Curriculum Vitae

Prof. Dr. Hayder Mohammad Jaffal

Mustansiriyah University– College of Engineering
Mobile: +9647709252282
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PERSONAL SUMMARY:

Dr. Hayder is currently teaching in the department of mechanical engineering. He is interested in research activities in the fields of energy and exergy analysis, cooling of electronic devices and solar energy. He also conducted supervision of postgraduate students in the aforementioned fields.

Google scholar I D.: https://scholar.google.com/citations?user=8joso2wAAAAJ&hl=en

ResearchGate ID. : https://www.researchgate.net/profile/Hayder-Jaffal

ORCID ID. : https://orcid.org/0000-0002-3048-9623

Scopus Author I D: https://www.scopus.com/authid/detail.uri?authorId=57201401928

EDUCATION:

- PhD/ Power / Mechanical Department/ College of Engineering/ Mustansiriyah University, 2016.
- M.SC/Fluid Dynamics/Mechanical Engineering Department/University of Technology 2001.
- B.SC, Mechanical Engineering Department/University of Technology 1998
-

ACADEMIC /TEACHING EXPERIENCE:

- Assistant lecturer, Environmental Engineering Department, College of Engineering - Mustansiriyah University 2008-2011.
- Lecturer, Environmental Engineering Department, College of Engineering - Mustansiriyah University 2011-2016.
- Assistant Professor, Mechanical Engineering Department, College of Engineering - Mustansiriyah University 2016-2021.
- Professor, Mechanical Engineering Department, College of Engineering - Mustansiriyah University 2016-until now.

ACADEMIC HONORS AND AWARDS:

- Awarded more than 70 thanks and appreciation.

الأستاذ الدكتور
علي خالد جاسم
معاون العميد للشؤون العلمية

أحسان صباح الأمين

COURSES TAUGHT:

Undergraduate	Graduate
Fluid Dynamics	Advanced Fluid Dynamics
Numerical Analysis	Two Phase Flow
Mathematics	Energy Management and Applications
Hydraulic/Lab	Scientific research methodology

ROFESSIONAL AFFILIATIONS:

- Member of Iraqi Engineers Association

PUPLICATIONS:

1. **"Numerical Modeling of Wire and Tube Condenser Used in Domestic Refrigerators"** Journal of Engineering and Development, Vol. 13, No. 2, June (2009).
2. **"Theoretical and Experimental Study of a Forward Swept Wing"** Anbar Journal for Engineering Sciences, Vol.3 No.2 (2010)
3. **"Modeling and Optimization of Salt- Gradient Solar Pond Located in Baghdad"** Al-Qadisiya Journal For Engineering Sciences, Vol.3 No.4 (2010)
4. **"Performance of Cooling Tower with Honeycomb Packing"** Eng. & Tech. Journal, Vol. 29, No.6, (2011).
5. **"Effect of Operation Conditions on Exit Water Temperature of Condenser (Atmospheric) by Using Neural Network"** Journal of Engineering and Development, Vol. 15, No. 3, September (2011).
6. **"Theoretical Analysis on Thermal Energy Storage using Phase Change Materials Capsules for Solar Organic Rankine Cycle Power Generation System"** Al- Nahrain University, College of Engineering Journal (NUCEJ) Vol.17 No.1, (2014)
7. **"Thermal Characteristics of Closed Wet Cooling Tower Using Different Heat Exchanger, Tubes Arrangement"** Baghdad University, Journal of Engineering Vol. 22, No. 5, January (2016)
8. **"Experimental Investigation for the Thermal performance of Modified Closed Wet Cooling Tower"** Al-Nahrain University, College of Engineering Journal (NUCEJ) Vol.91 No.2, (2016)
9. **Energy and Exergy Analysis on Modified Closed Wet Cooling Tower in Iraq"** Al-Khwarizmi Engineering Journal, Vol. 12, No. 2, (2016)
10. **"An Experimental Study on Heat and Mass Transfer for Closed Wet Cooling Tower Using Different Water Distribution Systems"** Journal of Engineering and Sustainable Development, Vol. 20, No. 03,May (2016)
11. **"The Effect of Fin Design on Thermal Performance of Heat Sink"** Baghdad University, Journal of Engineering, Vol. 23, No. 5 May (2017)

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رئيس قسم الهندسة الميكانيكية

12. **"Experimental Study with Using ANFIS to Evaluate the Performance of a Modified Closed Wet Cooling Tower"** Journal of University of Duhok (JUD), Vol. 20, No. 1, Special Issue of the 2nd International Conference of the Colleague of Engineering- University of Duhok, May (2017)
13. **"Numerical and Experimental Investigations on the Performance Characteristics for Different Shapes Pin Fin Heat Sink"** International Journal of Computation and Applied Sciences IJOCAAS, Vol. 4, Issue. 3, June (2018)
14. **"Experimental Study on Thermal Performance of Glazed Roof with Phase Change Materials as an Application of Energy Conservation in Residential Buildings**, Journal of Engineering and Sustainable Development, Vol. 22, No. 02,May (2018)
15. **"Numerical and Experimental Investigation of Heat Transfer in Liquid Cooling Serpentine Mini-Channel Heat Sink with Different New Configuration Models"** Thermal Science and Engineering Progress, Vol. 6, (2018)
16. **"Thermal Analysis of Integrating Roof with Phase Change Materials for Energy Saving in Residential Buildings"** Academic Journal of Nawroz University, Vol. 7, No. 4, (2018)
17. **"Effects of Channel Configuration on Hydrothermal Performance of the Cylindrical Mini-Channel Heat Sinks"** Applied Thermal Engineering, Vol. 148, (2019)
18. "**Performance Optimization of a Cylindrical Mini-channel Heat Sink using Hybrid Straight–Wavy Channel**" International Journal of Thermal Sciences, Vol. 146, (2019)
19. "**Experimental Study of Forced Heat Convection through a Vertical Porous Annuli**" Journal of Mechanical Engineering Research and Developments, Vol. 43, (2020)
20. "**Effect of Porous Media on The Performance Characteristics of a Concentric Vertical Annular Tube**" Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, , Vol. 75, (2020)
21. "**Enhancement of the Thermal Performance Characteristics of an Electrical Power Transformer**" Engineering Science & Technology, Vol. 2, (2021)
22. "**Performance Evaluation of Serpentine and Multi-channel Heat Sinks Based on Energy and Exergy Analyses**" Applied Thermal Engineering, Vol. 18, (2021)
23. **"Effect of the fluid flow fragmentation on the hydrothermal performance enhancement of a serpentine mini-channel heat sink"** Case Studies in Thermal Engineering, Vol. 24, (2021)
24. **"The effect of interruptions on thermal characteristics of corrugated tube"** Case Studies in Thermal Engineering, Vol. 25, (2021)
25. **"Influence of Various Types of Twisted Tape inserts on Hydrody-namic, Pressure Drop and Thermal Heat Performance in Heat Ex-changers: A Review Study"** Anbar Journal Of Engineering Science, Vol. 9, (2021)
26. **"Augmentation of Fluid Flow and Heat Transfer Characteristics in corrugated Channel: A Review Study"** Diyala Journal of Engineering Sciences, Vol. 14, No.1, (2021)
27. "**Thermal performance enhancement of a cooling tower heat sink radiator**" Case Studies in Thermal Engineering, Vol. 28, (2021)

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28. "**Effect of fin shape on thermal performance enhancement of PCM-based low-grade heat harnessing exchanger**" Frontiers in Heat and Mass Transfer (FHMT), 18, 37 (2022)
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31. "**Numerical and experimental thermohydraulic performance evaluation of multi-minichannel heat sinks considering channel structure modification**" International Communications in Heat and Mass Transfer, Vol. 145, (2023)
32. "**Performance evaluation of a printed circuit heat exchanger with a novel two-way corrugated channel**" Results in Engineering, Vol. 19, (2023)
33. "**Examining the effect of backward/forward-facing wavy channels on the thermohydraulic performance of a printed circuit heat exchanger under the laminar flow regime**" International Journal of Thermofluids, Vol. 20, (2023)
34. "**Analysis of channel configuration effects on heat transfer enhancement in streamline-shaped cold plates used in battery cooling system: A comparative study**" International Communications in Heat and Mass Transfer, Vol. 155, (2024)
35. "**Assessment of Heat Transfer and Friction Characteristics in Circular Pipe Utilizing Ball as Tabulators,** Journal of Engineering and Sustainable Development, Vol. 29, No. 01, January (2025)
36. "**Assessment of the hydro-thermal performance for a novel hexagonal mini-channel heat sink for cooling a cylindrical heat source**" International Journal of Thermofluids, Vol. 24, (2024)
37. "**Comparative investigation on heat transfer augmentation in a liquid cooling plate for rectangular Li-ion battery thermal management**" Results in Engineering, Vol. 24, (2024)
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39. "**An experimental study to evaluate the performance of variable-width channel cold plates for cooling rectangular Li-ion batteries**" International Journal of Thermofluids, Vol. 24, (2024)
40. "**Investigating the influence of inlet/outlet arrangements and flow direction on the hydro-thermal performance of a multi-minichannel cold plate**" International Journal of Heat and Fluid Flow, Vol. 110, (2024)
41. "**Comparative analysis of multichannel cold plates with various corrugated channel structures and dual flow outlets**" International Communications in Heat and Mass Transfer, Vol. 164, (2025)
42. "**A Numerical Investigation of the Impact of Converging/Diverging Curved Channel Configuration on the Multi-Channel Cold Plate Hydrothermal Performance**" Heat Transfer, Vol. 54, No. 5 (2025)
43. "**Thermal and hydraulic performance of serpentine mini-channel heat sink: influence of integrated obstacles in curved channels**" International Journal of Thermal Sciences, Vol. 215, (2025)

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44. "**Influences of Secondary Channels and Integrated Obstacles on the Hydrothermal Performance of an Arced Serpentine Minichannel Heat Sink**" Heat Transfer, Vol. 55, No. 1 (2025)
45. "**Performance analysis of a mini-channel heat sink: Effects of helical screw tape inserts**" Case Studies in Thermal Engineering, Vol. 75, (2025)
46. "**Influence of different insert configurations on the performance enhancement of a multichannel cooling plate**" Results in Engineering, Vol. 29, (2026)

PROFFESSIONAL DEVELOPMENT

1. Certificate of participation, **"Modeling and Optimization of Solar Organic Rankine Cycle for Low - Temperature Power Generation System"** The 4th International Scientific Conference of Salahaddin University-Erbil, October 18-20, (2011)
2. Chairman of the Committee on the website of the Conference of the Engineering theses / Al-Mustansiriyah University/ Faculty of Engineering (2012)
3. Certificate of participation, "**Investigation of the Effect of Packing Location on Performance of Closed Wet Cooling Tower Based on Exergy Analysis**" ModTech International Conference - Modern Technologies in Industrial Engineering IV, Iasi, Romania, Aug (2016)
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7. Certificate of participation, "**The Behavior of Glauber's Salt as a Heat Storage Material for Residential Iraqi Buildings**" The 2nd International Scientific Conference on Engineering and Innovative Technology - Salahaddin University-Erbil, April 14-16, (2019)
8. Certificate of participation, "**Experimental Study of the thermal Performance Behavior of Electric Power Transformers**" First Online Scientific Conference for Graduate Engineering Students - College of Engineering, Mustansiriyah University, Baghdad-Iraq, June (2020)
9. Certificate of participation, "**Thermal Contribution of Phase Change Materials Incorporated Within Glazed Roof for Space Heating**" 6th Applied Engineering and 3rd Sustainable Engineering Conference - College of Engineering, Mustansiriyah University, Baghdad-Iraq, June (2023)

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الأستاذ
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السيرة الذاتية

الاستاذ الدكتور حيدر محمد جفال

الجامعة المستنصرية – كلية الهندسة
Mobile: +9647709252282
Email: jaffal.emi@uomustansiriyah.edu.iq, hayder.jaffal@gmail.com

ملخص تعريفي:

د. حيدر تدريسي في قسم الهندسة الميكانيكية. مهتم في البحث في مجالات تحليل الطاقة والطاقة المتاحة وتبريد الوحدات الاليكترونية والطاقة الشمسية. يقوم بالأشراف طلبة الدراسات العليا في المجالات المذكورة.

Google scholar I D.: https://scholar.google.com/citations?user=8joso2wAAAAJ&hl=en

ResearchGate ID. : https://www.researchgate.net/profile/Hayder-Jaffal

ORCID ID. : https://orcid.org/0000-0002-3048-9623

Scopus Author I D: https://www.scopus.com/authid/detail.uri?authorId=57201401928

الشهادات الدراسية:

- دكتوراه هندسة ميكانيكية/ قوى /2016 – كلية الهندسة – الجامعة المستنصرية
- ماجستير هندسة ميكانيكية/ ديناميك الموائع /2001 – قسم الهندسة الميكانيكية – الجامعة التكنولوجية
- بكالوريوس هندسة ميكانيكية/ 1998 قسم الهندسة الميكانيكية – الجامعة التكنولوجية

الخبرة الأكاديمية والتدريس:

- مدرس مساعد, قسم الهندسة البيئية, كلية الهندسة- الجامعة المستنصرية 2008-2011.
- مدرس, قسم الهندسة البيئية, كلية الهندسة- الجامعة المستنصرية 2011-2016.
- استاذ مساعد, قسم الهندسة الميكانيكية, كلية الهندسة- الجامعة المستنصرية 2016-2021.
- استاذ, قسم الهندسة الميكانيكية, كلية الهندسة- الجامعة المستنصرية 2021 ولحد الان.

التكريم والجوائز الأكاديمية:

- حاصل على أكثر من 70 شكر وتقدير

المقررات الدراسية التي تم تدريسها:

الدراسات العليا	الدراسات الأولية
ديناميك موائع متقدم	ديناميك الموائع
جريان ثنائي الطور	التحليلات العددية
إدارة الطاقة وتطبيقاتها	الرياضيات
منهجية البحث العلمي	الهيدروليك/مختبر

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رئيس قسم الهندسة الميكانيكية

الأستاذ الدكتور
علي خالد جاسم
معاون العميد للشؤون العلمية

الأنتساب المهني او الجمعيات:

- عضو نقابة المهندسين العراقية

المنشورات العلمية:

1. **"Numerical Modeling of Wire and Tube Condenser Used in Domestic Refrigerators"** Journal of Engineering and Development, Vol. 13, No. 2, June (2009).
2. **"Theoretical and Experimental Study of a Forward Swept Wing"** Anbar Journal for Engineering Sciences, Vol.3 No.2 (2010).
3. **"Modeling and Optimization of Salt- Gradient Solar Pond Located in Baghdad"** Al-Qadisiya Journal For Engineering Sciences, Vol.3 No.4 (2010).
4. **"Performance of Cooling Tower with Honeycomb Packing"** Eng. & Tech. Journal, Vol. 29, No.6, (2011).
5. **"Effect of Operation Conditions on Exit Water Temperature of Condenser (Atmospheric) by Using Neural Network"** Journal of Engineering and Development, Vol. 15, No. 3, September (2011).
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8. **"Experimental Investigation for the Thermal performance of Modified Closed Wet Cooling Tower"** Al-Nahrain University, College of Engineering Journal (NUCEJ) Vol.91 No.2, (2016)
9. **Energy and Exergy Analysis on Modified Closed Wet Cooling Tower in Iraq"** Al-Khwarizmi Engineering Journal, Vol. 12, No. 2, (2016)
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11. **"The Effect of Fin Design on Thermal Performance of Heat Sink"** Baghdad University, Journal of Engineering, Vol. 23, No. 5 May (2017)
12. **"Experimental Study with Using ANFIS to Evaluate the Performance of a Modified Closed Wet Cooling Tower"** Journal of University of Duhok (JUD), Vol. 20, No. 1, Special Issue of the 2nd International Conference of the Colleague of Engineering- University of Duhok, May (2017)
13. **"Numerical and Experimental Investigations on the Performance Characteristics for Different Shapes Pin Fin Heat Sink"** International Journal of Computation and Applied Sciences IJOCAAS, Vol. 4, Issue. 3, June (2018)
14. **"Experimental Study on Thermal Performance of Glazed Roof with Phase Change Materials as an Application of Energy Conservation in Residential Buildings**, Journal of Engineering and Sustainable Development, Vol. 22, No. 02, May (2018)

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15. **"Numerical and Experimental Investigation of Heat Transfer in Liquid Cooling Serpentine Mini-Channel Heat Sink with Different New Configuration Models"** Thermal Science and Engineering Progress, Vol. 6, (2018)
16. **"Thermal Analysis of Integrating Roof with Phase Change Materials for Energy Saving in Residential Buildings"** Academic Journal of Nawroz University, Vol. 7, No. 4, (2018)
17. **"Effects of Channel Configuration on Hydrothermal Performance of the Cylindrical Mini-Channel Heat Sinks"** Applied Thermal Engineering, Vol. 148, (2019)
18. **"Performance Optimization of a Cylindrical Mini-channel Heat Sink using Hybrid Straight–Wavy Channel"** International Journal of Thermal Sciences, Vol. 146, (2019)
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21. **"Enhancement of the Thermal Performance Characteristics of an Electrical Power Transformer"** Engineering Science & Technology, Vol. 2, (2021)
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26. **"Augmentation of Fluid Flow and Heat Transfer Characteristics in corrugated Channel: A Review Study"** Diyala Journal of Engineering Sciences, Vol. 14, No.1, (2021)
27. **"Thermal performance enhancement of a cooling tower heat sink radiator"** Case Studies in Thermal Engineering, Vol. 28, (2021)
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29. **"Performance Enhancement of a Novel Serpentine Channel Cooled Plate used for Cooling of Li-ion Battery Module"** International Journal of Thermal Sciences, Vol. 184, (2023)
30. **"Numerical investigation on heat transfer and fluid flow in a multi-minichannel heat sink: Effect of channel configurations"** Results in Engineering, Vol. 17, (2023)
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47.تطوير المهارات:

1. Certificate of participation, **"Modeling and Optimization of Solar Organic Rankine Cycle for Low - Temperature Power Generation System"** The 4th International Scientific Conference of Salahaddin University-Erbil, October 18-20, (2011)
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