Ranj Sirwan Abdullah, PhD

Associate Professor

General Director of Scientific Research Center

Nationality: Iraqi
Date of birth: 28th June 1980

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Academic Profile (education background)

- Doctor of Philosophy in Mechanical and Built Environment/ Renewable Energy from National University of Malaysia (2009-2013)
- M.Sc. Degree in Mechanical Engineering/ Air Conditioning & refrigeration from University of Technology (2003-2006)
- B.Sc. Degree in Refrigeration and Air-Conditioning Engineering (1998-2002)

- Associate Professor at Mechanical and Energy Engineering Department/ Erbil Technical Engineering College / Erbil Polytechnic University

Academic Title

- **Assistance lecturer** in Refrigeration and Air conditioning Department/ Erbil Technical Engineering College at Erbil Polytechnic University (2007-2012)
- **Lecturer** in Refrigeration and Air conditioning Department/ Erbil Technical Engineering College at Erbil Polytechnic University (2013-2018)
- **Assistance Professor** (Associate Professor) in Mechanical and Energy Engineering department/ Erbil Technical Engineering College at Erbil Polytechnic University (2018-present)

Address: Erbil City- Kurdistan Region of Iraq

Language: English

Arabic

Kurdish

(Qualifications)

2009-2013	**P.hD. In Mechanical Engineering, Mechanical and Material Department, National University of Malaysia** *"Evaluated of A Solar Assisted Combined Ejector-Absorption Refrigeration System with Flash Tank"*	Malaysia
2003-2006	**M.Sc. In Mechanical Engineering, Mechanical Engineer Department, University of Technology-Iraq** *"Modeling on Design Parameter of Plate Fin and Tube Condenser and Direct Expansion Evaporator using R407C"*	Iraq
1998-2002	**B.Sc. in Refrigeration and Air-condition Technology, Technical College of Baghdad**	Iraq

(Academic Experience)

Present-	**Faculty member and Researcher** Responsible to career overviews for lectures of both undergraduate (UG) and postgraduate (PG) students. My responsibilities encompass the preparation, delivery, evaluation, and examination of specialized subjects within the realms of Mechanical Engineering and Renewable Energy. Leading a team of educators, I drive the conceptualization of innovative projects within our department, serving on the scientific committee to ensure excellence. Additionally, I actively contribute to university committees. Recently, I have assumed the esteemed position of General Director at the Research Center of Erbil Polytechnic University. In this capacity, our center is dedicated to pioneering, integrating, and disseminating interdisciplinary research endeavors. We foster collaborations with esteemed international institutions, steadfast in our commitment to upholding the highest standards of research excellence across diverse domains. Moreover, I serve as a member of the University Council in my capacity as the director of the Scientific Research Center, furthering my dedication to advancing academic and research initiatives within the institution.
2018-2024	**Lecturer and Academic Researcher** Responsible for preparation, presentation, review, and examinations of lectures delivered to undergraduates and postgraduate students through selected courses. In addition to provision of feedback to students on regular basis. Preparation of time tables by working with other professionals and teachers. Leading a team of teachers to design new projects in the department (scientific Committee). While at the meantime I am acting as **Director of International Relations Office at Erbil Polytechnic University**. The mission of the International Office in EPU is to increase the international recognition of the university's qualification. I could obtain and received many projects and funds with international universities and institutes. The funds were divided into two categories (developing research and capacity building in higher education). I acted as the team leader in several committees related to the international office and university such as (**quality board steering committee**, **university ranking committee**, **Scientific promotion committee, internationalization development strategy committee, conferences steering committees'** and etc.
2013 -2018	**Lecturer and Academic Researcher** Responsible for preparation, presentation, review, and examinations of lectures delivered to undergraduates and postgraduate students through selected courses. In addition to provision of feedback to students on regular basis. Preparation of time tables by working with other professionals and teachers. Leading a team of teachers to design new projects in the department (scientific Committee). While at the meantime I was acting as a **deputy dean of engineering college**, responsible for managing and monitoring college budget, allocate and provide oversight department budget and the scientific program. Moreover, develop, administrate, and promote the academic programs and academic support functions of the college through Providing leadership, conduct and implement strategic planning of the college. I had been the head of examination committee of the college during the period (2014-2017) .

2007-2009	**Lecturer** Given lecture for undergraduate students at Erbil Technical Engineering College, participated in the examination committee, scientific committee, and other academic activities which was implemented as an academic staff at the university.

Courses titles

2007-2008	Course Title: Engineering Drawings I Course Title: Workshops & Factories
2008-2009	Course Title: Engineering Drawings I Course Title: Equipment Technology I Course Title: Air-Condition I
2013-2014	Course Title: Equipment Technology II Course Title: Refrigeration Supervision: B.Sc. Graduation Project (*Design and Fabricate of a Solar Duct System for Domestic Application*)
2014-2015	Course Title: Equipment Technology I Course Title: Equipment Technology II Course Title: Refrigeration Course Title: Solar Energy (Master) Supervision: B.Sc. Graduation Project (*A Study on a Ducted Flat Plate Collector using Single Glass and Double Glass*) Supervision: M.Sc. Project title [*Study of Thermal Solar Energy System for Cooling System in Erbil*]
2015-2016	Course Title: Refrigeration Course Title: Air Conditioning System design Supervision: B.Sc. Solar Air Heating System using Solar Ducted Collector system **Supervision: M.Sc. Project title [*Study of Thermal Solar Energy System for Cooling System in Erbil***
2016-2017	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Supervision: B.Sc. The influence of using different wall material and windows in the cooling load estimation of the building in Kurdistan Region

2017-2018	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Course Title: Solar Energy (Master) Course Title: Research Methodology (Master) Supervision: B.Sc. Study the influence of using wall insulation material on the cooling load estimation of the building in Erbil city
2018-2019	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Supervision: Performance analysis of double glaze glass air solar collector for heating process in Erbil
2019-2020	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Supervision: B.Sc Energy Management of Commercial Building , Case Study Erbil Technical Engineering College **Supervision: M.Sc. Project title [Evaluation of Thermal Solar System using Flat Plate Collectors: case study Thermodynamic Optimization]**
2020-2023	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Supervision: B.Sc Global Warming Potential (GWP): Case Study, Performance Analysis of Using R32 instead of R410A in the Refrigeration and Air-Conditioning Supervision: M.Sc. Project title [Evaluation of Thermal Solar System using Flat Plate Collectors: case study Thermodynamic Optimization] Supervision: M.Sc. Project title [Modelling on the Design Parameters of Solar Photovoltaic Panel using Water Cooling Chamber] Supervision: Ph.D. Project title [Performance enhancement of Photovoltaic thermal (PVT) collector tracking system by cooling panel surface (water)
2023-2024	Course Title: Refrigeration and Air Conditioning System design / 4th Stage Course Title: Solar Energy/ 3rd Stage Course Title: Energy Management and Conservation (PhD. Course) Course Title: Renewable Energy (MSc. Course) Supervision: The Use of PV System for Residential Building in Erbil City: A Case Study on the Public Acceptance and Awareness.

PUBLICATIONS

Sally A. Polus & **Ranj Sirwan Abdullah (2025) "**Impact of Different Parameters on Power Generation from Photovoltaic Module Cooled by Three-Sided Water Spray**", International Journal of Heat and Technology, Volume 43, Issue 1 (287-298)**

Najiba Hasan Hamad, Ahmed Mohammed Adham, **Ranj Sirwan Abdullah (2024)** "Cooling electronic components by using nanofluids: A review", **Journal of Thermal Analysis and Calorimetry, Volume 149, Issue 20 (12503–12514)**

Dawod R. Keya, Baker Farangis, **Ranj Sirwan,** and Klaus Behler **(2023)** "Gis-Based Analysis of the Solar Radiation Mapping and Potential Assessment for the North Iraq-Kurdistan Region", **Journal of Engineering Science and Technology, Volume 18, Issue 5 (2269-2280)**

Sally Afram Polus & **Ranj Sirwan Abdullah** (2023) Experimental performance evaluation of tracking photovoltaic system based on variable water flow rate with surface temperature, **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects**, **Volume 45, Issue 2, (5297–5309)**

Ilaf N. Rasool , **Ranj S. Abdullah** (2023) Experimental Study of PV Panel Performance Using Backside Water Cooling Chamber. **International Journal of Energy Production and Management, Volume 8, Issue 2, (89-95)**

Zhyan F. Hassan , Banipal N. Yaqob **, Ranj S. Abdullah** (2023) Enhancing Greenhouse Thermal Management with Flat Plate Solar Collectors and Al_2O_3 -Water Nanofluid. **International Journal of Energy Production and Management, Volume 8, Issue 2, (71-79)**

Ranj Sirwan and Sally Polus, (2022) Simulation Study of Solar Assisted Absorption Cooling System using Flat Plate Collectors at Erbil City-Iraq. **8th International Engineering Conference on Sustainable Technology and Development (IEC), IEEE, Erbil-Iraq** (DOI: 10.1109/IEC54822.2022.9807567)

Sawan Hawro Khaleel and **Ranj Sirwan**, (2022) Performance Analysis of the Solar Water Heating System in Erbil city of Kurdistan region**, Eurasian Journal of Science and Engineering Vol. 8, No. 1**

Ranj Sirwan Abdullah, (2018). Numerical Study of Heat Transfer Enhancement of Nanofluids Spry in Shell and Tube Heat Exchangers**, Polytechnic Journal, Volume 8, Issue 2, (324-346)**

Ranj Sirwan Abdullah, Iyd Eqqab Maree, Azhar Kareem Mohammed.(2017). *Experimental Study of the Performance of Solar Air Heating System*, ***Polytechnic Journal, Volume 7, Issure 2, (70-82)***

Azhar K. Mohammed, **Ranj S. Abdullah**, Iyd E. Maree. (2016). *Comparison between hand calculation and HAP programs for estimating total cooling load for buildings,* ***Zanco Journal of Pure and Applied Sciences***

Ranj Sirwan, K. Sopian and M.A. Alghoul. (2016). *Experimental Study of Modified Absorption Cooling Systems by Adding Ejector–Flash Tank Unit*, Switzerland, Springer International Publishing, Renewable Energy in the Service of Mankind Vol II, P605-614

Azher M. Abed, M.A. Alghoul, **Ranj Sirwan,** Ali Najah Al-Shamani, K. Sopian 2015. Performance enhancement of ejector-absorption cooling cycle by re-arrangement of solution streamlines and adding RHE. ***Applied Thermal Engineering, Volume 77, Issues 1-2, (65-75)***

Ranj Sirwan, M.A. Alghoul, K. Sopian, and Yusoff Ali 2012. Thermodynamic Analysis of an Ejector-Flash Tank-Absorption Cooling System. ***Applied Thermal Engineering, Volume 58, Issues 1-2, (85-97).***

Ranj Sirwan, M.A. Alghoul, K. Sopian, Yusoff Ali and Jasim Abdulateef 2013. Evaluation of Adding Flash Tank to Solar Combined Ejector-Absorption Refrigeration System. ***Solar Energy, Volume* 91 (283-296).**

Ranj Sirwan, Yusoff Ali, and K. Sopian 2012, Combined Ejector-Absorption Solar Cooling System. *World Renewable Energy Forum, WREF 2012, Including World Renewable Energy Congress XII and Colorado Renewable Energy Society (CRES) annual Conferen,* Denver, USA.

Ranj Sirwan, Yusoff Ali, Lim Chin Haw, Sohaif Mat, A. Zaharim, and K. Sopian 2012. Modelling and Optimization of Heat Transfer in Smooth Circulate Tube Used in The Shell and Tube Evaporator. *Proceeding of the 9th WSEAS International Conference on Fluid Mechanics (FLIUDS 12) and Heat and Mass Transfer (HMT 12),* Harvard, Cambridge, USA

Ranj Sirwan, Yusoff Ali, and Kamaruzzaman Sopian 2011. Effect of Spray Nozzle Flow Rate and Saturation Temperature on the Heat Transfer Rate Inside Shell and Tube Evaporator. *Proceeding of the Regional Engineering Postgraduate Conference (EPC) 2011, Universiti Kebangsaan Malaysia,* Malaysia.

Ranj Sirwan, Yusoff Ali, A. Zaharim, and K. Sopian 2011. Effect of Adding Flash Tank on the Evaporator's Thermal Load of The Combined Ejector-Absorption Cooling System. *Proceedings of the 10th WSEAS International Conference on System Science and Simulation in Engineering (ICOSSSE '11),* Penang, Malaysia.

J. M. Abdulateef, M. A. Alghoul, **Ranj Sirwan**, A. Zaharim & K. Sopian, Second Law Thermodynamic Analysis of a Solar Single-Stage Absorption Refrigeration System. *Proceeding of the 2th International Conference on Environment, Economics, Energy, Devices, systems, Communications, Computer, Mathematics (EDSCM 12),*Saint Malo & Mont Siant-Michel, France.

J.Abdulateef, K. Sopian, W. Kader, B. Bais, **R. Sirwan**, B. Bakhtyar and O. Saadatian, Economic analysis of a stand-alone PV system to electrify a residential home in Malaysia. *Proceeding of the 10th WSEAS International Conference on Heat Transfer, Thermal Engineering and Environment (HTE '12) and Fluid Mechanics & Aerodynamics (FMA '12),* Istanbul, Turkey.