executive manager on the daily basis.
- The cleaning in-place (CIP) and sanitation to avoid the Bacterial coli building at these lines. A CIP program was set up for the statistical purposes of the cleaning and sanitation of production lines including the ageing tanks, process tanks, plumbing system, freezers and machines.

- A complete program was set up using the PLC to implement the latest technology in the CIP process for these lines. The use of Caustic Soda (Alkali), Nitric Acid, and hot water for the CIP program.

External Lecturer- (BSc) and Higher Education (MSc & PhD) Levels 1994-2005

Al-Mustansiriya University/College of Engineering/Mechanical Engineering Department

- Preparation of the teaching syllabus for the air conditioning and refrigeration topic for the (BSc), (MSc) and (PhD) study levels. It was considered one of the most important topics for the degree fulfillment since 1995 academic year at the college of engineering-mechanical engineering department.
- Instructed two topics for the 3rd and 4th year for (BSc) students such as heat transfer and air conditioning and refrigeration.
- Instructed many topics for the (MSc) and (PhD) students in the power division such as air conditioning and refrigeration, thermodynamics and environmental engineering.
- Supervised a graduation projects for (BSc), (H. Dipl.), (MSc) and (PhD) students as a partial fulfillment for awarding the graduation degree.
- Participation in the department activities such as workshops and scientific seminars related to the research work of the graduation students.
- Participation in the oral exams of the final year (BSc) project reports and the (MSc) and (PhD) dissertations and theses.
- Introducing new ideas for the teaching process and evaluation of student performance during the term and final year assessment.
- Establishing important directions in the research activities for the higher education levels to comply with the evolution in the field of research.

A Lecturer/Assistant Professor- (BSc) and Higher Education (MSc & PhD) Levels 2005-2013

Al-Mustansiriya University/College of Engineering/Mechanical Engineering Department

- Introducing and preparing the syllabus of two major topics to the (PhD) study level, Two-Phase Flow and Energy System Modeling. These subjects were instructed with approved very effective teaching method.
- Introducing and supervising new research topics for the (BSc), (MSc) and (PhD) levels to comply with the most recent scientific research category in the industrial, production and manufacturing field.
- Giving the practical work in laboratories the priority for student skill enhancement. A well-equipped laboratory was established under my supervision for the power plant technology topic which was instructed by me for the (BSc) level.
- A number of topics were taught for different college and higher education levels such as Fluid Dynamics, Two-Phase Flow, Energy System Modeling, Air Conditioning and Refrigeration, Power Plant Technology, Mathematics and other engineering subjects.
- Publishing research papers in the local and international scientific journals and conferences.

ADMINISTRATION ACTIVITIES:

- A member of the department administration board.

- A member of the scientific research board of the department.
- The head of the Researches & Investigations Development Committee.
- A member of the Higher Degree (MSc) and (PhD) Qualification Test, paper work and oral. Participating in putting the test questions, mark assignment and evaluation of the test level.
- The head of oral examination committee for undergraduate student projects.

Senior Thermal Equipment Designer/Head of Thermal Division Department 1992-2005

Saad State Company/Ministry of Reconstruction and Housing/Iraq

- Planning the project completion target time with the implementation of the available human resources to comply with the required project plan.
- Reflect the status of the equipment on the time chart and solve the problems that may arise throughout the task execution.
- Thermal equipment design for different industrial applications such as petroleum and refinery projects, thermal and gas power plants, food industry, fluidized bed coolers, rotary kilns and many other categories. The equipment includes heat exchangers, air heaters, furnaces (Electrical and Fuel operated types), air conditioning and refrigeration units, fluidization bed, and plumbing system requirements.
- Reflect the design requirements on the Piping and Instrumentation Diagram (P&ID) and Process Flow Diagram (PFD) of the projects. In addition, the equipment layout, piping and a complete plumbing system was considered.
- Approval of the workshop drawings of the designed equipment prior to their fabrication.
- Participation in the installation of the equipment according to the process layout needs.
- Supervising the operation of the equipment to meet the industrial design requirements.
- Monitoring of the designed equipment integration with the rest items of the industrial line or manufacturing site.
- Participating in a number of the technical and management committees to serve the fulfillment of the work and policy of the company.
- A training course in the field of thermal design of boilers and condensers for skill enhancement of engineers working in the field of energy, power and heat transfer.
- A training course in the field of air conditioning and refrigeration (Design and Equipment Selection) for the purpose of staff development who works in the field.
- A training course in the field of Thermal Aspects of Equipment Design (Techniques and Aims).

TYPICAL FIELD PROJECTS

The design, fabrication, installation and operating of a number of projects as follows:

- Rehabilitation projects of the baby milk and dairy factories in Baghdad province/Iraq **(1998 and 2000)**
- Ammonia evaporative condenser as a part of refrigeration unit, Baghdad/Iraq **(2000)**.
- The water cooling system for the air conditioning unit and plumbing system in addition to the cooling towers and water chillers for the cement factory of Karbala province/Iraq **(2001)**.
- A heat treatment furnace used for iron at specified thermal cycle, control and capacity, Baghdad/Iraq **(2002)**.
- The air conditioning (heating and cooling) and refrigeration unit and its plumbing circuit of Al-Ameer hotel in Karbala province/Iraq **(2003)**.
- Reconstruction of the air conditioning and refrigeration unit of the National Council building in Baghdad/Iraq **(2005-2006)**.

- The air condition and refrigeration system of Al-Hakeem hospital in Najaf province/Iraq **(2007)**.
- The revised design of the air conditioning and refrigeration, and the plumbing systems for the travel circular line of Baghdad city project/Iraq **(2006-2007)**.
- Rehabilitation and operation of the central water pumping station and piping system of Jadriah in Baghdad/Iraq **(2004)**.
- Maintenance of the main pumping and desalination unit in Karbala province **(2010)**.
- The sanitary services plumbing system accomplished for the Ministry of Communications building in Baghdad/Iraq **(2006)**.
- Water cooling plant of lubrication oil of the Gas-Turbine power units. Such circuit was installed in Al-Taji (Baghdad) and Al-Debis power plants (Kirkuk)/Iraq **(1998)**.
- The assessment of the performance of the rotary air heaters and the air conditioning system in the Al-Dura power plant, Baghdad/Iraq **(1994-1995)**.
- Participating in the assessment of the thermal design of the furnaces in the petroleum refinery of capacity 10,000 barrel/day, installed in Beiji - Salah Al-Din/Iraq **(2000-2001)**.

PROFESSIONAL ACHIEVEMENT

- A senior designer of thermal equipment/Saad State Company/Ministry of Reconstruction and Housing/Iraq **1992 - 2005**
- A member of Iraqi Teacher Union/Republic of Iraq **2005 - 2014**
- A member of Iraqi Engineers Union/Republic of Iraq **1993 - 2015**
- A member of the editorial board of International Journal of Emerging Technology and Advanced
- Engineering (IJETAE). **2014**
- A member of the editorial board of American Association for Science and Technology (AAECIT), American Journal of Energy and Power Engineering (AJEPE). **2015**

OTHER SKILLS

Computer Implementation

- Microsoft Office items such as, Word, Excel, Power Point, etc.
- FORTRAN, QUICK-BASIC, and LIBERTY-BASIC languages in the programming process
- Available commercial codes and programs implemented by engineers in the design category.

Languages

- **Arabic (Mother tongue) English (Fluently) Danish (Basic- attending a language course)**

HELD POSITIONS

- The Head of Industrial Equipment Thermal Design Division/ Ministry of Housing and Construction /Saad State Company/Baghdad-Iraq. **1994-1997**
- The Head of Equipment Thermal Design Department/Saad State Company/Ministry of Housing and Construction/Baghdad-Iraq. **1997-2005**

AWARDS

- Henry Black Memorial Prize during the PhD. study due to the high performance achievement during my research in (UK) **1991**
- An official acknowledgement certificate by the Iraqi Ministry of Higher Education and Research Council due to the research activity shown in (2010-2011) academic year. **2011**

HOBBIES

- Sports such as walking, jogging and playing football.

Web Site: https://www.researchgate.net

Note: The above detailed information is documented and may be forwarded upon inquiry.

A List of published papers and reports

1- "The Application of Enhanced Surfaces to Boiling Over Tube Bundles", Report No. 3, Department of Industry Contract, NEL*/123/98, 45 pp, July (1988).

2- "The Application of Enhanced Surfaces to Boiling Over Tube Bundles", Report No. 4, Department of Industry Contract, NEL*/123/98, 63 pp, December (1988).

3- "The Application of Enhanced Surfaces to Boiling Over Tube Bundles", Report No. 5, Department of Industry Contract, NEL*/123/98, 76 pp, May (1989).

4- "Boiling a Pentane/Tetradecene Mixture at Atmospheric Pressure Over a 241 Tube Bundle Configuration With All-Plain and HighFlux-Plain Tubes", HTFS+ Research Symposium, Edinburgh, Part No. RS796, September (1989).

5- "Instabilities in Pool Boiling of Mixtures Over a Plain Tube at Atmospheric Pressure", Eurotherm Conference, Paderborn, West Germany, (1989)

6- "Instability in Pool Boiling of a Wide Boiling Mixture on a Horizontal Tube", Int. J. Heat Mass Transfer, Vol. 34, No. 11, pp. 2797- 2803, (1991).

7- "Pool Boiling Tests on Plain and Enhanced Tubes Using a Wide Boiling Range of Mixtures", HTFS+ Research Symposium, Canterbury, Part No. RS873, September (1991).

8- "Nucleate Pool Boiling of The Ethanol/Water Binary Mixture on Plain and Enhanced Horizontal Tube Surfaces at Atmospheric Pressure", 3rd U.K., National Heat Transfer Conference, July (1992).

9- "Pool Boiling Tests on Plain and Enhanced Tubes Using a Wide Boiling Range Mixture", Experimental Heat Transfer, An Int. J. Vol. 6, No. 1, Jan. – March (1993).

10- "A Comparison Between HIGHFLUX and Plain Tubes, Boiling Pentane in a Horizontal Kettle Reboiler", Applied Thermal Engineering, Vol. 22, pp. 803-814, (2002).

11- "A Model for Prediction of Surface Condenser Performance in Thermal Power Plants", Engineering and Development Journal, Vol. 8, No. 3, pp. 18-42, December (2004).

12- "Application of a Numerical Moving Boundary Model For Prediction of Bubble Growth Rate in Boiling of Pure Liquids and Miscible Binary Mixtures", Engineering And Development Journal, Vol. 9, No. 4, pp. 23-44, December (2005).

13- " A Mathematical Model for Thermal-Hydraulic Design of Shell and Tube Heat Exchanger Using a Step by Step Technique", Engineering and Development Journal, Vol. 10, No. 4, pp. 12-35, December (2006).

14- "The Prediction of Environment Effect on the Performance of a Vapor Compression Refrigeration System in Air Conditioning Application", Engineering and Development Journal, Vol. 11, No. 1, pp. 169-189, May (2007).

15- " A Numerical Model for Thermal-Hydraulic Design of a Shell and Single Pass Low Finned Tube Bundle Heat Exchanger", Engineering and Technology Journal, Vol. 25, No. 4, pp. 619-645, (2007).

16- "A Simplified Correlation for the Prediction of Nucleate Pool Boiling Performance of Single Integral Enhanced Tubes Boiling Pure Liquids at Atmospheric Pressure", Engineering and Development Journal, Vol. 11, No. 3, pp. 131-148, (2007).

17-"A Numerical Analysis of Adiabatic Capillary Tube Performance in Vapor Compression Refrigeration Systems", The Iraqi Journal for Mechanical and Materials Engineering, Vol. 8, No. 3, pp. 201-218, Babylon University, Iraq, (2008).

18- "A Simplified Model for the Prediction of Thermal Performance for Cross Flow Air Cooled Heat Exchanger with a New Air Side Thermal Correlation", Engineering and Development Journal, Vol. 12, No. 3, pp. 88-119, Al-Mustansiriya University, Baghdad, Iraq, (2008).

19- "Experimental Perspective Assessments for a Proper Refrigerant Alternative to R-22 in a Window Type Air Conditioning Unit", Journal of Engineering, Vol. 15, No. 2, pp.3756-3775, Baghdad University, Iraq, June (2009).

20- "A Simplified Numerical Model for a Flat Continuous Triangle Fins Air Cooled Heat Exchanger Using a Step by Step Technique", Engineering and Development Journal, Vol. 13, No. 3, pp. 38-59, Al-Mustansiriya University, Baghdad, (2009).

21- "Experimental and Theoretical Study to Minimize the Cooling Load by Using a New Alternatives in a Space Located in Baghdad City", Engineering and Development Journal, Vol. 13, No. 3, pp. 109-127, Al-Mustansiriya University, Baghdad, (2009).

22- "A Dynamic Modeling Capability for Subcritical Vapor Compression Refrigeration System", Engineering and Technology Journal, Vol. 27, No. 13, pp. 2319-2338, (2009).

23- "The Application of a Step by Step Technique for the Performance Prediction of Thermal Power Plant Condensers", Journal of Engineering, Vol. 16, No. 1, pp. 4748-4770, Baghdad University, Iraq, (2010).

24- "A Numerical Model for Performance Prediction of Dry Cooling Conditions of Air Cooled Condensers in Thermal Power Plant Stations", Engineering and Technology Journal, Vol. 28, No. 16, pp. 5271-5292,(2010).

25- " Evolution of A Proper Alternative Refrigerant for R-22 in Air Conditioning Systems", Emirates Journal for Engineering Research, Vol. 15, No. 2, pp. 41-51, (2010).

26- "A Correlation for the Prediction of Nucleate Pool Boiling Performance of Pure Liquids from Enhanced Tubes", Jordan Journal of Mechanical and Industrial Engineering, Vol. 5, No. 2, pp. 139 – 144,April (2011).

27- "A Proper Alternative Refrigerant for R-22 in Water Chillers", Gulf University Journal, Vol. 3 – Eng. Div. / No. 1, pp. 161-179, (2011).

28- "A Quasi-steady State Operation Mode of Alternative Refrigerants for R-22 in Water Chillers", The Iraqi Journal for Mechanical and Material Engineering, Vol.13, No.1, pp. 13-33, (2013)

29- "A Correlation for the Pool Boiling Enhancement Factor from Low Finned Tubes", Global Journal of Researches in Engineering (GJRE), A Mechanical and Mechanics Engineering, Vol. 14, Issue 5, Version 1.0, pp. 1-8, (2014).

30- "Implementation of Expert System Modeling to Thermal-Hydraulic Design of Hydraulic Systems", Proceedings of the ASME 2014 Power Conference Power 2014, paper no. Power 2014-32038, pp. 1-8, Baltimore, Maryland, USA, (28-31) July, (2014).

31- "A Rating Model of Finned-Tube Condenser Using Pure and Zeotropic Blend Refrigerants", to be presented in the conference proceedings of the ICFMHTT 2015 : International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics to be held in Dubai, UAE during January, 30-31, 2015.

32- " Modeling of Finned-Tube Evaporator using Pure and Zeotropic Blend Refrigerants" has been presented at the 2nd Annual International Conference on Technology & Engineering held in Athens, 22-25 June 2015.

33- "A Correlation for the Air Side Heat Transfer Coefficient Assessment in Continuous Flat Plate Finned Heat Exchangers", ASME, Journal of Thermal Science and Engineering Applications, 7 (2), Paper No. TSEA-14-1194, DOI: 10.11151/1.4029459, 1st June 2015.