

Curriculum Vitae- March 2022  
Assist. Professor Dr. **IDRES AZZAT HAMAKHAN**

**Personal Details**

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**Qualifications**

- 2006–2010 Queen Mary University of London, London, UK - PhD in Mechanical and Energy Engineering
- 2000-2002 Salahaddin University-Hawler, Kurdistan-Iraq – MSc in Material Science and Applied Mechanics (Honour, 1<sup>st</sup> Class)
- 1991-1995 Salahaddin University-Hawler, Kurdistan-Iraq – BSc in Mechanical Engineering (Honour, 1<sup>st</sup> Class)

**Positions**

- 2021 to date Head of quality assurance and programming, College of Engineering, Salahaddin University
- 2018-2021 Head of quality assurance, department of Mechanical and Mechatronics Engineering
- 2019 Team leader of car diagnostic service at Salahaddin University
- 2011 till to date Lecturer at Salahaddin University and Consultant for the MECITEST Company (Mechanical tests for Metals and polymers)
- 2009- 2011 Consultant on the NHS PICS project (turbomachinery and heart blades design) at QMUL
- 2005-2006 Director of Academic Relations, Salahaddin university-Hawler, Kurdistan-Iraq
- 2004-2005 Director, Power Plant and Thermodynamic Laboratories, Salahaddin University-Hawler, Kurdistan-Iraq
- 2002-2004 Lecture at Salahaddin University-Hawler, Kurdistan-Iraq
- 1997-2000 Teaching assistant at Salahaddin University, College of Engineering.

**Teaching Experience**

- Supervising Mechanical MSc student, “Enhancement of automobile environment cabinet using an auxiliary solar assisted Lithium-Bromide absorption air cooling system, 2021-2022”.
- Supervising Mechanical MSc student, “Investigation of the behavior of a flat plate solar collector using Matlab for the Kurdistan climate conditions, Iraq, 2021-2022”.
- Supervising Mechanical MSc student, “Investigation of thermal performance of integrated phase change materials in building structure using Fused filament fabrication, 2021-2022”.
- Supervising Mechanical MSc student, “Thermal enhancement of solar energy storage using phase change materials, 2021-2022”.
- Supervising Mechanical PhD student, " Simulation and experimental performances of solar water heater for the Erbil climate conditions, 2019-2022".
- Supervising Chemical MSc student, "Fluidized bed drying and microwave assisted fluidized bed drying in food processing, 2018-2019".
- Instructor: College of Engineering, Salahaddin University. Lectured Thermodynamics, Engineering mechanics: statics and dynamics, Fluid dynamics, Renewable energy, power plant engineering, heat transfer, Mathematics I, advanced Mathematics II and Descriptive Geometry and Computational Fluid dynamics.
- Instructor: College of Engineering, Department of Mechatronics, Ishik University. Lectured Introduction to Mechatronics, Industrial Engineering and SolidWorks CAD program.
- Co-Instructor: Engineering Thermodynamics, QMUL, 2008-2010. Lectured and organized field trips with Professor T. A. Alexander.
- Teaching Assistant: School of Engineering and Materials Science. Queen Mary, University of London. Monitored laboratory work and organized field trips. Held regular office hours.
- Instructor: College of Agriculture, Salahaddin University. Lectured food processing thermodynamics for Master student, 2015.

- Instructor: College of Engineering, Salahaddin University. Lectured advanced thermodynamics for Master student, 2015.
- Adviser of using Vehicle Diagnostic Computer (version V30 Auto boss) for most kind of cars

## **Languages**

- English (Proficient); Kurdish, Arabic (speaking and reading knowledges)

## **Publications**

The following publications are related to improvements of mechanical properties of stainless steel in welding process, design of high efficiency turbomachinery blades and wind turbine airfoil and working on performance of centrifugal pumps, heating and cooling systems.

[1] Azhar K. Mohammed, Idres A. Hamakhan “Analysis of energy savings for residential electrical and solar water heating systems”, *Case Studies in Thermal Engineering, Volume 27, October 2021, 101347.*

[2] Hardi A. M. Rasul, Idress A. Hamakhan and Ali M. Ibrahim “Absorber Type Optimization for Night-Shift Operation of Solar Air Heater”, *Journal of Eng. Research, ICRIE Special Issue, Vol 9 No ICRIE (2021).*

[3] Ahmed O. Abdullah, I. A. Hamakhan, Ziyad J. Talabany, “DRYING OF CARROT SLICES USING FLUIDIZED BED DRYER AND MICROWAVE-ASSISTED FLUIDIZED BED DRYER”. *International Journal of Multi-Dimensional Research, IJMR, Vol. 07, No.02, pp. 1-14, 2020.*

[4] I. A. Hamakhan, “Thermodynamic performance evaluation of HFC refrigerants for the chiller system simulated by hot gas bypass cycle”. *ZANCO Journal of Pure and Applied Sciences, Vol. 29, No.5, pp. 30-38, 2017.*

[5] M. A. Molan, I. A. Hamakhan and S. J. Shareef, “Exergetic analysis of a solar photovoltaic tracking system in Erbil, Iraq”, *Journal of University of Duhok, Vol. 20, No.1 (Pure and Eng. Sciences), pp. 381-393, 2017.*

[6] I. A. Hamakhan, R. B. Waley and H. Othman, "Diagnostic analysis of centrifugal pump using induced noise and vibration", *Journal of University of Duhok, Vol. 19, No.1 (Pure and Eng. Sciences), 2016.*

[7] I. A. Hamakhan, R. B. Waley and H. Othman, “Noise Assessment in Centrifugal Pump Operation”. *ENTECH 14, Energy Technologies Conference, 22-24 Dec. 2014, Istanbul.*

[8] T. Korakianitis, I. Hamakhan, MA Rezaenia, A. P. S. Wheeler, E.J. Avital, and J.J.R. Williams, "Design of high-efficiency turbomachinery blades for energy conversion devices with the 3D prescribed surface curvature distribution blade design (CIRCLE) method, *Applied Energy, Vol. 89, Issue 1, January 2012, pp. 215-227.*

[9] T. Korakianitis, M. A. Rezaenia, I. Hamakhan, E. Avital and J. J. R. Williams, "Aerodynamic improvements of wind-turbine airfoil geometries with the prescribed surface curvature distribution (CIRCLE) blade design method", *Transactions of the ASME, J. Eng. Gas Turbines Power, 134(8) pages 082601-1 to 082601-9.*

- [10] T. Korakianitis, I. Hamakhan, M. A. Rezaenia and A. P. S. Wheeler, " Two- and three-dimensional prescribed surface curvature distribution (CIRCLE) blade design method for the design of high efficiency turbines, compressors and isolated airfoils ", ASME paper GT2011-46722, Recommended for publication in the Transactions of the ASME, Journal of Turbomachinery.
- [11] I. A. Hamakhan. "Design of high efficiency turbomachinery blades". PhD dissertation, Queen Mary, University of London, School of Engineering and Materials Science, 2010, UK.
- [12] I. A. Hamakhan, "Aerodynamic performance effects of leading edge geometry in gas turbine blades", Applied Energy Journal, Vol. 87, issue 5, pp. 1591-1601, 2010.
- [13] I. A. Hamakhan F. M. Khoshnaw, "Determination of the mechanical properties of austenitic stainless steel weldments using stress-strain microprobes", material Science and Engineering A, Vol. 426, pp. 1-3, 2006.
- [14] F. M. Khoshnaw and I. A. Hamakhan, "Automation capabilities for TIG and MIG welding processes", Welding Research Abroad, Vol. 54, No. 3, pp. 51-53, 2008.
- [15] I. A. Hamakhan and F. M. Khoshnaw, "The effect of heat input on the mechanical properties of austenitic stainless steel 316L during MIG welding", Dohuk University Journal, 2001.
- [16] I. A. Hamakhan and R. A. Gardi. "The effect of heat input on pitting corrosion of AISI 316L during MIG welding". Stainless Steel World 2005, conference in Netherlands (Holland), [www.stainless-steelworld.net](http://www.stainless-steelworld.net).
- [17] F. M. Khoshnaw and I. A. Hamakhan, "Representing the stainless steel and wrought iron welding parameters for automating the TIG and MIG welding processes", Stainless Steel World 2005, conference in Netherlands (Holland), [www.stainless-steel-world.net](http://www.stainless-steel-world.net).
- [18] I. A. Hamakhan. "Effect of heat input on mechanical properties for Austenitic stainless steel 316L using TIG and MIG welding", Master thesis from Mechanical Department, College of Engineering, University of Salahaddin, 2002, Kurdistan.

## **References**

- 1- Professor T. A. Alexander  
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Aviation and Technology, USA  
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